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EDITORIAL



OUR I.T.U. REPRESENTATIVE TO GENEVA

As readers are now aware, John Moyle, VK2JU, has been selected as the representative from the Wireless Institute of Australia to accompany the Australian Government Delegation to the Administrative Radio Conference to be held in Geneva commencing on 16th August, 1959.

John Moyle needs no introduction to Australian Amateurs as he is well known to all as Editor of the Australian publication, "Radio, Television and Hobbies." In addition to his vast experience in the technical field of commercial radio he has a solid background of experience in Amateur Radio operating and W.I.A. administration extending back to 1932 when he was first licensed under the call sign of VK3JC.

He was born in Melbourne in 1908 and educated at Scotch College where he first interested himself in the technical side of Radio as editor of the school magazine. Although he spent some years as a journalist after leaving school, his natural interest in technical things directed his steps back into the world of radio and a year after obtaining his A.O.C.P. he moved to Sydney and operated under his present call sign, VK2JU.

During the years since 1933, he has given much to Amateur Radio, particularly in the v.h.f. bands where he conducted, with mobile equipment, explorations of all the now standard areas from Bowral to the Blue Mountains and Mt. Elliott in

the north of New South Wales, during which time he made the then longest contact over a seventy mile route using modulated oscillators and super-regenerative receivers in the 56 Mc. and 112 Mc. bands.

After serving with the R.A.A.F. during the war as Squadron Leader in charge of Technical Administration in the Directorate of Telecommunication and Radar, he again continued interest in Amateur Radio operating individual transmitters on all bands from 3.5 Mc. to 576 Mc. For two years he maintained schedules over 150 and 200 mile paths on 144 Mc. from a difficult city location where interference was at an all time high.

Concurrently he interested himself in and devoted much of his time to the administrative affairs of the N.S.W. Division of the W.I.A. where he served on various committees, as Federal Councillor attending five or more Federal Conventions, as Vice-President of the Division, and finally two years as President.

The problem of selecting a suitable representative to send to Geneva was not an easy one, but the Federal Executive is satisfied that in John Moyle it has chosen the best man in Australia to face the problems ahead. His vast knowledge and experience in both radio and administration will ensure that the Amateurs' case is adequately presented at Geneva.

FEDERAL EXECUTIVE.

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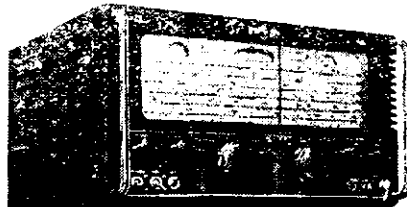
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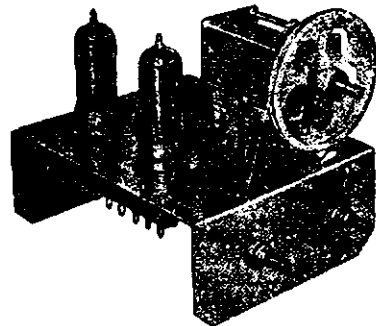
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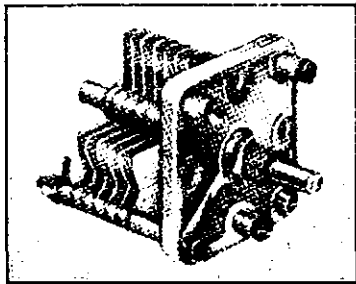
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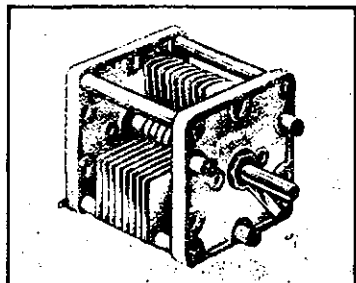
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		Min.	Max.		
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Putting Sense into Transmitter Hunting

BY J. C. DUNCAN,* VK3VZ

IN the "old days" of transmitter hunting it was the custom to take a bearing from the starting point, travel a few miles at right angles and take another bearing, then by triangulation, the direction of the transmitter could be determined.

If you have ever been out on one of the W.I.A. hunts you would realise that you would be a bad last if you adopted that old fashioned technique, because all the cars now make straight for the transmitter site and "home in" like pigeons, that is if pigeons flew in a straight line.

The answer is, of course, the use of Sense—and so a little theory on how it works.

Firstly, let's take the Loop Aerial. This is a large diameter coil, mounted on edge and capable of being rotated in the horizontal plane—let's see how it picks up the radio signals.

The sine wave represents the voltage of the received wave at any moment, and "A", "B" and "D" show the loop or frame at any instant in respect to the wave.

Firstly the frame can be considered as two vertical aerials joined at the top and bottom.

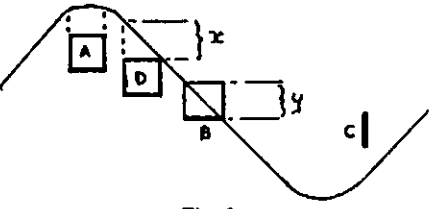


Fig. 1.

When the frame is at "A", the two voltages in the vertical sides are at maximum, but are acting in opposite directions around the loop, so their net effect is zero.

When the frame is at "D", the induced voltages are less, but differ in amplitude by an amount proportional to the length "x", and this is the effective voltage around the frame.

Due to the fact that the voltage in the frame aerial is the algebraic difference of the voltages in the vertical limbs, and in fact is proportional to the instantaneous rate of change of the magnetic and electrical force in the wave, it is often known as the differential e.m.f.

When the frame is at "B" and the flux at the centre of the frame is zero, we see that although the voltages in the side limbs are almost at a minimum, they are acting in the same direction around the frame (one side being in the positive field and the other in the negative field), therefore the frame voltage, which is proportional to "y", is at a maximum.

Note also that if the frame is now turned side on to the incoming wave, as at "C", the voltages in each leg will be equal and opposite at all points of the wave, thereby giving zero output.

This, therefore, corresponds to the null point of the loop.

The important point of all this is that as the output of the frame aerial is the algebraic difference of the voltages in the vertical limbs the output voltage of the loop will be 90° out of phase with the flux in the wave.

Several other facts can be deduced from the theory so far:—

- (a) The frame voltage decreases as the width of the frame is reduced, and
- (b) The voltage in the vertical limbs is proportional to their height, so therefore the signal pick-up is proportional to the area of the frame—so it pays to use the largest practical size.

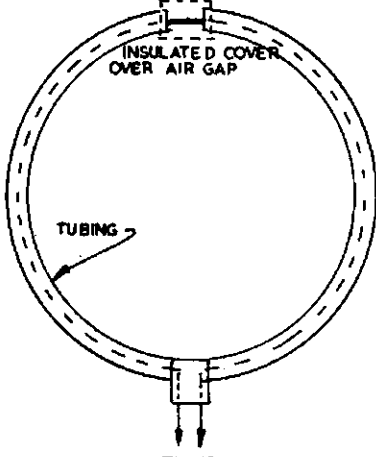


Fig. 2.

It is also obvious that if there are "N" turns in the loop, the output will be "N" times as great. So it is wise to keep the distributed capacity between turns as small as possible to allow the greatest number of turns to be used for a given loop diameter.

In most commercial installations, to avoid unbalances to ground, the loop is enclosed in an electrostatic shield, usually tubing which is open at the top, as in Fig. 2.

To obtain maximum pick-up from the loop we will need the most turns

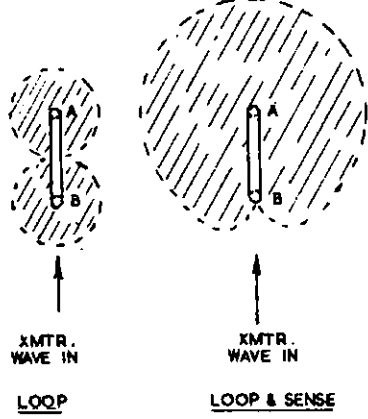


Fig. 3.

we can conveniently get, and therefore it will be necessary, as mentioned before, to keep the capacity to the shield and between turns to a minimum. A fairly large diameter tubing will help here, and in one commercial d.f. loop each turn of wire is woven through a flat insulated strip which is pushed into the tubing of the loop. Jumper wires then connect each turn to the next one.

When on a hunt, with the loop turned side on to the transmitter, we have the null or zero point quite clearly defined, but this only enables us to determine the line on which the incoming signal is being received, so if the bearing is north-south, which way do you go? It is here that we need Sense determination.

In Fig. 3 (a) we are looking down on the loop which is end on to the received signal and giving maximum output. The vertical limbs "A" and "B" are 180° out of phase with each other, as we have seen.

Now, say we introduce a voltage from a vertical aerial so that it is in phase with "A", we will then get a directional pattern as shown in Fig. 3 (b), with the voltage of the vertical aerial adding to the limb of the frame "A" and, if it is of equal voltage and opposite phase, cancelling the voltage at "B".

The technique is therefore to first pick up the transmitted signal with the loop only, and determine the line through the receiving point by the loop null. Then turn the loop end on, and listening to the signal carefully, switch on the sense aerial and note if the signal rises or decreases. Revolve the loop through 180° and again switch on the sense. If the signal had shown an increase in level before, it will now show a drop as the vertical sense aerial cancels the appropriate side of the loop. A pointer on the rotating mast will now show the way.

DESIGN OF A SENSE SYSTEM

Now, how can we design a sense system for our loop? Let's look at the important points of the loop first.

We know the loop voltage is 90° out of phase with the incoming wave regardless of whether the loop is tuned or not, but it is the currents which can be changed in phase by altering the reactance of the circuit.

If the loop is tuned the inductive and capacitive reactances cancel and the current will be in phase with the voltage, that is lagging the received wave by 90°. If, on the other hand, the loop is untuned, the circuit will be inductive and the current will lag the voltage by very nearly a further 90°, so we can see that the tuning of the loop is very critical.

The sense aerial voltage is in phase with the received voltage, but to keep the current in phase with the voltage, a resistance is usually inserted in series with the aerial to swamp any reactance which would upset this desirable state of affairs.

* 6 Columba Street, North Balwyn, Vic.

In Table 1 is shown a list of the usual circuits and the phase shifts involved, which will enable any Amateur to design his own sense system.

Now let's take an example. Fig. 4 shows a typical aircraft d.f. circuit. L1 and L3 resonate above the signal frequency (equivalent to No. 4 of Table 1). Therefore the phase shift is:

$$\begin{aligned} \text{Radiation field to loop } 90^\circ \\ \text{L3 and L1 to L2 } \dots \dots 90^\circ \end{aligned}$$

$$= 180^\circ \text{ or } 0^\circ$$

depending on which way the loop is turned.

C6, C2, L5 and L4 resonate at the signal frequency, as do L2 and C1 (equivalent to No. 3 in Table 1).

Therefore the phase shift is 0° and the sense aerial will be in phase with either one or other of the vertical limbs of the loop.

The resistor R is to vary the input from the sense antenna, and is adjusted to give complete cancellation of signal when the loop is in the position shown in Fig. 3 (b).

As the ear finds difficulty in judging signal levels over any period of time, it is desirable for the sense aerial to be connected for only a few seconds at a time. A simple arrangement is a low capacity toggle switch or push-

button in series with the sense aerial where it enters the receiver.

If it is possible to get a perfect null off the back of the loop at all times, the sense can be left on, but as you can see by the field pattern in Fig. 3 (b) the nose of the pattern is broad, and if any lobe exists off the back at all a small null will appear each side of the back lobe, and can give false readings. Also, with the car in different positions with respect to the incoming signal, pick-up of the loop and sense aerial can vary slightly, so com-

plete cancellation of the rear loop will not always apply.

If an "S" meter is used the sense can be left on, and an accurate reading obtained on the broad nose of the field pattern, but it is not satisfactory by ear. The only difficulty here is that with a keyed c.w. signal readings can only be taken during the key-down period.

Our technique has been to use the loop only for locating the line on which the transmitter is located and then to

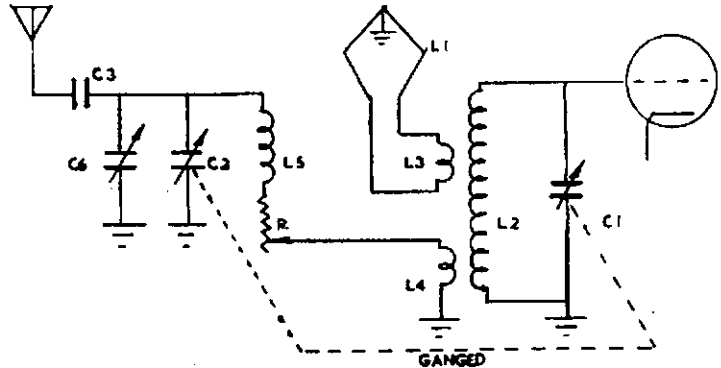


Fig. 4.

Type	Circuit	Phase Shift at Resonance
1. Series resonant circuit.		90°
2. Capacity coupled single resonant circuit, from a low impedance source.		90°
3. Two coupled resonant circuits (primary and secondary resonant at the same frequency) with reactive input coupling.		0°
4. Coupled resonant circuit having low frequency or high frequency primary with reactive input coupling.		90°
5. Two coupled resonant circuits from high plate resistance amplifier. (The primary and secondary resonant at the same frequency.)		90°
6. Coupled resonant circuit having low frequency or high frequency primary from a high plate resistance amplifier.		0°

Table 1.

switch on the sense to determine in which direction to go.

The sense aerial is not used then until we get very close, and only if we are doubtful which side road to take, right or left.

Before leaving the car we again take a null bearing with the loop; then, taking up our loops and crystal diode meters, we walk along the null line until we get an indication. From then on experience, deduction, and good eyes and ears do the rest.

SENSE AMPLIFIER

The receiver in use in the car is a "Command", covering the range 3.2 to 7.5 Mc. inc. The antenna coil was modified by breaking the earth end of the inductance and connecting it to a co-ax connector on the front panel by means of a short piece of co-ax. A six-turn primary winding was also added to the lower end of the coil, and as this primary is subject to the full h.t. voltage, it was well insulated.

Fig. 5 shows the circuit of the sense amplifier and the modifications to the r.f. stage of the "Command" receiver.

A small chassis was made up and fitted in the space normally occupied by the genemotor, and on this the r.f. sense amplifier was mounted. This is entirely conventional with the aerial input coil pre-tuned to 80 metres. The plate of the r.f. amplifier was connected to the new primary winding by a length of co-ax to prevent interaction with the other wiring in the "Command" receiver.

The sense antenna was the normal b.c. receiver antenna, and was connected to a second co-ax connector on the front panel. A low capacity toggle switch was mounted close to this connector and the lead taken through the switch and thence via co-ax to the primary of the new sense amplifier aerial coil.

Gain of the sense amplifier is controlled by a potentiometer in the cath-

PREDICTION CHART, JAN. '59

Mo.	E. AUSTRALIA	W. EUROPE	S.E.	Mo.													
0	2	4	6	8	10	12	14	16	18	20	22	24	45				
45	GMT												45				
28	-----												28				
21	-----												21				
14	-----												14				
7	-----												7				
0	E. AUSTRALIA	W. EUROPE	L.R.	0	2	4	6	8	10	12	14	16	18	20	22	24	45
45	-----												45				
28	-----												28				
21	-----												21				
14	-----												14				
7	-----												7				
0	E. AUSTRALIA	MEDITERRANEAN	0	2	4	6	8	10	12	14	16	18	20	22	24	45	
45	-----												45				
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21	-----												21				
14	-----												14				
7	-----												7				
0	E. AUSTRALIA	N.W. U.S.A.	0	2	4	6	8	10	12	14	16	18	20	22	24	45	
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0	E. AUSTRALIA	N.E. U.S.A. S.E.	0	2	4	6	8	10	12	14	16	18	20	22	24	45	
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0	E. AUSTRALIA	N.E. U.S.A. L.R.	0	2	4	6	8	10	12	14	16	18	20	22	24	45	
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0	E. AUSTRALIA	CENTRAL AMERICA	0	2	4	6	8	10	12	14	16	18	20	22	24	45	
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0	E. AUSTRALIA	S. AFRICA	0	2	4	6	8	10	12	14	16	18	20	22	24	45	
45	-----												45				
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21	-----												21				
14	-----												14				
7	-----												7				
0	E. AUSTRALIA	FAR EAST	0	2	4	6	8	10	12	14	16	18	20	22	24	45	
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21	-----												21				
14	-----												14				
7	-----												7				
0	W. AUSTRALIA	W. EUROPE	0	2	4	6	8	10	12	14	16	18	20	22	24	45	
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0	W. AUSTRALIA	N.W. U.S.A.	0	2	4	6	8	10	12	14	16	18	20	22	24	45	
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0	W. AUSTRALIA	S. AFRICA	0	2	4	6	8	10	12	14	16	18	20	22	24	45	
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0	W. AUSTRALIA	FAR EAST	0	2	4	6	8	10	12	14	16	18	20	22	24	45	
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ode circuit and is tuned to give cancellation on sense operation, when the loop and received signal bear the relationship shown in Fig. 3 (b).

To maintain electrical balance in the loop, the loop was tuned by a split-stator condenser with the stator earthed, and pick-up to the co-ax lead to the receiver was via a one-turn coil closely coupled to the tuned loop.

Now, how does our sensing check out?

Sense Antenna Side:

- (a) Sense antenna to sense amp. grid (No. 4, Table 1) 90°
 - (b) Sense amp. plate untuned primary to "Command" receiver aerial circuit (No. 6, Table 1) 0°
- } 90° total

Loop Side:

- (a) Magnetic field to tuned loop 90°
 - (b) Bottom few turns of grid coil inductance of r.f. stage directly coupled to loop through co-ax line (No. 3, Table 1) 0°
- } 90° total

ALTERNATIVE SENSE SET-UP

The vertical effect in a loop aerial can cause poor nulls and is usually eliminated by grounding the electrical centre of the loop. If a resistance is placed in this ground lead the voltage due to vertical effect will be developed across it.

An interesting circuit which uses this effect as a sense antenna is shown in Fig. 6 (a) and (b). In this circuit a perfect cardioid can be obtained. The behaviour is easier to see if the circuit is re-drawn as at Fig. 6 (b). The vertical effect is used to give sense.

FF = two halves of frame.

Two degrees of freedom exist.

Frame effect is due to the e.m.f. induced round the frame, the complete frame circuit now consisting of the active section FF and also coils L1 L2 which are parallel with the frame across CI.

Acting as an open aerial the complete system is tuned by C2 and with this arrangement the phase of the vertical current can be made to balance the frame current, and the relative amplitudes varied as before with resistance R.

Obviously the data presented is only in very brief form, and it is suggested that those interested should study good reference text books on the subject. Amongst those recommended are:

- "Wireless Direction Finding," by Keen.
- "Radio Direction Finders," by Bond.

ERRATUM

An Automatic Morse Keyer, Dec. '58. On page 7, third column, between the seventh and eighth lines of paragraph under Fig. 2, insert: "response. In the rest state, the larger".

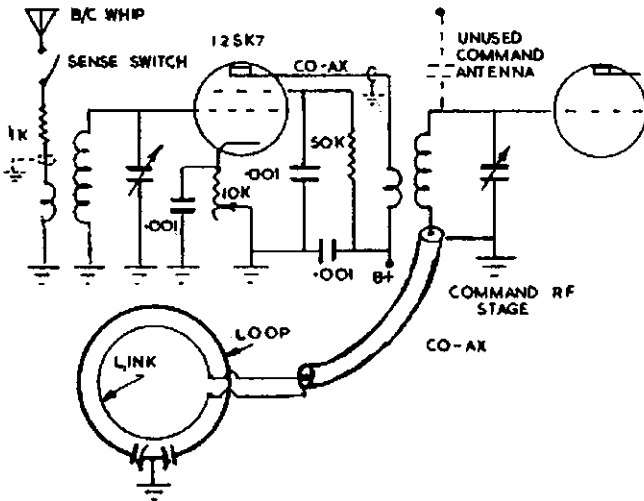


Fig. 5.

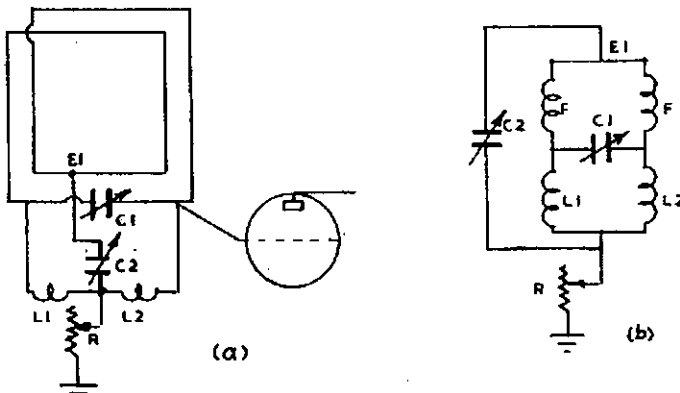
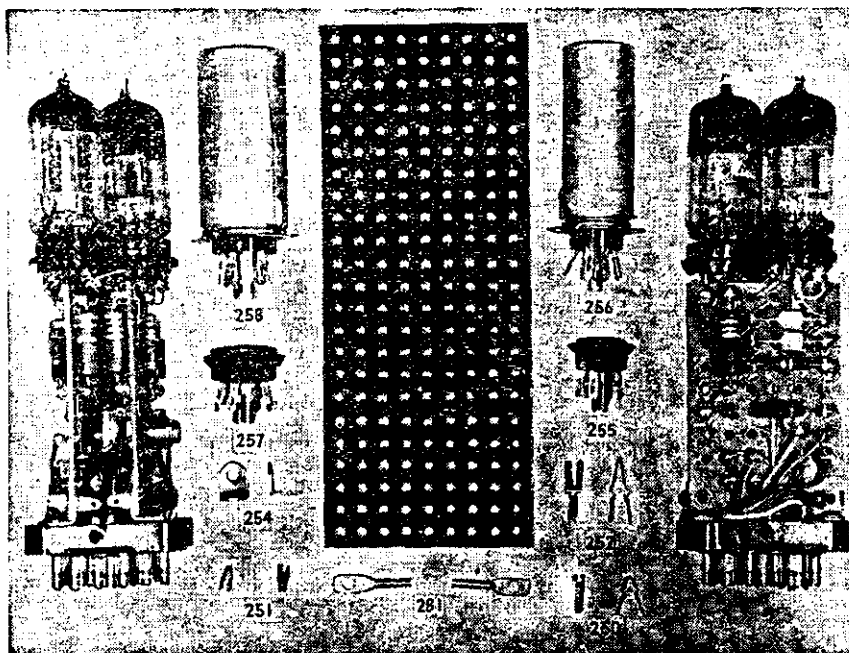


Fig. 6. (Fig. 6b is the same circuit as (a) but drawn in a different way.)

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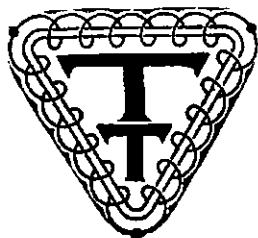
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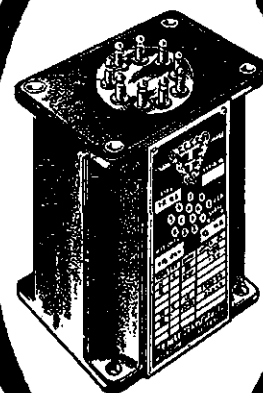
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QUARTZ CRYSTAL FILTERS

Including Part Six of Modifying the AR7 Receiver

SECTION TWO

BY G. M. BOWEN,* VK5XU

ALIGNING CRYSTAL FILTER

With the foregoing in mind, it should be possible to appreciate the steps set out in the succeeding paragraphs for aligning any crystal filter and i.f. channel. Before starting, make sure that the crystal is there. In the AR7 it is in a holder beneath a cover plate on the right hand side of the chassis. Remove the holder and check activity of the crystal by putting it (a) into a Pierce oscillator, (b) across the grid-ground circuit of the i.f. stage of a receiver, (c) into oscillator vacuum tube circuits shown in laboratory handbooks.

Having made certain that the crystal is there, switch it in and note whether any retuning of the broadcast station you are tuned to is required for maximum output. If it is so necessary, then proceed as under.

Alignment Procedure I.

(Assuming that the i.f. is correct.—see "A.R.") The method used will depend largely on what instruments are available and the first procedure is the simplest. A stable signal generator or frequency meter (BC221 or similar) is essential. No modulation of the signal is required since the receiver will have an "S" meter.

For the AR7

Switch in the crystal, set the selectivity control on 10 and the phasing control to centre.

Adjust the attenuator of the signal generator to a convenient level and swing the generator frequency slowly over 455 Kc., noting the peak on the "S" meter.

If one sharp peak only is observed, the i.f. alignment is correct; should, however, two peaks appear, this will show incorrect alignment or inaccurate setting of the generator. Its frequency should be set on the centre of the peak which appears the sharper—this should be 455 Kc., the crystal frequency.

Check the accuracy of the i.f. alignment by re-adjusting the iron slugs (leaving the grid circuit in T2 and T4 alone) for maximum peak on the "S" meter with minimum input from the generator.

If modulation is available, adjust T4 grid circuit for maximum peak audio output.

After carefully checking these circuits several times, only one sharp peak should appear on the "S" meter and the sensitivity of these circuits from the grid of the converter tube should be of the order of 10 microvolts.

With the crystal IN, the signal to noise ratio should be improved and again further improved as the selectivity is increased after aligning T2 crys-

tal filter grid circuit. This is done as follows:

1. If no stable oscillator is available: Insert coil unit "B" and tune in a b.c. station. Switch in the crystal and set selectivity control on O. Phasing control on centre. Adjust T2 for the best tonal qualities of the music (lack of high frequencies, and harshness is a guide) taking no account of the loudness of the music, etc. When the receiver dial is rotated slowly over the station the effect noticed should be the same as with the crystal out except for additional sharpness and loss of high frequencies.

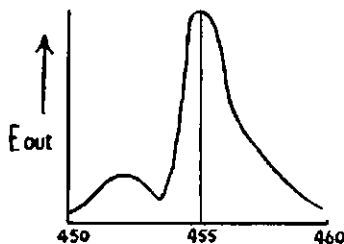


Fig. 11A.

On either side of the correct position when T2 is correctly aligned the tone will be low and drummy as the dial is rotated over the station and a distinct hollowness due to the crystal filter cutting the sideband, will appear on either side of the station.

Adjustment of T2 is made whilst rocking the dial until any asymmetry in the received signal disappears.

2. If a stable oscillator—unmodulated—is available: Place the generator exactly on 455 Kc. (crystal frequency) and connect output to the converter grid circuit in the usual way, or if using a BC221 a wire laid on the bench will give enough pick up.

Adjust T2 for maximum signal in the "S" meter.

Place oscillator on 450 Kc. and note "S" meter value.

Place oscillator on 460 Kc. and note "S" meter reading, which should equal that for 450 Kc.

Adjust T2 until symmetry is reached.

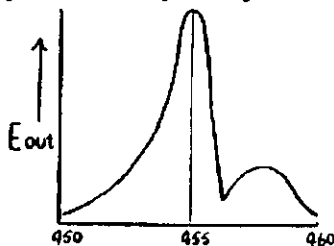


Fig. 11B.

B.f.o. Adjustment should be undertaken at the same time. Switch crystal in and with generator on 455 Kc. adjust the slug so that with the b.f.o. control on centre, zero beat is obtained. The slug can be reached through a hole in the b.f.o. shield under the chassis.

To check whether the phasing control is operating and the "notching" is occurring, place the signal generator on 453 Kc. approx., leaving the receiver as before and rotate the control anticlockwise then clockwise; there should be a distinct "plop" as the "notch" drops the signal out.

Alternatively, set the phasing control first on one side of centre and swing the oscillator from low to high side of 455 Kc. A sudden reduction in the signal will occur at frequencies above and below for the appropriate setting of the control (Figs. 11a, 11b).

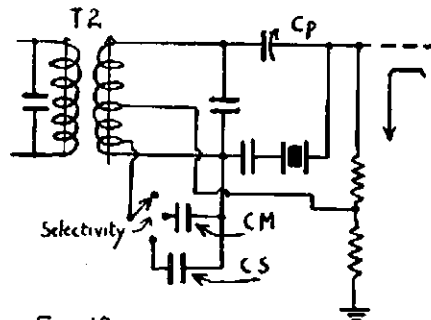


Fig. 12.

For the SX28

The SX28 circuit corresponds to Fig. 12 and the filter as already indicated lies between the first and second i.f. tubes. Basically the bridge circuit remains the same, but the selectivity variation is achieved in three steps by detuning the secondary of the input transformer T2 with trimmer type ceramic capacitors, Cm and Cs.

Set up the signal generator or oscillator on crystal frequency as for the AR7 with selectivity in "broad" and "phasing" at zero. (The i.f. stages are already aligned.)

Vary the frequency of the signal generator over a small range (± 5 Kc.) and adjust the top screw of T2 until the output (shown by "S" meter) goes through a maximum, dips down, and starts going up again.

Adjust the phasing control for maximum selectivity and then back off the top screw on T2 until the output reaches a minimum value between the two maxima first noted.

Switch on the b.f.o., which would have previously been aligned to 455 Kc., and a "swishing" note, in contrast to the usual sharp crystal tone, will be apparent when the correct adjustment has been reached.

* 73 Portrush Rd., Toorak Gardens, South Aus.
3 Only proceed thuswise if it is pretty certain that some tampering may have taken place—inspect the screws on the holder for a check.

Now, switch to selectivity "sharp" and adjust C30, the trimmer nearest the front panel, for maximum output whilst varying the signal generator frequency. Two points of maximum output will be noted corresponding to two adjustments of C30. Either one of these points may be used at which to leave C30. A sharply peaked tone will result at the correct adjustment.

For "medium xtal" adjust C29 until the output is mid-way between the broad and sharp positions.

Having got this far, it will probably be necessary to align more accurately the i.f. channel. So set the signal generator to the crystal frequency, the b.f.o. to approximately 1 Kc. tone, and the selectivity to "sharp i.f." and carefully re-align the i.f. transformers for maximum output.

Now, you will have noted, that the signal generator frequency has to be "wobbled" either side of the crystal frequency in order to obtain the correct symmetry of the filter circuits. Therefore the quickest and best way to align any i.f. channel and crystal filter is to use a frequency modulated oscillator and a c.r.o. For those who have access to these, proceed with the following:

Alignment Procedure II. (Using wobulator and c.r.o.)

For AR7

Connect the output of the wobulator across the converter grid circuit via a series capacitor and a 100K resistor to ground. The c.r.o. leads from the "Y" amplifier should connect to the diode plate load of the 6G8G as near as possible to the diode plate.

Switch to crystal in and note pattern on the screen whilst adjusting the phasing control and the selectivity control. Since the wobulator deviation frequency is synchronised to the c.r.o. sweep, the pattern should remain stationary and somewhere for the phasing control should give a symmetrical selectivity pattern.

If the i.f. channel is not correctly aligned to the crystal frequency two curves will appear as in Fig. 12a.

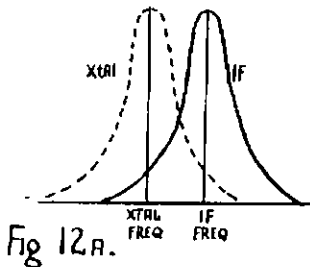


Fig 12A.

Leave the phasing control in this position. Align the i.f. transformers T1A, T2A, T2B (but do not touch L5A, the output of the filter) until the two patterns coincide. The i.f. pattern should move towards the crystal pattern.

When coincidence occurs adjust the selectivity control to maximum and the skirts of the curve should close in, still leaving the curve symmetrical. Return the selectivity control to broad position.

Now the aim is to adjust the output of the filter so that the phasing control when set at centre gives a symmetrical pattern with maximum amplitude. This

will mean adjusting L5 and the phasing control step by step until the rejection notch moves from one side to the other side of the peak as the phasing condenser is moved either side of centre.

The correct adjustment of L5A and phasing control should result in a "rejection notch" which does not alter its position horizontally as the selectivity control is adjusted. The curve should just "flatten out" at the peak and the notch. (Fig. 12b.)

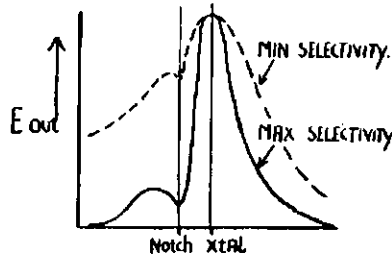


Fig 12b.

For best adjustments, use as small an output as possible from the wobulator resulting in a good pattern trace. Adjust the deviation accordingly as the alignment proceeds to enable good visual checking. And finally, keep the sweep frequency as low as possible for a distortionless trace, e.g. 16 c.p.s. to 50 c.p.s.

Remember, Rome was not built in a day, and be prepared to spend many hours of careful, patient effort, because in the end it really makes that AR7 or SX28 (and any other receiver) a communications receiver that can eliminate unwanted signals as close as 250 c.p.s. to the wanted one.

A bibliography will be attached hereunder giving all the books and articles to which reference has been made. Also the latter part of this article could not have been written without the tuition gained from Frank Wreford (ex-VK5DW, now residing in VK6). No text book that has been available since this article was contemplated has the complete answer to the problem and it is hoped that this article has now collated much technical data for those who can make use of it.

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APPENDIX

Single Signal Operation

A good crystal filter is of no advantage unless the operator knows how to use it and one of the best tricks is known as "Single Signal Reception." This applies particularly to c.w. reception but with limitations can be used for phone.

Pick a good solid c.w. signal, preferably a commercial station because it is likely to stay on long enough for the adjustment to be completed.

Turn on the b.f.o. and adjust control to the desired beat note. Place the selectivity control on the sharpest position and phasing control on zero.

Time across the signal and note that there are two amplitudes appearing, one strong and one weak. Leave the tuning on the weaker of these two and turn the phasing control until this weaker signal is reduced to a minimum.

Finally tune to the stronger of the two amplitudes and adjust the b.f.o. control to a good operating tone.

Having made this adjustment for single signal reception of one signal no further adjustment is required as further signals are searched for. Of course the phasing control should not be altered.

Single Sideband Generator

The same principles which have been outlined in this article apply to the removal of the carrier and the unwanted sideband. Using crystal filters in series and shunt connections, the series resonance can be used to remove the carrier and pass the sideband, whilst the antiresonance frequency, due to the capacitance of the holder of the same two crystals, can block the carrier from being passed and the sideband from being shunted.

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AP2—Pakistan	(21, 22)	HA—Hungary	(15)	PJ2M—Sint Maarten Is. ..	(9)	VR1—Brit. Phoenix Is. ..	(31)
BV (C3)—Formosa	(24)	HB—Switzerland	(14)	PK1, 2, 3—Java	(28)	VR1—Gilbert, Ellis &	
C (unofficial)—China (23, 24)		HC—Ecuador	(10)	PK4—Sumatra	(28)	Ocean Is.	(31)
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CE9, KC4, LU, VK0, VP8,		HI—Dominican Republic ..	(8)	PX—Andorra	(14)	VR4—Solomon Is.	(28)
ZL5—Antarctica (13, 29, 30)		HK—Colombia	(9)	PY—Brazil	(11)	VR5—Tonga Is.	(32)
CE0—Easter Island	(12)	HK0—San Andres &		PZ1—Neth. Guiana	(9)	VR6—Pitcairn Is.	(32)
CM, CO—Cuba	(8)	Providencia	(9)	SL, SM—Sweden	(14)	VS1—Singapore	(28)
CN2—Tangier Zone	(33)	HL—Korea	(25)	SP—Poland	(15)	VS2—Malaya	(28)
CN8—French Morocco	(33)	HP—Panama	(7)	ST2—Sudan	(34)	VS4—Sarawak	(28)
CP—Bolivia	(10)	HR—Honduras	(7)	SU—Egypt	(34)	VS5—Brunei	(28)
CR4—Cape Verde Is.	(35)	HS—Thailand	(26)	SV—Crete	(20)	VS6—Hong Kong	(24)
CR5—Port. Guinea	(35)	HV—Vatican City	(15)	SV—Greece	(20)	VS9—Aden & Socotra ..	(21)
CR5—Principe, Sao		HZ—Saudi Arabia	(21)	SV—Dodecanese Is.	(20)	VS9—Maldives Is.	(22)
Thome	(36)	II, IT1—Italy	(15)	TA—Turkey	(20)	VS9—Sultanate of Oman ..	(21)
CR6—Angola	(36)	I5—Italian Somaliland ..	(37)	TF—Iceland	(40)	VU2—India	(22)
CR7—Mozambique	(37)	IS1—Sardinia	(15)	TG—Guatemala	(7)	VU4—Laccadive Is.	(22)
CR8—Goa (Port. India) ..	(22)	JA, KA—Japan	(25)	TI—Costa Rica	(7)	VU5—Andaman & Nicobar	
CR9—Macau	(24)	JT1—Mongolia	(23)	TI9—Cocos Is.	(7)	Is.	(26)
CR10—Port. Timor	(28)	JY—Jordan	(20)	UA1, 2, 3, 4, 6—European		W—See K.	
CT1—Portugal	(14)	JZ0—Neth. New Guinea ..	(28)	R.S.F.S.R.	(15, 16, 17)	XE, XF—Mexico	(6)
CT2—Azores	(14)	K, W—United States of		UA1—Franz Josef Land ..	(40)	XV—Viet Nam	(26)
CT3—Madeira Is.	(33)	America	(3, 4, 5)	UA9, 0—Asiatic R.S.F.S.R.		XW8—Laos	(26)
CX—Uruguay	(13)	KA—See JA.		UA9, 0—Asiatic R.S.F.S.R.		XZ2—Burma	(26)
DJ, DL, DM—Germany		KA0, KG6I—Bonin and		UA0—Wrangel Is.	(19)	YA—Afghanistan	(21)
(14, 15)		Volcano Is.	(27)	UB5—Ukraine	(16)	YI—Iraq	(21)
DU—Phillipine Is.	(27)	KB6—Baker, Howland &		UC2—White Russian		YJ—See FU8.	
EA—Spain	(14)	Amer. Phoenix Is.	(31)	S.S.R.	(16)	YK—Syria	(20)
EA6—Balearic Is.	(14)	KC4—See CE9.		UD6—Azerbaijan	(21)	YN—Nicaragua	(7)
EA8—Canary Is.	(33)	KC4—Navassa Is.	(8)	UF6—Georgia	(21)	YO—Roumania	(20)
EA9—Ifni	(33)	KC6—East Caroline Is. ..	(27)	UG6—Armenia	(21)	YS—Salvador	(7)
EA9—Rio de Oro	(33)	KC6—West Caroline Is. ..	(27)	UH6—Turkoman	(17)	YU—Yugoslavia	(15)
EA9—Spanish Morocco ..	(33)	KG1—See OX.		UI8—Uzbek	(17)	YV—Venezuela	(9)
EA0—Spanish Guinea	(35)	KG4—Guantanamo Bay ..	(8)	UJ8—Tadzhik	(17)	ZA—Albania	(15)
EI—Eire	(14)	KG6—Mariana Is.	(27)	UL7—Kazakh	(17)	ZB1—Malta	(15)
EL—Liberia	(35)	KG6I—See KA0.		UM8—Kirghiz	(17)	ZB2—Gibraltar	(14)
EQ—Iran	(21)	KH6—Hawaiian Is.	(31)	UN1—Karelo-Finnish ..	(16)	ZC3—Christmas Is.	(29)
ET2—Eritrea	(37)	KJ6—Johnson Is.	(31)	UO5—Moldavia	(16)	ZC4—Cyprus	(20)
ET3—Ethiopia	(37)	KL7—Alaska	(1)	UP2—Lithuania	(15)	ZC5—Br. North Borneo ..	(28)
F—France	(14)	KM6—Midway Is.	(31)	UQ2—Latvia	(15)	ZC6—Palestine	(20)
FA—Algeria	(33)	KP4—Puerto Rico	(8)	UR2—Estonia	(15)	ZD1—Sierra Leone	(35)
FB8—Amsterdam & St.		KP6—Palmyra Group &		VE, VO—Canada ..	(2, 3, 4, 5)	ZD2—Nigeria	(35, 36)
Paul Is.	(39)	Jarvis Is.	(31)	VK—Australia	(29, 30)	ZD3—Gambia	(35)
FB8—Comoro Is.	(39)	KR6—Ryukyu Is.	(25)	VK0—See CE9.		ZD6—Nyasaland	(37)
FB8—Kerguelen Is.	(39)	KS4—Swan Is.	(7)	VK0—Heard Is.	(39)	ZD7—St. Helena	(36)
FB8—Madagascar	(39)	KS6—American Samoa ..	(32)	VK0—Macquarie Is.	(30)	ZD8—Ascension Is.	(36)
FB8—Tromelin Is.	(39)	KV4—Virgin Is.	(8)	VK9—Cocos Is.	(29)	ZD9—Tristan da Cunha	
FC (unofficial)—Corsica ..	(15)	KW6—Wake Is.	(31)	VK9—Nauru Is.	(28)	& Gough Is.	(38)
FD—Togo	(35)	KX6—Marshall Is.	(31)	VK9—Norfolk Is.	(32)	ZE—Rhodesia South	(36)
FE8—Fr. Cameroons	(36)	KZ5—Canal Zone	(7)	VK9—Papua Terr.	(28)	ZK1—Cook Is.	(32)
FF8—Fr. West Africa	(35)	LA—Jan Mayen	(40)	VK9—Ter. of New Guin. ..	(28)	ZK2—Niue	(32)
FG7—Guadeloupe	(8)	LA—Norway	(14)	VO—See VE.		ZL—Kermadec Is.	(32)
FK8—New Caledonia	(32)	LA—Svalbard	(40)	VP1—Brit. Honduras	(7)	ZL—New Zealand	(32)
FL8—Fr. Somaliland	(37)	LU—Argentina	(13)	VP2—Leeward Is.	(8)	ZL5—See CE9.	
FM7—Martinique	(8)	LU—Z—See CE9, VP8.		VP2—Windward Is.	(8, 9)	ZM6—British Samoa	(32)
FO8—Clipperton Is.	(7)	LX—Luxembourg	(14)	VP3—Brit. Guiana	(9)	ZM7—Tokelau (Union)	
FO8—Fr. Oceania	(32)	LZ—Bulgaria	(20)	VP4—Trinidad & Tobago ..		Is.	(31)
FP8—St. Pierre &		M1—San Marino	(15)	VP5—Cayman Is.	(8)	ZP—Paraguay	(11)
Miquelon Is.	(5)	MP4—Bahrein Is.	(21)	VP5—Jamaica	(8)	ZS1, 2, 4, 5, 6—Union of	
FQ8—Fr. Equat. Africa ..	(36)	MP4—Qatar	(21)	VP5—Turks & Caicos		South Africa	(38)
FR7—Reunion Is.	(39)	MP4—Trucial Oman	(21)	Is.	(8)	ZS2—Prince Edward &	
FS7—Saint Martin Is.	(8)	OA—Peru	(10)	VP6—Barbados	(8)	Marion Is.	(38)
FU8, YJ—New Hebrides		OD5—Lebanon	(20)	VP7—Bahamas Is.	(8)	ZS3—Sth. West Africa	(38)
Is.	(32)	OE—Austria	(15)	VP8—See CE9.		ZS7—Swaziland	(38)
FW8—Wallis & Futuna		OH—Finland	(15)	VP8—Falkland Is.	(13)	ZS8—Basutoland	(38)
Is.	(32)	OK—Czechoslovakia	(15)	VP8—South Georgia Is. ..	(13)	ZS9—Bechuanaland	(38)
FY7—Fr. Guiana & Inini ..	(9)	ON4—Belgium	(14)	VP8—South Orkney Is. ..	(13)	3A—Monaco	(14)
G—England	(14)	OQ5, 0—Belgian Congo ..	(36)	VP8—Sth. Sandwich Is. ..	(13)	3V8—Tunisia	(33)
GC—Channel Is.	(14)	OX, KG1—Greenland	(40)	VP8—Sth. Shetland Is. ..	(13)	3W8—Cambodia	(26)
GD—Isle of Man	(14)	OY—Faroes	(14)	VP9—Bermuda Is.	(5)	4S7—Ceylon	(22)
				VQ1—Zanzibar Is.	(37)	4W1—Yemen	(21)
				VQ2—Nth. Rhodesia	(36)	4X4—Israel	(20)
				VQ3—Tanganyika Ter.	(37)	5A—Libya	(34)
				VQ4—Kenya	(37)	9G—Ghana	(35)
				VQ5—Uganda	(37)	9K—Wukait	(21)
				VQ6—Br. Somaliland	(37)	Aldabra Is.	(39)
						Nepal	(22)

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Polarised Relays, Their Use in an Automatic Keyer

BY D. G. HAWTHORNE,* VK3ZCD

POLARISED relays are uncommon in Amateur apparatus, being comparatively expensive, and as they are not described in radio text books, surrounded by veil of mystery. This causes them to be dismissed as a specialised component, having no general use in Amateur equipment. It is hoped that this article will show that polarised relays are, in fact, simple devices of great versatility, having several advantages over the solenoid type relay.

Most readers have experienced the attractive force of a horse-shoe magnet on a nail or similar ferromagnetic material; however, if the nail was placed symmetrically between the poles, the net attractive force is very small, but, if it was moved nearer one pole, it was quickly drawn towards the magnet. It is also well known that unlike magnetic poles attract each other, whereas like poles repel, and that a current flowing in a coil produces a magnetic field passing axially through the coil, and having direction such that a clockwise current flow causes the "north-pole" to face the viewer. These three facts are the basis for the operation of polarised relays.

A simplified diagram of a polarised relay is given in Fig. 1. A permalloy armature, Am, is placed symmetrically between the poles of a horse-shoe magnet, being held in the central position by a spring suspension system, Sp. This spring resists any tendency for the armature to be drawn towards the magnet. Adjustable pole-pieces, P, enable the magnetic bias to be altered to suit the particular requirements. A fixed coil, C, is wound around the armature, which is free to move in an air gap in the centre of the coil. Movement of the armature can close the contacts Cm and Cs.

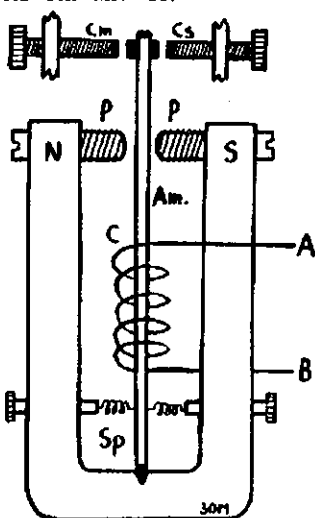


Fig. 1.

• In an article titled "An Automatic Morse Keyer," "A.R." Dec. 1958, the author stated reasons for use of a thermionic keying circuit instead of a simple relay circuit. "Ham" Radio Suppliers has recently obtained supplies of polarised relays. The low cost prompted the author to buy a couple to experiment with the possibility of their use in the keyer. These experiments have been entirely successful, as was to be expected, polarised relays being used for this purpose commercially.

The accompanying article contains a description of the modification to the original circuit, together with a description of the operation of polarised relays.

A current flowing through the coil will cause the armature to behave like a temporary magnet, the polarity depending on the direction of current flow. Consider a current flowing from A to B; the contact end of the armature behaves like the "north-pole" of a magnet. This will result in a net attractive force towards the "south-pole" of the horse-shoe magnet. If the current is large enough, this attractive force will overcome the restraint of the armature spring, and the contacts Cs will be closed.

On interruption of the current, the low retentivity of permalloy causes the residual magnetism in the armature to decay rapidly, the spring then returning the armature to the central position. It will be seen that a current flowing from B to A will cause the armature to move towards the contacts Cm. Thus polarised relays can distinguish positive and negative current flow.

Polarised relays are inherently more sensitive to small currents than the normal solenoid type. The attractive force on the armature of a polarised relay is directly proportional to the current magnitude, whereas the force on a solenoid relay armature is proportional to the square of the current magnitude. The standard 3000-type relay, well known in disposals equipment, requires 120 ampere-turns to operate a single set of change-over contacts; this is equivalent to a power requirement of approximately 60 milliwatts. A typical polarised relay requires only 2 ampere-turns to operate similar contacts; this is a power requirement of approximately 60 microwatts. The 299-type relay requires a current of 80 microamps. to operate, a power requirement of less than 5 microwatts. The sensitivity can be varied by adjusting the pole-pieces. By moving both equally towards the armature, the sensitivity is increased, the limit being when the attractive force resulting from a small displacement of the armature, over-

comes the restraining force of the spring. When adjusted for maximum sensitivity, the relay is very easily affected by mechanical shock and stray magnetic fields.

When the pole-pieces are closer than the position for maximum sensitivity, the spring has no control on the armature, which now behaves like the nail and magnet example mentioned earlier. However, if a current is passed through the coil in the right direction, the induced magnetism in the armature can cause the mutual repulsion of like poles to force the armature to the other pole-piece, where it remains after the current ceases, and until an opposite current can reverse the motion. The relay now behaves like a double-throw switch, with maximum sensitivity when the pole-pieces are at the critical position mentioned above.

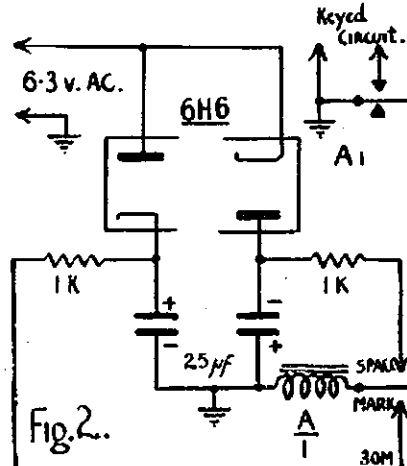


Fig. 2.

By moving one pole-piece closer to the armature than the other, the armature can be made to rest against the contacts on the nearer side. A current of suitable polarity flowing through the coil can cause the armature to swing to the opposite contacts for the duration of the current-flow. This is analogous to the normal change-over relay operation.

The relays used by the writer are of American manufacture. They have two coils, one of 2,500 ohms used for the signal, and one of 200 ohms used for biasing for use in repeater circuits. The operating current minimum is between 200 and 100 microamps., depending on the care in adjustment, and the mechanical stability of the particular relay. 500 microamps. sensitivity is easily obtained, and the relay is now not affected by stray influences. The relay is enclosed in a case of ferrous alloy to lessen influence of stray fields; the adjusting screws, reached by a lid in the top of the relay case, must be altered with the relay in the case, and with non-magnetic tools (the

(Continued on Page 14)

* Flat 3, 11 Leopold St., South Yarra, Vic.

Jointing of Aluminium & Aluminium Alloys

BY R. NEAL,* VK3ZAN

• The author of this article kindly submitted sample welds to cover this article. One sample, consisting of two pieces of $\frac{3}{8}$ " diam. x 18 gauge tube, was welded at right angles. We submitted this sample to test by applying a gradually increasing load. Failure occurred under a load of 210 lbs. There was virtually no plastic deformation of the tubing, indicating the strength of the weld to be far below that of the aluminium tubing. If we can take this particular sample as typical of results, it would appear advisable to take 100 lbs. as a safe working load. For beam construction it appears to meet a long felt want for ensuring good electrical joints. —Technical Editor.

WE have all been confronted some time or other with the problem of jointing aluminium or aluminium alloys, be it in tube or sheet form. Most of us have also probably tried some of the alloys on the market that are supposedly excellent for soldering aluminium. In the experience of the author, none of these solders will give a satisfactory joint, however by applying a little more heat, such as from a blow lamp or gas flame, a very satisfactory joint can be made by using diecast welding rod without the use of a flux.

If you have not used this previously, you will be surprised by the ease at which this material runs onto a clean heated aluminium surface. You will also be surprised at the strength of the joint.

The method is to first of all clean the parts to be jointed with a file or sand paper. Then the parts must be "tinned"—heat them over a clean flame until when the end of the diecast welding rod is applied to the part it melts and you will notice how freely the material from the rod adheres to the parts to be jointed.

While the heating of the parts to be jointed is in progress, keep testing the temperature by rubbing the end of the diecast rod on the part, but do not leave the rod in the flame any longer than necessary, otherwise it will become soft and brittle and will break off when next applied to the part.

After "tinning", hold the two parts to be jointed together over the flame and keep testing the temperature with the rod until the diecast flows into the joint.

It will be wise to direct the flame away from the joint while the rod is being applied, otherwise trouble will be experienced with the rod becoming too hot.

Make sure that both parts to be jointed are hot enough by melting the rod onto both parts.

This method can be used for inserting sections in a chassis—a neat fillet can be made with the diecast rod, or joining elements to booms of antennae

or making electrical connections. By forming a fillet between two round sections to be jointed at right angles an extremely strong joint will result, in fact as strong as the base metal.

Several joints of the above nature made by the author on $7/16$ " diam. 18 s.w.g. tubing when tested to destruction, broke a piece out of one of the tubes rather than break at the applied metal.

Ordinary 50-50 soft solder can be applied over the diecast metal in the normal manner, thus joints between copper and aluminium can be made satisfactorily by first applying the diecast to the aluminium and then using

normal soldering processes, however if two dissimilar metals such as these are joined care must be taken to prevent corrosion at the joint.

Corrosion tests in a humidity cabinet on aluminium jointed with diecast metal showed only slight corrosion of the applied metal, but the aluminium was not effected. It is not considered necessary, therefore, that joints, even on antennae exposed to the weather, need be protected in service.

Diecast welding rods are available from suppliers of gas welding equipment in sizes of $3/16$ " diameter by 12 " long at a cost of approximately 7d. per stick.

Try it; if you are not completely satisfied with the results, the author will only be too pleased to answer any queries.

MOUNTING BRACKET FOR MOBILE ANTENNA

With the growing interest in portable and mobile operation, and the adaption of ex-disposals equipment for this purpose, the following method of attaching a five inch diameter flexible (rubber) antenna mount to a car may be of interest to Amateurs.

The attached sketch will speak for itself. The measurements shown will fit the rear bumper bar mounting bolt of a Morris Oxford (1953 model).

First, the mount itself was obtained (from disposals sources) at a cost of 12/6.

A local engineering firm constructed the supporting bracket and fixed it on the car for the princely sum of 13/6. The material used comprised: One 6" length of $\frac{1}{2}$ " mild steel, $1\frac{1}{2}$ " wide; one $1\frac{1}{2}$ " length of $\frac{1}{4}$ " mild steel, 1 " wide; one 5" diameter plate, $\frac{1}{4}$ " thick.

First the two pieces of steel were welded as indicated, then the plate welded on top. It had been found necessary to trim the plate and the base of the antenna mount to fit it in. This meant only five mounting holes remained out of the original six, but the job is quite satisfactory. (Used $\frac{1}{4}$ " metal thread screws and nuts.)

I had a hole bored in the plate to facilitate leading a co-ax cable to the bottom of the mount and a grommet fitted to protect the cable.

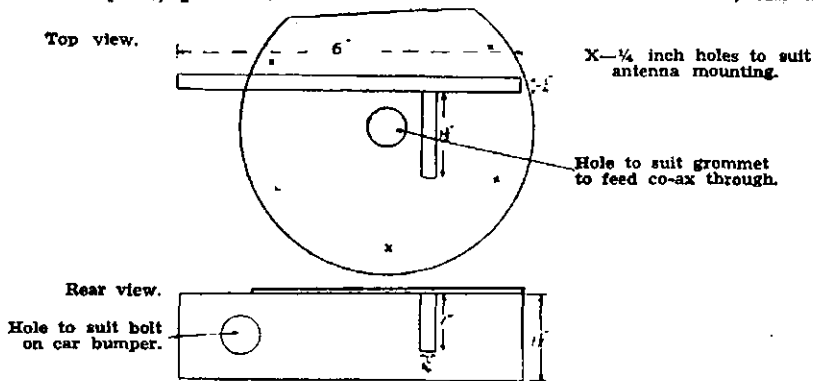
The job is quite robust and inconspicuous if the antenna is not standing.

I suggest the steel work be painted to match the car prior to mounting.

One bolt holds the bracket to the car and it is supported by the bumper mounting bracket.

No doubt this idea could be modified to suit other vehicles with little difficulty and certainly it would not be a costly job for any vehicle.

—T. Laidler, VK5TL.



Mounting bracket to carry flexible antenna mounting on rear bumper of car.

AMENDMENTS TO 1958 R.D. CONTEST RESULTS

In the Listeners' Section, G. R. Morris (VK3) was shown with a total of 189 points. This was only his 80 mx score. His correct total is 1074 points. The amended Award Winners for VK3 now read:—

VK3—G. R. Morris	1074
A. C. Stebbing	815
C. T. Taylor	793

Erratum.—Under the heading of Call Area Awards, the sub-headings of "Open" and "C.w." should be transposed.

AMATEUR TELEVISION

Amateur Television enthusiasts may be interested to know that an excellent little magazine called "CQ-TV" is published by the British Amateur Television Club. Membership to this club is 10/- (sterling) per annum, payable to the new Editor, J. E. Tanner, of 16 Norfolk Drive, Chelmsford, Essex, England.

In a letter to "Amateur Radio," John Tanner mentioned that he enjoyed following VK6EC/T's series of t.v. articles in "A.R."

* 11 Xavier Street, North Essendon, Vic.

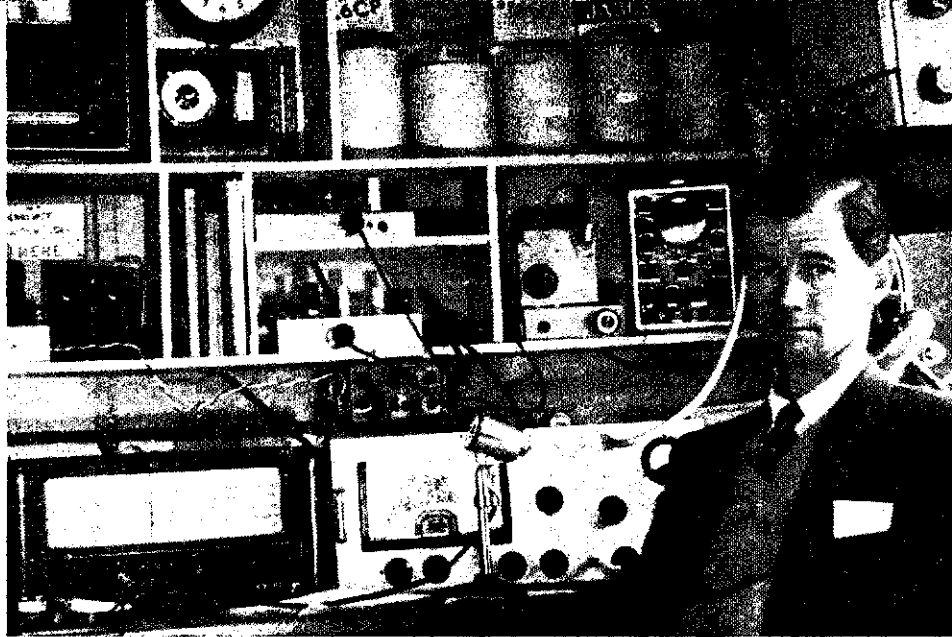
MEET THE OTHER AMATEUR AND HIS STATION

BOB ELMS* VK6BE

Bob Elms was born in Western Australia in 1923. First interest in Radio was acquired during the war, when he served for several years in a signal unit. This was followed up after the war, but Radio as a hobby was restricted to broadcast set and audio until the A.O.C.P. was passed in January 1955.

Main interest is centred on the v.h.f. bands, particularly 50 Mc. Other bands worked at 80, 40, 20, 15, 10 and 2 metres. Gear for this latter band is being re-built. DX stands at about 75 countries at present. 50 Mc. DX is VK2, 4, 5, ZL, ZS2, JA1 to 0 (about 250 QSOs with 140 different JA stations).

Seen in the photo from top left to right are valve and circuit tester, clock, barometer, thermometer, tins of parts, five-band aerial tuner (above head). Below these are power supply for converters, text books, 144 and 50 meg. converters with switching device below, preselector (VK5AX type, but using 6AG5 and 6C4), c.r.o. and tape recorder (behind head).



On the bench may be seen Eddystone "750" and rig consisting of Geloso v.f.o., VT501 buffer, HK257B final running 120 watts.

In the extreme bottom left hand corner can be seen the corner of a cabinet containing EL34 class B modulator and tone oscillator. Above (out of photo) are 6 and 2 metre transmitters each running 120 watts to HK257B, and also filament and relay supplies.

All high voltage supplies are built into the wall cavities behind the door

of the shack, high voltage leads being run through conduit to the transmitters. A control panel distributes power to the transmitter in use.

The antenna system consists of yagis on 2 and 6 metres (four over four) atop a forty foot steel tower, and a dipole for the other bands.

Occupation is a school teacher (primary level).

Other hobbies are music (choir and organ chiefly) and cricket.

*29 Central Road, Kalamunda, West. Aust.

I.T.U. FUND DONATIONS

Donations towards the fund to send an officially Government-recognised delegate to Geneva next year are still being received, but the tempo has slowed down during the last couple of months. It now lies largely with the Divisions by the way of publicity over official W.I.A. broadcasts to continue to enliven interest and subsequent subscriptions. Our nominated delegate has been made known and all members and others should give their valued support to the Fund to ensure that he is no less favorably placed in status and financial support than other delegates who attend this International Conference of utmost importance to every Amateur.

Your donations should be sent to—
Federal Secretary
Box 2611W, G.P.O.,
Melbourne, C.I.

The following are the list of additional donations to the 7th December:—

- 225/0/0: South Australian Division, VK5WI.
- 25/0/0: N.S.W. Amateur Radio Co-op. Society.
- 22/2/0: C. C. Quin, VK2AWQ; K. H. Meallin, VK2NJ; G. C. Ramsay, VK5GD.
- 21/1/0: R. G. Graf, VK3CT; J. W. Jackson, VK4CN; G. N. Harley, VK4GH.
- 21/0/0: R. H. Yulle, VK2HU; W. P. Nelson, VK2KH; VK2 Anonymous, Caringbah; R. S. Mackie, VK3AVA; E. H. Jenkins, VK3QK; A. W. Adams, VK3VJ; J. G. Halyday, VK4HZ; H. R. Hodgson, VK5AP; F. K. Tapley, VK5FJ; H. Robinson, VK5EN; J. P. Sullivan, VK6JK; G. P. Lucas, VK5LL; A. F. Leal, VK6LQ; R. R. Monfries, VK5RE; E. Brandon, VK5EG; G. Cranby, VK7GC; D. Jose, Nauru, VK9DJ; K. A. Hancock, Tas.
- Under 21: E. H. Zahmel, VK4MU (10/6); J. Jeffreys, N.S.W. (10/-); G. Wells, Tas. (10/-).

The progressive total receipts to 7th December are 21,866/18/6.

USING BC459 WITH VHF OVERTONE OSCILLATOR

Although using the BC459 (7 to 9 Mc.) as the v.f.o. for a 50 Mc. transmitter may be old stuff to many v.h.f. men, it is possible that some newcomers to the World Above 50 Mc. may not realise how easy it is to couple one of these Command transmitters to the ever popular overtone crystal oscillator.

Fig. 1 shows the method of coupling a BC459 to the grid of a triode overtone oscillator. The oscillator portion of the circuit (components to the right of the dashed line) is identical to that used

One interesting feature of the arrangement is that the overtone circuit takes on an entirely new look merely by replacing the crystal with the v.f.o. connections. The instant that the crystal is removed and a ground connection provided at the crystal socket, the circuit becomes that of a frequency multiplier. In this case the stage becomes a frequency tripler using 8 Mc. excitation for 25 Mc. output. Incidentally, the stages that follow the 12AT7 oscillator are also of Handbook design.

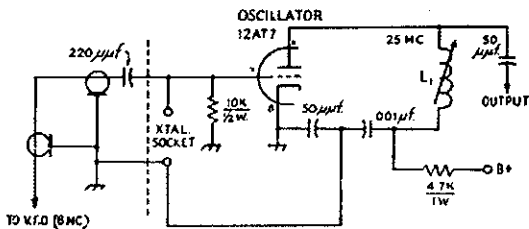


Fig. 1.—Circuit diagram of a v.h.f. overtone oscillator driven by a Command transmitter. W9DRY uses a BC459 (7 to 9 Mc.) as the v.f.o. and drives a 50 Mc. frequency multiplier with 25 Mc. excitation obtained from the 12AT7. L1 is 24 turns No. 30 gauge enamel close-wound on a 3/8 inch slug-tuned former.

in simple transmitters described in the V.h.f. Transmitters chapter of recent editions of the Handbook. To the left of the dashed line, we see the co-axial line from the v.f.o., a 220 pF. coupling capacitor and the connections to the transmitter crystal socket. All connections to the transmitter end of the co-axial line should be as short as possible.

The required v.f.o. range for covering the entire 50 Mc. band is 8.333 to 9 Mc. Stable output throughout this range is obtained here at W9DRY by operating with only 105 volts applied to the oscillator and both the plates and screens of the amplifier tubes of a BC459.

—R. L. Sherwood, W9DRY, "QST" Dec. '57.

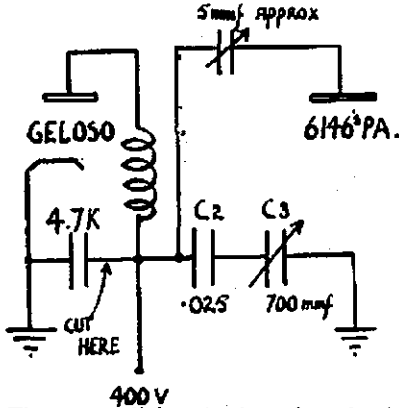
HINTS AND KINKS

NEUTRALISING THE STAGE AFTER THE GELOSO V.F.O.

This bridge circuit is suitable for the task. It has the advantage of easy adjustment to take care of

$$\frac{C1}{C3} = \frac{\text{Tube grid-plate capacit. (Cgp)}}{\text{Tube input capacitance (Cin)}}$$

Now to arrange this bridge it is necessary to remove the by-pass to earth capacitor from the tank coils in the Geloso unit as this is many times too big.



The neutralising is done by altering the value of C3 and this control is brought out to the front panel and the positions for each frequency can be marked on the panel. C3 is a receiver-type variable. C2 is to protect the h.t. in case the plates of C3 short.

The high inductance of the slug-tuned Geloso coils avoids the danger of C3 forming an unwanted series-tuned resonance circuit.

—Arnold Holst, VK3OH.

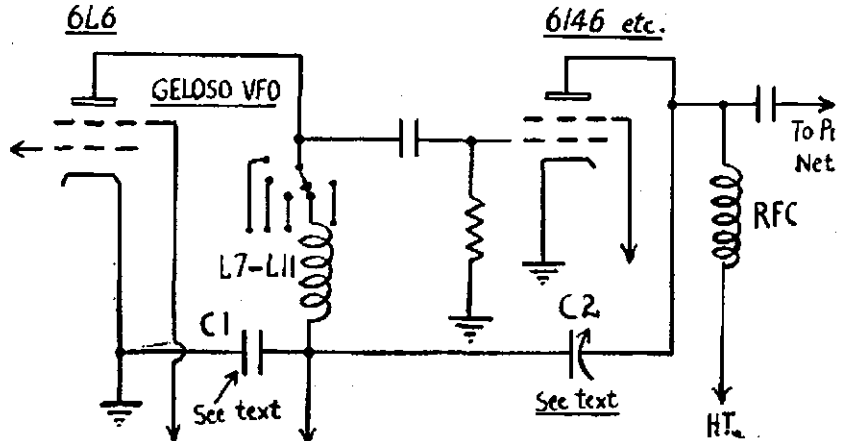
NEUTRALISATION OF SINGLE-ENDED FINALS

Many Hams have found it a difficult job to stabilise their p.a. stages using the new 6146 tubes. This article deals with a transmitter using a Geloso v.f.o. as the driver stage, but the procedure can be applied to any transmitter using a similar circuit design. Instability in

the p.a. shows up when tuning the final tank condenser. Under tuning conditions the final grid current should remain quite steady, any variation indicating that regeneration is taking place.

reduction of the 5000 pF. condenser to 500 pF. has no effect on the output of the Geloso, however the coils will need to be re-peaked for maximum grid current on the final.

—Ron Fisher, VE3OM.



In order to neutralise the final stage it is necessary to take a small portion of the output power and feed it back to the p.a. grid 180° out of phase. When using the Geloso as a driver, the obvious place to apply this is at the bottom or B+ end of the output coils (L7 to L11). Now the feedback power depends on two things, firstly, of course, the size of the neutralising condenser C2, and secondly the size of the r.f. by-pass C1. The larger this condenser is, the greater the feedback power needed.

To work out the values needed for both the by-pass and neutralising condensers, we can use a formula taken from the A.R.R.L. Handbook which gives the following:

$$C2 = \frac{5000 Cgp}{Cgf}$$

In this formula C2 is the capacity of the neutralising condenser, 5000 is the size of the by-pass condenser in the Geloso. Cgp is the grid-plate capacity of the p.a. tube or tubes, and Cgf is the grid-cathode capacity of the p.a. tube plus the output capacity of the 6L6 or 6V6 in the Geloso. Assuming the use of two 6146s in parallel and a 6L6 driver we have the following:

$$C2 = \frac{5000 \times 0.44}{(13.5 \times 2) + 12} = 55 \text{ pF. approx.}$$

Now obviously this is far too high in value for a neutralising condenser, so we have to reduce the capacity of the Geloso by-pass condenser until C2 becomes a reasonable size.

The size arrived at was 500 pF., a ten times reduction, which also gives a ten times reduction in the neutralising condenser and brings it out at 5.5 pF. which is a more practical size. This can be met with a small three-plate condenser with double spacing. One of the double-spaced trimmers from an AT5 or a No. 11 is ideal if cut down to three plates.

Neutralising procedure is to adjust C2 for least variation in grid current against final plate tuning at the highest frequency used. By the way, the

POLARISED RELAYS, THEIR USE IN AN AUTOMATIC KEYS

(Continued from Page 11)

writer uses a piece of heavy gauge copper wire). It is suitable for use as a high-speed keying relay, one now being used in a keying circuit for translating the signals from a Wheatstone tape transmission into Morse.

The circuit of the keyer is given in Fig. 2. The 6H6 is used as two opposed half-wave rectifiers, charging the capacitors to about 4 volts, more than sufficient to operate the relay. The resistors are used to limit the current flow caused when both brushes make contact, this occurring if the tape breaks or when the end is reached. The relay is adjusted for the bistable operating condition, a current of 500 microamps. being required to effect change-over.

The rest of the keyer is as described in an earlier article, the polarised relay replacing the Eccles-Jordan trigger in the original circuit. The relay circuit has the advantages of simplicity and ease of operation, being unaffected by variation in line-voltage and components. It can follow Morse at speeds up to 40 words per minute.

Many other uses for polarised relays in Amateur equipment could be listed, but the readers will see that the slightly greater cost of the relays is offset by their advantages in applications where discrimination between polarities is required, or where only small currents are available.

NATIONAL FIELD DAY CONTEST

The draft rules of this Contest having been ratified by Divisions, the rules will be as published in the September issue (p. 16) of "A.R."

It is hoped that the amended rules will entice more participants in this event. There are sections for h.f. and v.h.f. this time.

Remember the date: **Sunday, 25th January, 1959.** Have your portable equipment ready to enter this Contest.

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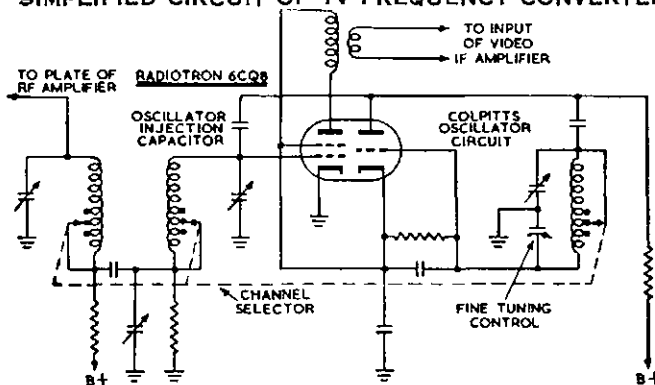
RADIOTRON TELEVISION VALVE SERIES

Frequency Converters & IF Amplifiers for TV Receivers

The desirable requirements for TV frequency converters and if amplifiers can be summarised as follows:—

- (a) transconductance should be high to provide as much gain as possible in the low-impedance, wide-band circuits used in a TV receiver.
- (b) the equivalent noise resistance should be low for good signal to noise ratio in the frequency converter stage.
- (c) there should be little feed-through from the oscillator to the rf stage to keep the oscillator radiation to a minimum.
- (d) the oscillator section of the converter should have good frequency stability, and possess characteristics which make oscillation of the right amplitude easy to obtain.
- (e) the application of a variable control voltage to the grid should not have any appreciable effect on the input impedance to the valve when used as an if amplifier.

SIMPLIFIED CIRCUIT OF TV FREQUENCY CONVERTER



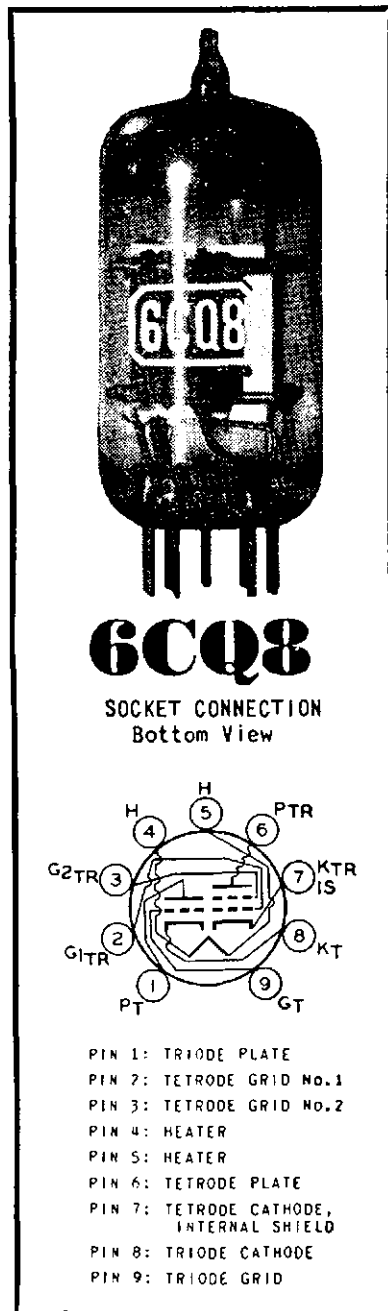
Theory predicts that the higher the transconductance (g_m) and the sharper the cutoff characteristic in the mixer section of a converter, the higher will be the conversion transconductance (g_c). The lower the bias required for plate current cutoff, the smaller the oscillator injection voltage that is required for maximum g_c and hence the lower is the oscillation radiation. Multigrad types of converters, i.e. those in which the signal and oscillator voltages are applied to separate grids, can be shown to be noisier and to have lower g_c at high frequencies than the types in which both voltages are applied to the one grid.

For the oscillator the most satisfactory operation is obtained by using a triode of high g_m and medium amplification factor (μ) in a circuit which will provide good frequency stability. The Colpitts type is often used for this purpose.

The series connection of the oscillator and mixer sections of the converter across the B+ supply offers the advantages of a reduction in current drain and more constant oscillator injection over the frequency range, due to the current-stabilising effect of this type of connection.

To maintain a desired relationship between transconductance and input impedance for valves used in the gain controlled stages of if amplifiers an unbypassed cathode resistor is commonly used; the use in if amplifiers of valves with internally-connected suppressors then presents difficulties in obtaining satisfactory stability. Valves featuring a tetrode construction avoid this complication.

The Radiotron 6CQ8, which has been especially designed to meet the requirements mentioned above, features a plate current characteristic with a sharp knee at relatively low plate voltages and mixer operation with good linearity in the frequency converter stage in the TV receiver. The tetrode construction of the 6CQ8 avoids the difficulties in stability outlined above, and together with the other characteristics of this valve, allows high performance to be obtained as a TV if amplifier. The tetrode section is also suitable for use as a sound if amplifier and agc amplifier. The triode is suitable for use as a sync. separator and af amplifier, and as an af output stage where only moderate output is required. The triode may also be used as a cathode follower driven by the tetrode section in the video amplifier stage.



AMALGAMATED WIRELESS VALVE CO. PTY. LTD.

47 YORK STREET, SYDNEY.

VC10.88

VHF

Frank P. O'Dwyer, VK3OF
190 Thomas Street,
Hampton, Vic.

Lance VK4ZAZ has struck oil. Following his comments on the year's activity and views on the band, here is a letter from Bob 6BE: "Having been fortunate enough to have six months L.S.L. during the first half of this year, I have been in the position of being able to sit looking for DX at all hours of the day and night. I have done just that. First DX break through to VK6 came on March 9 with a JA opening. Others followed at very frequent intervals (daily and twice daily for up to ten days at a stretch). These openings lasted till May, with two or three being experienced in June. July and August brought nothing although the VOSK was heard several times on 49.6 during this period.

"On Sept. 6 the game was on again with JAs coming in at very good strength. Openings since this date have been very frequent, daily for days at a stretch. During this period VK6s had their first taste of T.E. when two or three openings occurred, the first on record in this State. All other contacts appear to have occurred on F.2.

"Apart from JA working, VS2DQ has been contacted by several stations, VU2?? was heard by one, DUs have been heard working JAs, ZLs were worked for ten consecutive days from May 4 (F2 also), and one E. opening into VK3 was worked early in Oct. There have been several other interesting signals logged, but no identification has been possible. (If only ALL the v.h.f. stations would tune the band any time they make a transmission.)

"Now regarding 4ZAZ's comments re VOSK. There is one freq. that he has left out, 49.3 Mc., and I'm afraid this one spoils his theory as it sometimes broadcasts a different programme. Hardly possible for a parasitic. Theories here are that it is a repeater station intended for local consumption. No, we don't agree with 4ZAZ that it is a parasitic. Our arguments against are: (a) Its freq. is too stable. It has clung tenaciously to 49.6 since at least March 9 when it was first heard here. (b) It has been copied by at least two f.m. rx in VK6 and was good copy. Deviation appears to be 75 Kc. (c) It QSLs and I have its card in my possession.

"That raw carrier on 49.6 is not as raw as it seems either. It has modulation in the form of a 30 or so cycle tone. Other similar carriers have been heard in VK6, some with tone of about 1 Kc. and some with both 30 cycle and 1 Kc. tone. Some of these appear to beam from the Middle East, and others from the north. Suggestions from overseas have been that they belong to telemetering stations on oil pipe lines.

"Other commercial sigs have been heard here, which have not been identified, but which appear to be inter-island and vehicle services—some f.m. and some a.m. Freqs. are from 49.6 to 50 Mc. Some have rich American burrs, while others speak a foreign language. Sample, "What about one of the speed boats buddy? That any use?" "Send 'em over on a tug boat..." Station names sounded like Prawn, Pracnee, Rumbley. One American voice on another net is deliciously feminine. Doesn't take any nonsense from the boys on the other stations either. These all appear to beam between N.N.W. and N. Other carriers have been heard which obviously belong to harmonics from lower bands, e.g. Radio Australia on 49.9 beaming from the east at 0200 E.A.S.T. Work that one out VK3. Radio Peking has also been heard, but in the 50 Mc. band in VK6. F.m. was present in this case.

"The position at present is that JAs are coming in almost daily in very good openings (in fact I had to break off writing this letter to take part in one, I worked 11 stations T.E. in the 100 minutes the band was open). Up to 30 odd stations have been worked in one sitting. My present total is over 150 different JA stations in over 300 contacts. I have missed quite a few good openings through going out, too, come to think of it. Finally, I must correct a misstatement in the Nov. issue v.h.f. notes. There has been no authenticated instance of the VK6-ZS path being open, though it is possible that sigs have been heard on two occasions." (Regret error.—V.h.f. Ed.) "We

ROSS HULL MEMORIAL V.H.F. CONTEST, 1958-59

Notification has been received from the Federal Contest Committee that they supplied incorrect information to "A.R." for this Contest. Under the heading of Contest Calendar, the Rules were incorrectly stated to be the same as for 1956-67.

The Rules for the Ross Hull Memorial V.H.F. Contest 1958-59 are the same as for the 1957-58 Contest. These were published on page 11 of the August 1957 issue of "A.R."

The 1958-59 Contest commenced on 1st December, 1958, and concludes on 31st January, 1959. A special award will be issued for the greatest distance over 3,000 miles.

think that the trouble is that there are not enough active ZS stations to ensure the constant monitoring of the band that is necessary to take advantage of any opening. Think the above covers the position over here adequately. —73, Bob 6BE."

General.—JA openings remained fairly constant during the first three weeks of Nov. and then fell off. The period culminated in the great opening of the 18th when VK3s had their first experience of JA QRM. That coupled to Sporadic E and extended ground wave work at the same time proved an enlightening experience to new operators on the band and was reminiscent of the years around 1950 when activity in all Divisions was at a very high level with Sporadic E openings coming thick and fast. More so when a few of the old timers were heard making a re-appearance on the band, pick and shovel apparently having been used to clear off the accumulated dust on their equipment, it having been idle so long.

Vern 4LK, as well as working into other Divisions and ZL, made the Brisbane gang happy by contacting them, in the meantime having his first contacts with Townsville, 210 miles away. That ZL must have been the first VK-ZL QSO for the season. Strange the way the ZLs have been missing so far. The VK3 gang missed an opportunity to work VK7 on the 18th also, they were heard over there.

KR6AF commenced akeas vee beamed at W land, 50.1 Mc., 0900-0930 E.A.S.T., on Nov. 30, with alternate 5-minute periods of transmitting and receiving. He also has a vee beam aimed at VK and if conditions indicate an opening or he hears the JAs or others calling VK, he shall be on the job in this direction. KR6AK on 50.120 Mc. and KR6BS around 50.1 Mc. should have been active by the middle of Dec. And speaking of that direction, both Jock 3ZDG and David 3ZAQ heard a DU under the QRM during the opening of Nov. 18, the first reported in VK3. Nov. 30 found KL7AUV working into ZL and JA. VK2ZER was reported heard at 1210 E.A.S.T. on Nov. 22 by a VE7. The activity is there boys, go and work it!

It is up to you yourself now to judge whether the Ross Hull Contest has now degenerated into a farce. By Dec. 3 some VK3 stations had registered 80 local contacts to score points. Very hard on the country v.h.f. man. Surely the time has arrived to run the Contest in two divisions, one for 50-54 Mc. and 56-80 Mc., DX contacts alone to count, the other for 144 Mc. and higher where any contact would score, local or otherwise.—30F.

ZLs LOSE 50-51 Mc.

Just as we were going to press a message was received from ZL2AGD stating that "As from 1st January, 1959, the ZLs lose 50-51 Mc. The 51-53 Mc. section will still be available on a shared basis. The Government is starting t.v. experiments on 54-61 Mc. during 1959."

NEW SOUTH WALES

Hi, chaps, well how did your Xmas go, or does it still linger on; pretty hectic, eh? Well, so passes another year which we feel has been full as regards organised v.h.f. activity meetings, field days, fox hunts, etc. Of course this has only been possible because of your participation and support of Institute affairs, and whilst on this subject it is perhaps opportune to briefly describe to prospective members some details of the V.h.f. and T.v. Group. The Group is a section of the W.I.A. and membership of the W.I.A. allows you full status in the Group, there is no extra fee. All that is required, if you wish to join the Group, is the completion of a form for our record purposes. Visitors are welcome at all times, and should you desire, your membership in the W.I.A. can be arranged at the meeting. Meetings are held on the first Friday of each month in the T.v. Studio of the Gore Hill Tech. College, right under the t.v. towers. The lectures cover quite a wide field, and should you perhaps be more inclined to the d.c. bands, but cannot attend the Div. meetings, come along as you will probably be surprised at the number of d.c. fans at the meetings.

For the v.h.f. enthusiast there is the night fox hunt held each month on 144 Mc. and generally one field day or fox hunt held on the Sunday of each month. There are scrambles, tours of inspection, contests, Xmas party, annual auctions, etc., all geared to keep you interested. So accept our invitation and come along.

Meeting.—At the Nov. meeting an interesting lecture was given by John ZANF on test equipment. John dealt particularly with v.i.v.m. and provided us with an interesting circuit. Keith 2ZJK described a natty transistorised 28 Mc. walkie-talkie he had built, and Bob 20A gave some points on overtones osc.

Field Day.—The spring field day was well enjoyed by participants and good signals were heard from portable stations. Results will be given next month.

Fox Hunt.—A very enjoyable evening was held on Nov. 26 and eight cars participated. Phill 2ZBB was fox and he was found by 2ZBG/2RX. A somewhat surprise, but very delightful, supper was given by Avril 2ZBB's XYL at their QTH following the event.

Gosford.—The Group was well represented at the Central Coast Convention and took away prizes and disposals equipment.

50 Mc.—Two major openings occurred during Nov., on 6th and 18th, during which openings occurred to JA, VK3, 4 and 5 simultaneously. Otherwise the band has been fairly quiet, but the activity has urged the building of equipment for the band.

144 Mc.—Nov. has seen the more frequent uses of v.l.o.'s and very stable signals have been heard from 2ZFC, 2ZBB and 2ABZ. The 4-5 meg. Command has been employed and with doubling in the final provides a very stable signal source.

Future Events.—Jan 21, hidden tx hunt with 2ZBG/2RX as fox. Please note that there will be no January meeting.—2AWZ.

VICTORIA

6 metre operators in VK3 experienced the best break through since the re-opening of the band on Nov. 18. VK4 signals were first heard about 1900, then later on VK2, 5 and JA signals, all at times over S9. Quite a few VK3 stations were operating and combined with the DX, the band was seething with stations. VK2 and VK5 signals were only in for a short time, but the VK4 and JA sigs were heard up till around 2400 hours. The long duration of the break through enabled quite a few locals to work their first JA. Things stayed fairly quiet in VK3 until the 27th, when the band opened to VK4 and for a short time to VK2 in the evening. Signals were again at very good strength and the locals managed to QSO quite a few new VK2 and VK4 stations.

The newly instituted v.h.f. scrambles are proving quite popular and over 20 stations were on deck for the Nov. six and two mx scrambles. Jack 3VT won on 2 mx, while Ian 3ALZ and Ron 3AHJ drew for first place on 6. For those who may not know, the 2 mx scramble takes place on the second Sunday, and the 6 mx scramble on the fourth Sunday of each month, both between 1945 and 2015 hours.

Mr. Don Rodini, who developed the antenna system for the 166 Mc. link between Victoria and Tasmania, was the lecturer for the Nov. v.h.f. meeting. Mr. Rodini described methods for measuring the gain of antenna and pointed out traps for the unwary. He went on to produce experimental curves for 2 and 3 element beams and extended those for long yagi antenna. Mr. Rodini pointed out that gain can only be acquired at the expense of space and expressed the opinion that some of the figures quoted for commercial t.v. antenna may be a little bit optimistic.

Seven stations were out portable for the Nov. field day and most were kept busy working quite a few home stations. Results next month. The next field day will be held on Jan. 25 and will coincide with the National Field Day.—SZAI.

288 Mc.—Active at Anakie, some 16 miles from Geelong, Jim 3ABT has had a QSO with SAAK and has heard SAUX on 288.3 Mc. Jim has two 7193s mod. osc. super regen 955 rx. Peter 3ZAV on 289.6 with xtal control, 3 miles from Geelong has been heard by 3ABK and 3BU, but still has to build his rx. Active also in the Geelong area, or just on the verge, are Dick 3ABK, 288.28, xtal control; Fred 3ALG two 7193s mod. osc. with 3BU coming up. Bill 3BU has received his Customs permit for a vidicon camera tube and ordered it from the British Amateur Television Club and hopes to receive it shortly. Also interested in building Amateur t.v. gear are 3UT, 2AWW and 4MT. 4JE has a vidicon camera tube but have no idea as to the progress he has made on his gear.—3BU.

50 Mc. P.R.P.

Advice has been received from Mr. Southworth that P.R.P. will concentrate on scatter research during 1959.

The relation between scattering, particularly T.E. and the solar cycle, is little understood at present.

VKs can assist by reporting on any opening in which scattering is suspected to be present.

Observations made by the writer last summer indicated that during all big E openings scattering was occurring. A number of VK2s, 3s and 5s were heard and worked by scatter.

It is necessary to search carefully with the b.f.o. on, looking for weak fluttery signals. C.w. is an advantage but not always a must.

C.w. Segment: In the U.S. call areas the first 100 Kc. is c.w. only by F.C.C. regulation. It has been suggested that in VK the first 50 Kc. be c.w. only by gentlemen's agreement.—VK3ALZ.

SOUTH AUSTRALIA

Several new boys on the band this month. Max 5GF, an old-timer on 50 Mc. 8 to 9 years ago; John 5ZDL, who is v.f.o. controlled and has a 4 el. 50 ft. up; Colin 5ZDE with an 807 in the final running 45w. and a 4 el.; also George 5DE, located at Tapleys Hill, with a good take off for v.h.f. contacts. Curl 5ZBL damaged his 4 el. while cleaning it and has only a folded dipole now, what about the DX Curl?

Several chaps on mobile these days. Ken 5BC doing sterling work on W.I.C.E.N. practices with a 50.2 Mc. link based on Mt. Lofty and Mt. Barker. Graham 5ZAP on 50.25 Mc. putting in very strong signals from various locations, and 5ZBZ working back from Williamstown through the hills to the city, quite a nice fat signal, I'm told. Heard Eric 3ZAQ with mobile gear the other night but understand that it is not 100 per cent. yet. Looks as though we will soon have enough mobiles for a fox and hounds contest.

John 5ZBA has his v.f.o. ticking, sounds good John, and Col 5RO has been experimenting with another v.f.o. Ken 5RP realises the potential of a v.f.o. and has a converted AT5 v.f.o. coming up. Gilbert 5GX is building a new modulator, and Ken 5KX and Bill 5ZAX are experimenting with wide-band f.m. for link work on 51.8 Mc. and 52.4 Mc. Hughie 5BC at Berri has been breaking through quite often on 50 Mc. and we hear quite a few DX stations calling him. Ron 5MK was heard working 5ZAB at Renmark, could not hear that station myself.

6FD was heard mobile in Adelaide, but have not been able to contact him myself. With the Xmas holidays close at hand, we should hear a lot from visiting 6 and 2 mx mobiles.

Still some activity on 288 Mc. and hear most of my news through George 5ZGA when he is cross-band. Brian Tideman now has the call of 5TN, hope you still stick to the v.h.f. band Brian.

JA openings have not been prolific this last month though the 20th was a red letter day, everybody getting their 6 or so contacts. On 15th the VK4s came through at 1200 hours, then the JAs, followed later in the afternoon by the VK2s. The 6th December saw a nice opening to VK7 with S9 plus reports both ways. There has also been some scratchy openings to VK5 and VK4.

An application has been lodged with the P.M.G. Wireless Branch to run a beacon sta-

tion on the 50 Mc. band by the W.I.A. (S.A. Division). Power, approximately 500w., using a vertical radiator in continuous operation. This is a sound proposition and should be supported by all v.h.f. enthusiasts, and should be considered by other Divisions. It will be of great value in obtaining data for the Geophysical Year and will help our case in respect to retaining the 50 Mc. band for Amateur use. Suggested frequencies are from 50.75 Mc. upwards. Cheers.—SZAW.

TASMANIA

50 Mc.—7LZ and 7BQ have finally worked into JA. Nov. 12 brought contacts with VK2 and VK4, with JAs heard by 7LZ. Nov. 13 VK5s were worked, but on 18th, 7LZ worked six JAs in JA2, 4, 5 and 6, and heard JA1, 3 and 9, also VK2, 3, 4, 5. 7BQ was also in on the activity, but no information about his contacts. 7XL at Devonport has worked Interstate DX this season also, but unfortunately was having a short spell in hospital when the JAs were coming through.

144 Mc.—7PF now operating at Devonport, has been establishing communication with VK7s in other districts. 7LZ and 7BQ in Launceston have been contacted by means of reflected signals from hills surrounding Launceston. Both 7LZ and 7BQ have a steeply rising hill 400 ft. high immediately in the direction of Devonport. 7RL at Stanley has also been contacted, signals over this longer path of 65 miles being better than those to Launceston, 45 miles away. T.v. signals on the coast seem to be always present and it was thought that there must have been a lack of activity in VK3, but this was disproved on 28th when 7PF worked 3ALZ on c.w. and heard 3ZEO, 3ZDW and 3ZDI. 3ALZ reported having heard 7LZ.

288 Mc.—7KC and 7MZ at Devonport gave a demonstration of mod. osc. gear at the last W.I.A. meeting and have interested members. Max Ives has his A.O.C.P. and has built up some gear for this band while awaiting his call sign. 7LZ and 7BQ have also established tx and rx in operation.—7PF.

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DX

Frank T. Hine, VK2QL
35 Abbotsford Road,
Homebush, N.S.W.

ACTIVITIES

The early deadline this month has apparently been overlooked by most of the correspondents, so our list is small.

7 Mc.—2AGH: WS*, 4*, 5*, 6*, 0*. 2QL: ZS, OK. WIA-L2022: UA3BP, YU2ARS, JA, W. BERS195: DL, G, KR6BW, LZ, OK, SP, UA, UAB, UB, UP, YO, YU, 4X4KK.

14 Mc. C.w.—2AGH: LA6U*, KR6BW*, KM-6BL*, VP2KFA*, KC6JC*, BV1US*, LU0AAW*, F78AS*, UR2AK*, V59AQ*, CX8AD*, 2AMB: VP2KA*, ZD2GUP*, ELIX, 2QL: VP2KA*, ZD2GUP*, FQ8AP*, VK2FR*, ZE2JD*, TF-5WDD*, LA2JE/P*, UO5RO*, OQ5IG*, ZD-2CKH*, ZS2R7, OQ5DF, CR8AC, ISAAW, F9UC/FC, VP2LG, FB8CJ, 2ZB: F9UC/FC*, F2CB/FC*, UO6FA*, UO6AL*, ZCAGT*, UQ-2AN*, 4X4WF*, VQ2MS*, ET2VB*, ET2KY*, FQ8AP*, OAAFF*, PY1CD*, V59AQ* and over 100 Europeans. 3CX: LU9FAZ*, LUSLT*, FF-8AC/GN*, KX6BP*, BV1US*, KC6JC*, CR-9AH*, TZ2LA*, VP2KH*, V52MA*, F78AS*, VRIA*, LUSZQ*, XZ2TH*, ZD2GUP*, LA4CP/P, LA2TD/P, SM5WN/LA/P. 4DO: YU*, SP*, BV-1US*, UP2NM*, VP2KFA*, LZ2KK*, HC1C*, YOZKAC*, FF8BF*, ZQ3CF*, ZE7JO*, V59MI*, ET2KY*, FF8BX*, VEJCF, FUSA8, U8KAE, UQ2AN, WIA-L2022: CR6DA, CT2AI, ET2KY, PJ2AE, OD5LJ, OX3RH, ZC4AM, ZC4IK, ZP-5LS, ZS8AU, VK2FR and VK3ARX both Lord Howe Is. BERS195: CO7HQ, DU1OR, FUSA8, ZJ0DA, OD5LJ, SV0WC, VQ2RB, VQ3CF, XW-8AI, 4X4JL, 5A2TY.

14 Mc. Phone.—2AGH: EA8BC*, 8A0M: CE-2CC*, CX2CO*, F. G. GM, HP1CC, VRIA, 4DO: FM5WJ, GD2FR, I5FL, ZV1AE, WIA-L2022: PY2CK, LU4DMG, WIA-L2022: HK4HW on s.s.b., K9PKC/VOI, K68FAE, WIA-L2048: W, KH6, VE, EA3KT, CN8IG, XZ2KN, MP4BET, 4X4BU, 4X4LA, I5FL, YSIO, ZE7JR, ZD6DT, 9K2AZ, BERS195: EA2DU, HP1CC, KX6, YS-1MS, ZC4AM, WIA-L2065: W, MP4BET, FK-8AR/MN, EA3LM, EA3JE, KR8LP, BV1US, GD2FRV, VK0KT, KJ5BH, VR2.

21 Mc. C.w.—2QL: OD5LX*, 4X4IO*, 4X4CJ*, ZD1GM*, YV5GY, YN1AB, F2CB/FC, VQ5EK, SV0WAE, EL2O, 2ZR, CE2P*, ZP6CP*, LU-8BAJ*, ZS5JK, OK3BG, 4DO: KX6BT*, UA-0GF, VK9, VQ4RF, SV0WAE, VQ4EZ, VP8KL, WIA-L2022: KP4KD, UA0KDA, VE8PD.

21 Mc. Phone.—4DO: KX6BT, JZ0PB, CR-4AE, CO2BL, YN1WL, OA4D, OA4AO, WIA-L2062: MP4BCC, CN2BK, YN1EW, CN8HE, EA7ID, 4X4RD, 4X4JT, VK0TC, TI2PI, ZS1JA, YN1CJ, YJ1OM, WIA-L2022: EI8X, HIG8A, FK8AV, HC5CL, MP4BCC, YJ1OM, ZS5FG, 4X4KY.

28 Mc.—2QL: LU3EL, KM6BL, WIA-L2022: DL3IR, KW6CQ, VQ4RF, ZS2DY, ZS9G.

Only one piece of info on 80 Mc., but it probably makes VKZER a most unhappy man because a VE7 has reported hearing him on 80 Mc. on Saturday, 22nd Nov.

QSL DETAILS

2AGH: VP2VB, UA1BE, UC2CB, YOSFT, KG-4AW, ZD6BX, VU2AJ, VP2VG, I5FL, 2QL: HB9YL, UA0GF, VP2VG, EA8BF, ZC4IK, VQ-2GW for 7 to 28 Mc., UO5PW, 9K2AZ, CN-8IF, GC2CN, VQ2GF, V59MI, KR6JF, UQ2AN, 8A0M: VRIA, FS7RT, KB6BH, SAX: 3A2CE, ELIK, BERS105: BV1US, CT2AI, FK8AS, IT-1PDN, LZ1AH, VO2NA.

And that winds up my final contribution as your scribe. This is the second time I have had to give up this page after starting it off in 1950 as VK4QL. My thanks this month go to 2AGH who is still able to add one or two new ones each month. It will soon get hard, Graham. 2AMB whose list shows he has been most inactive this month; ZEE who as my successor, I ask you to give all the assistance and co-operation you can for his task ahead, which believe me is not "a piece of cake". 8A0M, like most others, found the bands rather flat. 8AX we welcome to the page; don't let it be the last OM. 3CX now becoming acclimatized to VK3 after soaking up the VK2 sunshine. 3ZO why not become a regular? 4DO very happy that at last he has his W.A.Z. certificate safely tucked away or is it on display, Hal? WIA-L2002 with his first contribution, not your last I hope, Barry. WIA-L2022, who has been comparing the qualities of a holiday in VK2 and VK3. WIA-L2048, who uses a 4-tube radio-gram for his listening. Why not add a converter, Mike? BERS195, another globe trotter who has found his listening hours restricted at Nhill. Last but by no means least, two of my overseas "spies" in W4KVX and W5TY. Finally, I would like to thank each and every one, even if for only one issue, for their help in building up the page. Please do not lay back in the traces but help John ZZR to do the things I have left undone to make this page bigger and brighter for all those interested in the art of DXing.

During Nov. there was some activity from Communist China. The station BY1PK was tied in with a telegraphic competition held in Peiping. Only QSOs with Iron Curtain countries took place. SUIMS was also in the hook-up.

F9UC/FC has been heard in Sydney a few times, but seems to get "stage fright" fairly easily, as he quits after a QSO, and does not work the stations lined up. He is probably new to the game as his c.w. speed is slow. This makes the fourth FC station heard the last couple of weeks but they all seem to follow the same pattern.

Danger Is. where KH6MG/ZK1 and W0FBW/ZK1 originated a burst of activity from recently has been granted separate country status for A.R.R.L. DXCC.

If you work IT1ZW8/IP and IT1ZGY/IP, do not relegate them too far from memory as they were on the Pelagian Is., and once again we may have another added to A.R.R.L. DXCC. Activity expected in March.

Rhodes has been represented on 21 Mc. c.w. by SV0WAE. He is an American Novice licensee so keep you speed way down if you call him. He has been heard here round 1000z and 2000z on 21120 Kc.

ELIX will be QRT after Nov. If you are still chasing his QSL, try him at W8FHB.

QSL chores for SM5WN/LA/P are probably going to be handled by SM5AHK, SM5WN is known to be active on 14 and 21 Mc. c.w. His note is T7/8.

The DXpedition by OK7BX/M is due to commence on 31st Dec. and first stop is Albania. The gear has been checked during a run from Praha to Gottwald and gave outstanding results.

VQ4ERR expects to return to Zanzibar as VQ1ER in January.

ZD1EO is active on 21 Mc. a.m. and ZD1GM on 21 Mc. c.w.

ZS81 can be found on 28 Mc. a.m.

CR4AU produces a.m. activity on 28 Mc. and CR4AD on 21 Mc.

MIB has been reported active on 21 and 28 Mc. a.m.

If he has not already done the deed by the time you read this, V59AS is planning a visit to Trucial Oman. There is activity there from MP4TAC, V59AC had a quick one there, but had very few contacts with his 8 watts. W6SAI plans moving round Europe for the next six months and a good part of it will be operating as 3A2AF in Monaco on 14, 21 and 28 Mc. QSLs may be sent via 3A2AH or W6TNS. Plans are afoot also to operate from Andorra as well as other choice DX spots.

Juan Fernandez is granted separate country status for A.R.R.L. DXCC as from Dec. 1 and QSOs after Nov. 15, 1945, are eligible for credit. A DXpedition is planned for January to this spot by a number of CE Amateurs, one of which is CE3AG. One station will be CE0ZA on c.w. and s.s.b. and primary frequencies will be 1400, 2100, 2800, 14310 and 21410, and keep clear of the frequencies when calling. The a.m. side will be taken care of by CE0ZE on 1410, 2120 and 2820. QSLs are to go via Box 781, Santiago. CE0ZG has been active there already on 14 Mc. a.m. UM6DX is supplying a.m. contacts for those in need of Kirghiz.

VR8XC is a new call from Pitcairn Is.

XZ2SY puts Burma on the s.s.b. map.

FF8AK hopes to have s.s.b. in operation shortly.

Further activity is planned from the Seychelles (VQ9I) in 1959. Details will be given as they become available.

Nothing further is known at this time as to the granting of separate "country" status for KR6LP, who is active from Okina Erabu-shima, which is some hundreds of miles from Okinawa.

Another for the YLCC chasers is HB9YL who has been on the air since Sept. Her OM is HG9TT, so if you really need a contact with her and hear HB9TT, he will probably do the chores for her for the time being. My contact was in the reverse.

W2CTN has taken over the responsibility of handling the QSLs for the following: VK2AYY/LH, VK2FR, VR2DA, VR2DK, FK8AT, XZ2TH, ZD2DCP, JZ0HA, VK9BW, 9G1BQ, OX3RH, CR9AH and VQ3CF. This sounds alright on paper, and despite the good job he did with VK2AYY/LH cards, there were big batches arrived out here for Alan, necessitating frequent contact over the air and by letter to keep things straight. It does mean that in some instances the actual DX station has no QSLs on hand to which to reply to those he receives. This could be something that becomes too unwieldy. The list was supplied by 3ZO. Further to this, there is now a QSL Co-op in the U.S. How it functions I do not know, but it is apparently in opposition to the A.R.R.L. Bureau.

Conditions for November were rather unreliable from day to day. At 2000 GMT some mornings there would be plenty of DX signals on the 14 Mc. band and then for a few not worth switching on. On 21 Mc. the signals at the same time would be found to come from different continents on successive mornings.

In the interests of the VK DX boys, I feel that Federal Executive should keep them up to date with developments of their submission to the I.A.R.U. regarding getting some stability into the "country classification." Surely there must be something to report at more regular intervals than we have been seeing in "Amateur Radio." The recognised W.I.A. List for their DXCC is miles behind the A.R.R.L. one. Why a lump of rock in an ocean, with no habitation, can be granted classification as a "country" because a batch of Amateurs decide to go there, whilst, for example, OQ0, which has its own separate administration from that of the Belgian Congo, is not granted such classification shows the irrational thinking that is going on. Some issues ago I made comment on the fact that the top DX listed boys must find an outlet for the stalemate when there are no new ones to work. Fortunately the A.R.R.L. has not yielded completely to pressure being applied, but they certainly have made some strange rulings in granting of "country credit". If the term "country" was changed to something more applicable the position would not be so farcical. In case F.E. have not heard it, statements are being made, "The Aust. DXCC is not worth the paper it is printed on."

NEWS AND NOTES

HE8LAA is active on 28 Mc. a.m.

KW8AL, who supplies a.m. activity from Laes, is at present in the U.S., but expects to open up again after Dec. 20.

K56AF has closed and now operating as W6NZP but is still sending out K56AF QSLs. If you feel yours is overdue, send W6NZP a S.A.R. envelope.

Jan Mayen still seems to be somewhat of a mystery as operation is reported from there by LA3VB/P despite information that there was to be none from there this year. He is on 14 Mc. c.w.

ZD7SE is a new station on St. Helena and active on 21 Mc. c.w. Do not call on his frequency.

CR10AA now has his generator, so be prepared for a good pile up when he does come on, as with no batteries to worry about, he may be more active than previously.

If you still need a QSL from FK4DA write to PA0FX giving all QSO details and he may be able to do something for you.

The QSL position for JTIYL is hard to follow. No cards have been received at the VK2 Bureau to date, yet it was reported some months ago that a large batch of cards for all Bureaus were in course of distribution.

Still needing a QSL from OD5BZ? Try W8BKO who was the operator of the station and he will oblige if details of the QSO are given.

HVICN was very interested in the KWM-1 rig used by WITYQ during his brief period of operation from the Vatican and is planning to get on s.s.b. himself.

FF8AC/GN who has been operating from the new Republic of French Guinea closed the end of Nov. Hope you did not miss him, as the new Administration has no plans for Amateur activity from there in the future. He has returned to France along with all other French nationals. French Guinea has been granted separate country status for A.R.R.L. DXCC.

LUZZA is producing activity from South Orkneys.

Z89M has been heard on 14 Mc. c.w. and Z89G on 21 Mc. a.m.

Although not finally confirmed, indications are that MP4DAA from Das Is. will not be a separate country for A.R.R.L. DXCC but count as Trucial Oman.

* Call signs and prefixes worked. z zero time—GMT.

CORRESPONDENCE

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

AMATEUR TV

Editor "A.R." Dear Sir,

I am making this approach through your magazine to try and get in touch with any VK2s interested or active in Amateur TV.

I am very interested in this subject and I am engaged at present in building up equipment for closed-circuit work, with the view to possible transmissions at a later date.

However, there is little point in carrying on experiments unless there is someone else operating close enough to me on 238 Mc. who is active in this field to copy the transmission.

I correspond with Bill VK3BU/T regularly but VK3-VK2 ATV contacts are, to say the least, impossible or a bit tough anyway on 238 Mc. or above.

So I am hoping that anyone in VK2, possibly in the Sydney area, who is interested and

reads this appeal will write to me with a view to exchanging ideas, etc., on this very interesting and new field of ATV.

—Dennis G. Wheaton, VK2AWW/T.

S.W.L. RULES OF VK-ZL CONTEST

Editor "A.R." Dear Sir,

With reference to the recently completed VK-ZL DX Contest, it may be of interest to many of the Short Wave Listeners who entered this contest to know that there is at the moment some discussion in progress in respect to the Rule covering logging of ZL stations by VK receiving stations.

When the Rules were published in "A.R." prior to the Contest, my attention was drawn to the Rule which stated that we here in Australia could, as the Rule stated, log "overseas and ZL stations." I was of the opinion that the Rule meant that VK s.w.l.s. could log and score points for any overseas station in contact with a ZL (or VK) station, but not the participating New Zealander.

All attempts to obtain a ruling in Australia failed, in fact my queries were not even acknowledged, and, with the Contest a week away, I wrote to the N.Z.A.R.T. Contest Manager, who at the time was away from home, and of course did not receive my letter in time for the event.

Assuming that my interpretation was correct, I entered the Contest, but concentrated entirely on stations other than ZLs, scoring a reasonable total for the time worked.

Early in November I received a reply from ZL2GX, Contest Manager, who informed me that we couldn't count ZL stations in our score. (This letter is in the files of the N.S.W. S.w.l. Group.) This ruling, although not at all unexpected by myself, has come as a rude shock to some of the members who have filled up a lot of vacant spaces on ZL calls.

It is to put it very mildly, a very deplorable state of affairs to publish a Rule of such a nature that its misinterpretation could cause a disappointment to many of our younger listeners, who, as beginners, may not have the gear, time, conditions or experience that many of the older members have. These lads possibly would not be able for the stated reasons to receive much of the DX, and no doubt "filled up" on ZLs. I suggest that a disappointment of this nature could easily turn a young lad away from W.I.A. membership at a stage where we need all the strength we can muster.

The matter has been referred to our Federal Contest Committee, and by the time this letter is published, some fresh ruling may have been given. In any case, I trust that an error of this nature will not occur again, and in future contests, rules will be more explicit.

Only one comment I care to make about the contest was the insistence of several non-participating ZLs who have the band to do as they please with for 363 days of the year, but have to splutter a broad signal on the days of the contest. They do their utmost to gabble as long and often as they want (which I admit they are entitled to), but would not enter the contest, being content to make a perfect pest of themselves to s.w.l.s. and operators alike. Apart from these chaps and the several who covered large portions of the band with their wicks turned up to the hilt, general operating was of a standard which made listening a pleasure. —D. Grantley, WIA-L202.

SIGNAL REPORTING

P.O. Box 206,

Brightwaters, L.I., N.Y.

Editor "A.R." Dear Sir,

Your September issue of "Amateur Radio" carries a fine editorial relative to signal reporting, and comment is requested. Speaking only as one out of 150,000 American Hams, I think some comment is in order.

You are so right regarding the present system. However, I do not agree that the system is wrong, but rather the abuse it is put to. Tone reports are ALWAYS 79 whether raw 40 cycle a.c. or xtal d.c. Readability is usually accurate—Q5 for solid copy, 4 for difficult copy, and 3 for impractical to maintain QSO but will confirm as completed contact. Strength report means nothing as one only has to request the listener to increase his gain to get a 598 report. Rare low power DX will usually get an S3 to 4 report indicating weak signal, yet readability may be Q5.

Studying the suggested systems indicates they offer little change, but report of noise level can explain a lot for a Q3 or 4 report. As to tone, I would MUCH prefer to see a figure not just tone, but rather: key clicks, chirps, frequency instability or other factors about which a man may not be aware.

Most awards are based on some degree of report by the present system. Changing this could lead to confusion. While you are working in the right direction, it is felt that if we

make honest, practical use of the system we now have, the condition would be improved so a report would have more value and the operator could adjust his speed or QSZ.

How about an editorial on the boys using "bugs" who do not monitor their signal and have no idea what is going on the air? Recently I heard one such signal that had the DX boys crazy as the call was beyond recognition but might have been some new country. They called him furiously, but he ignored them. They suddenly one chap figured out the answer. It was a VK3 using a bug and the call was coming over as 4K31. Recently while working a KL7 who was having trouble, I asked if his hand was frozen and he said, "No, just using a bug for the first time, hi!"

Your publication is read with keen interest and is a wealth of information. Watch for the return of VK3SX. Russ will be back late Nov. with some wild yarns. He and his family spent a week visiting K2QXG before he left for Europe.

—L. L. McMaster, K2QXG.

EXPRESSION OF APPRECIATION

Editor "A.R." Dear Sir,

We, the organising committee for the South Western Zone Convention, held 15th and 16th Nov., 1958, desire to express our thanks and appreciation to all who assisted to make the Convention the success it was.

In particular, we wish to thank "Amateur Radio" and VK3WI staffs for the excellent publicity we received, the Shire of Ballarat and John VK3HW, who provided the locations for Sunday's activities.

Also the following business houses who assisted with prizes for events held:—

Electronic Industries Imports Pty. Ltd.,
Ham Radio Suppliers,
Philips Electrical Industries of Aus. P/L.,
Radio Parts Pty. Ltd.,
R. H. Cunningham Pty. Ltd.,
also Chris VK3AXU and Gordon VK3AGV, of Colac, for their advice and counsel.

We trust that those members who attended the Convention enjoyed themselves as much as we enjoyed meeting them.

—B. M. Stares, VK3ZBB, on behalf of Keith VK3IV, John VK3ZDM, Ian VK3ZCF, Gordon VK3ZEJ and Ron VK3ZER.

AWARDS

RULES GOVERNING "20-K" AWARD

Sponsored by K2QXG

1. Certificate will be issued on receipt of proof of contact with at least twenty (20) of the overseas bases of the U.S. operating under K prefixes, from January 1, 1955, per the A.R.R.L. Official Countries List for that date, or any additions which may be made in the future, subject to possible change in requirements. Must be one each, 20 of the 24 possible.

2. Accepted general rules governing awards used by A.R.R.L. will prevail with the exception that photostatic or photographic reproductions will be accepted with the right to require the original QSL at the discretion of sponsor.

3. "K" and "KN" Stateside will not be accepted. CN2 will not be accepted for KTI, nor OX for KGI, etc. Only ONE KC4, Antarctic, will be accepted, which must be land based.

4. The purpose of this award is to stimulate contacts with our overseas bases, therefore the January 1, 1955, date will be strictly adhered to.

5. Application with cards or reproductions and list of stations and countries claimed, together with 1 dollar U.S. money to cover costs, should be sent to: L. L. McMaster, K2QXG, P.O. Box 206, Bridgewater L.I., New York. Correspondence will only be answered when accompanied by S.S.A.E. Cards will be returned by registered mail, certificate by first class mail in mailing tube. Foreigners will be returned only by first class mail. I.R.C. coupons will only be accepted based on 5c. value, which is exchange rate i.e. 20 to U.S. dollar and from foreign countries ONLY.

NOTE.—Arrangements are being made for certain foreign clubs or stations to check QSLs from those countries. Since this award is under personal sponsorship, danger of loss to valued QSLs has been eliminated through co-operation of two well known DX men who will assume issuing of awards in event of personal inability. The sponsor assumes no responsibility for loss of cards in process.

At the present time the following countries are accepted: KA, KA0, KB6, KC4 (Navassa), KC4 (Antarctic), KC8 (Eastern Carolines), KC8 (Western Carolines), KG1, KG4, KG6, KH6, KJ6, KL7, KM6, KP4, KP6, KR6, KS4, KS8, KTI, KV4, KW6, KX6, KZ5.

VK2VK has offered to check VK QSLs and handle funds so certificate can be mailed direct from K2QXG.

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NOTES

NEW SOUTH WALES HUNTER BRANCH

"Probably never before in the history of Amateur Radio has the necessity for adequate representation, internationally and within the confines of each country, been so imperative as today." The foregoing was part of an Editorial in "A.R." nearly 20 years ago when the I.A.R.U. was our representative body. The Editorial finishes thus, "Perhaps never before had a non-member of the W.I.A. had brought home so forcibly the absolute necessity of organised Amateur Radio. If he stays outside he deprives the institute of the additional strength brought by his membership and also deprives himself of the right to voice his ideas and shoulder his share of responsibility." Chaps what about it? You are a member, you have donated to the I.T.U. Fund, so see if you can get the non-member to see the light. To the non-active Ham may I suggest that you think about the enjoyment your past activities have given you and try and preserve what we have for the up-and-coming youngsters.

At the University of N.S.W., Tighes Hill, Bob 20A became famous by creating a new record in delivering a lecture of nearly 2½ hours—beat the goon-show boys to a frazzle. Congratulations Bob for a well delivered discourse on the 144 Mc. Converter and I am sure even those who are not interested in v.h.f. may have

of a rx using A442, A515 and B443, at last we know why Lionel is often unable to copy signals calling 2AWX—he is still using it.

There was quite an exodus of lads and lasses from the Hunter District to look-in at Gosford's Field Day. The weather was at its very best, so was the company, so was the activities, and so was the work of the good ladies with the refreshments. 2BZ, 2FP, 2KQ, 2PZ, 2RJ, 2SF, 2VU, 2XT, 2ZL, 2AFA, 2AHA, 2ANA, 2AQR, 2AOR, 2AGY, 2AEE, 2ZDF, 2ZDL, 2ANU, 2AKP, 2CS, Associates Sutherland, Bailey, James, Jackson, McLachlan. Many brought their XYLS and harmonics and a boat trip in the afternoon got them out of the way. Les 2RJ won the Scramble at his first attempt, congrats. Harold 2AHA likewise and as usual, Dave 2BZ won the quiz. Stuart 2ZDF, looking around some remote spot for the hidden tx spied a lady local yokel and inquired from her if she had seen any strange people about. "Not until you came," said she.

The final Social for the year at Bill 2KT's took place and a good time was had by all viewing slides and playing billiards. Thanks Bill for the use of your place throughout the year.

There is doubt about any meeting at the University of N.S.W. so listen to 2AWX at the appropriate Monday.

BLUE MOUNTAINS SECTION

At the October meeting of the Section, we were honoured to have a visit from Dr. Leo McMahon (2AC) and Harry Solomons (2AJZ) who transported a great deal of equipment up from Sydney, set it up and proceeded to fill the ears of the boys with much melodious music whilst lecturing and demonstrating the beauties of selectivity and of having a rx that really sorted out things from the QRM. I saw blank astonishment on the faces of several that such a thing was possible. I can see thoughts of going to s.s.b. were ticking over.

This interesting lecture took up most of the evening and after being thanked for coming by Con 2LZ, all tucked into a sausage supper delightfully delivered by Norm 2QA. A guest at the meeting was Jack Russell (original holder of 2QA), so was interesting to compare techniques.

The month that followed produced several interesting events. Dave 2NK appeared on 2 mx from Lawson and after an evening or so getting modulation troubles straightened out, is now putting out a very solid signal on 2 using a 3 el. beam, 522 tx and AR17 rx; believe a good converter is on the way. Bill 2HZ was also heard on 2 using Wal's mobile equipment and we hope this will tempt him to stay. Don 2ART has also strayed on to 2 mx, using a 522 but have yet to hear him at this QTH.

The November meeting was held at Springwood on 21st and quite a lot of business was dealt with. The offer of a room in the basement of the Council Chambers at Lawson for use as a Section base station was accepted and we will probably soon be able to install some equipment therein so that members can get some air time. This was deferred until the December meeting for decision.

As 3575 Mc. has become untenable due to summer QRN, it was decided to abandon it temporarily. As so many members had gone to 2 mx, the Thursday night sked is to be on v.h.f. We expect Keith 2ADK and Dick 2RM to venture away from the DX soon and come up out of the wet. Syd 2AVK has an 8 el. Yagi and good converter going on 2 but tx is a little delayed. (Did you lose that beaut. 8 meg. rock in a flour barrel, Syd?)

A resolution that the Section donate to the ever-important I.T.U. fund was passed without dissent, although a split in the camp nearly occurred in deciding the amount.

Comments were passed on the recent Catalina Park Field Day and suggestions for making next year's "Do" bigger and better were put forward. Bob Pinning requested that Morse transmissions be put out for the associates and this will be done as soon as a few more put converters on 2 mx. He and Derek Boyd have theirs going now and Dave Millar has produced an excellent cascade.

Norm 2QA again exceeded himself with supper and all had the inner man well satisfied. Heard Norm make his debut on 2 mx about 8 p.m. on Dec. 4, but appears to have a little trouble in receiving Wal. Maybe he's being drowned in all that r.f. coming off the mountain at Blaxland. Hear that Keith 2ADK is now the proud possessor of a dual-wave transistor set. (Are you going to use it for DX on field days, Keith?) Dave is busy building a 2 mx walkie talkie and believe he is having trouble with white ants in his insulators. They keep blowing up. He has also been appointed C.D.E.N. Radio Co-ordinator for the mountains area. New members to the fold include Jack 2ADF and Kevin Gunning, both from Penrith.

FEDERAL QSL BUREAU

A DXpedition sponsored by the Radio Club de Chile is planned for January 1959. The locale of the DXpedition will be Chilean Juan Fernandez Archipelago and contacts will rate as a new DXCC country. As of November the exact dates had not been finalised due to transport difficulties. Four operators, CE3AG, CE3DY, CE3GI and CE3HL will accompany the expedition for its 10 to 13 days stay on the island. Under the call sign CE0ZA one station will operate on c.w. on 14030, 21030 and 28030 Kc. and 14310 and 21410 Kc. on s.s.b. On c.w. the station will listen 10 to 15 Kc. UP. The listening frequency for s.s.b. will be announced. Another station will use CE0ZB as its call sign and operate on a.m. on 14100, 21200 and 28200 Kc. Listening frequencies will be announced. Equipment to be used includes a Collins 32S1/75S1 32v. 75a. and suitable gas generating plant. All QSLs must be sent to B.C.C.H., Box 781, Santiago. If I.R.C. is enclosed a direct reply will be sent. If no I.R.C. enclosed, replies will be via QSL Bureaux.

W0BLZ, R. L. Olsen, Chief of the South Dakota "War-Whoop," advises that in order to be of assistance to stations needing South Dakota QSOs and QSLs for W.A.S., the above group has made arrangements for a South Dakota week-end for DX stations beginning 2300z Feb. 13 and continuing until 2300z Feb. 25. South Dakota stations will monitor the lowest 25 Kc. in the 80, 40, 20, 15 and 10 mx bands for c.w. stations, and the lowest 25 Kc. of each phone sub-band for stations calling CQ 8D.

The 4th European (W.A.E.) DX Contest takes place from 2100z Jan. 9, 1959, to 2100z 11th Jan., 1959. All bands 3.5 to 28 Mc. may be used, but crossband is not permitted. Full details of scoring, logs and other particulars may be had from this Bureau.

During recent months the much heard but seldom worked BVIUS has been more generous to VK stations. This is probably attributable to the fact that the present chief operator, Capt. Tony Borgia, was stationed in Sydney and Brisbane with the U.S. Army during 1945 and has a soft spot for VK. BVIUS is located at Taipoh, Formosa, and uses a BC810 and a 3 el. beam. Tony, who is W6EQU when at home, assures a QSL for all VK contacts and requests cards be sent to M.A.R.S., Taipoh, M.A.A.G., U.S.C.D., A.P.O.63, San Francisco, Cal., U.S.A.

—Ray Jones, VK3RJ, Manager.



JOHN MOYLE, VK2JU, who has been appointed as representative of the Wireless Institute of Australia to accompany the Australian Government Delegation to the Administrative Radio Conference to be held in Geneva commencing 16th August, 1959.

had some seeds sown to be watered at a future date. The hearty acclimated vote of thanks was the perfect gesture for such an excellent talk. Thanks again, Bob, we will see you again.

Among those present were VKs 2ADS, 2AOR, 2AFA, 2ZDL, 2CS, 2ZNRW, 2RJ, 2AEE, 2SF, 2ANL, 2XT, 2ZL, 2AOR, 2ZMO, 2ZDF, 2ZCT, 2QB, 2ZEP, and Associates Sutherland, Davis, Bailey, Hall, Richardson, Rugg, Jackson, MacLachlan, Grey, and Stebbs. Regrets were expressed for the loss of George 2SO's wife.

Varley was welcomed back after a holiday to the Sunshine State, where he had a good time and contacted several of the boys with his portable rig. 2AAI heard for the first time giving 2AWX a report; 2AOR also sparked up that night. At the time of writing, Wal 2AXH is now in his 25th home since leaving Terrigal last Easter for N.Z. Excellent results were achieved by Bob 2ARG in re-broadcasting Stan 2ZDL and Stuart 2ZDF on 40 as call backs to 2AWX.

Browsing through a magazine of 30 years ago, came across an article by Lieut. L. Swain

CONTEST CALENDAR

Compiled by W.I.A. Fed. Contest Com.



ROSS HULL MEMORIAL V.H.F.:

Dates: 1st Dec., 1958, to 31st Jan., 1959.
Bands: All v.h.f. bands.
Notes: Same as for 1957-58.

Special Award for greatest distance over 3,000 miles.

NATIONAL FIELD DAY:

Date: Sunday, 25th January, 1959.
Bands: (1) H.F. (2) V.h.f.
Rules: As published in Sept. "A.R." page 16.

B.E.R.U., C.W.:

Dates: 0001 GMT, 17th Jan., to 2359 GMT, 18th Jan., 1959.
Bands: 3.5, 7, 14, 21, and 28 Mc.
Notes: As for 1958.

W.A.E.D.C.

Dates: C.W.—2100 GMT, 9th Jan., to 2100 GMT, 11th Jan., 1959.
Bands: 3.5, 7, 14, 21, and 28 Mc.
Note: Owing to lack of support last year to the Phone Section, this section has been deleted this year.

Had a visitor to the shack 'other night. Eric ex-VK2WG, which is now Wagga commercial station. He was most interested in the changes in gear since his day of roll your own, with crystals ground from eye-glasses and counterpoised antennae. When last seen a few days later, he was wrecking several broadcast sets to build up a s.w. rx. New call on the band soon?—2ASZ.

VICTORIA

As previously advised, the last meeting was family night and thanks to President Fred and his willing band of able workers, the evening proved a howling success in more ways than one.

There were pictures for all, Father Xmas for the tines, presents for children up to twelve years of age and an excellent supper to round off the night. The meeting was particularly well patronised and extra seating had to be found for the overflow. Fred was right in the thick of things and seemed to be thoroughly enjoying himself.

During the evening, Mr. Dobbyn, who for many years kept a friendly eye on the W.I.A. from the P.M.G.'s Department, was presented with an inscribed barometer-thermometer set from the Victorian Division as a mark of appreciation for the many years of pleasant associations with him. It was a little unfortunate that the night was our Christmas "Do" as I am sure that Mr. Dobbyn could have given us some very interesting reminiscences judging by his few remarks. Perhaps our President could persuade him to give us a longer session at a later date as I am sure it would be appreciated.

In the Sunday morning broadcast, prior to the meeting night, President Fred advised the Division that after a long period of effort on the part of Council and the Building Committee, a property had at last been found to house the Victorian Division of the Institute. He also confirmed this statement at the meeting night but as negotiations were still in progress for the purchase of the property, he could only indicate in a general way that the address was somewhere in East Melbourne. By the time you read these notes, the place will be ours, so you might as well pop along and have a look and perhaps enroll in the working bees which will by then be on the go. The address is 478 Victoria Parade between Simpson and Powlett Streets, and on the south side. It is a two-storey residence. At the moment the building is in a residential zone. This means that we will have to be conscious of the fact that we have neighbors and cut out our midnight pavement ragchews and the like, but

otherwise our usual activities will be unrestricted. We will be able to run our library with Mrs. May as librarian, conduct our various instruction groups and operate 3WI on the premises, so things will be much on the same basis as they are at the present address. The monthly meetings will continue to be held at the Royal Melbourne Technical College.

The premises are somewhat larger than the present ones and lend themselves quite well to our requirements with very little in the way of alteration. The ground floor will probably accommodate the library and the first floor the tx room and study groups.

From an electrical point of view, the area should be vastly superior to the present site and as good as any that could be found so close to the city. It is also very conveniently placed with plenty of parking space and easy access by public transport.

Plans are well in hand for the installation of the two ½kw. BC810 tx's (we now have) and the v.h.f. set-up should follow soon after. Our President will be seeking assistance, no doubt, for all the jobs that will need to be done and things should be on the move by the time these notes are being read.

We have already received our marching orders from the present address in Queen St. (about six months sooner than expected), so it looks as though we made it just in time.

At the time of writing the method of financing the venture, which will cost about £5,500, has not yet been resolved, but it will probably take the form of a debenture issue suitably framed to suit the needs of all members. It may be possible to include full details of this before the magazine goes to press, but failing that, the February issue will carry the details. It might be a good idea also if the story of the many disappointments which led up to the ultimate triumph could be included. I feel that all concerned in tracking down such a suitable spot are to be congratulated on bringing a most difficult assignment to such a successful conclusion.

To return to the meeting, the following new members were admitted: Messrs. L. J. Laughton, 3APL; J. L. Morris, 3AES; J. K. L. Matchett, 3TL; J. A. Gilmour, D. O. Clausen, A. T. Lewellen, W. J. Vette, and D. L. Seedsman.

Last, but not least, I would like to list the names of those who were responsible in any way for our most successful Christmas night:

Firstly, the eats were supplied by Mesdames Higginbotham (3RN), Stafford (3KS, YF of 3XB), Dixon (3TE), Robertson (3WJ), Morris (Geoff's mother), Buckley, Stebbings (3ZGD), Ryan (3AZB), Wardlaw (3ADW), King, Dennis (3TF), Henderson (3ARV) and Neal (3ZAN). The call signs in brackets belong to

the OMs except in the case of Mavis (3KS) who is a YL. I hope I got them all.

Then there was 3MS who loaned the very excellent Christmas recordings which provided the background music prior to the pictures.

Our old friend Ken Milburn (3CW) made a cash donation which was used to buy the sweets. He also played the part of that kindly old Gentleman.

Mrs. Moncur shopped for the toys and Keith 3VQ donated some pens and pencils used as gifts. Santa was assisted by Mrs. Lancaster and Jay was buzzing around on all sides. In addition, there was a power of work done in arranging the tables for supper and I saw quite a number of the older children helping here. No doubt these were the second ops. of those mentioned above.

The President's thanks to one and all of the above (and any I may have missed inadvertently) for the manner in which they answered the call to arms.

As is usual, there will not be a January meeting owing to the school holidays.

News is to hand that Hans 3AHH was married during last October. As most members are aware, Hans at present is working with the I.G.Y. Committee in Europe. Congratulations are extended to both Hans and his XYL, Angioletta Maria. We are wondering if Hans will now show a preference for phone operation over c.w.?

SOUTH WESTERN ZONE CONVENTION

The Convention was held on 15th and 16th Nov. at Ballarat. The first to arrive were Brian 3ADV on Friday and Ken 3AWU and XYL who were met at the railway station by members of the committee.

Saturday afternoon other Hams arrived and were directed to their bookings, etc., from a post set up at the Civic Hall. At 6.30 p.m. on Saturday, all assembled at the "Blue Danube" on Lake Wendouree for the Dinner and Meeting. The guest of honor, His Worship the Mayor of Ballarat, Cr. G. L. Scott, M.L.A., spoke during the Dinner and officially declared the Convention opened.

After Dinner, the YLs and XYLs departed for the picture theatre and the OMs settled down to the zone meeting, an auction, films and a display of gear. At 11.15 the ladies returned and supper was partaken of before departing to bed.

During the evening the prizes donated by the Trade were on display: 6v. Geloso vibrator power supply (R. H. Cunningham Pty. Ltd.); Synton crystal microphone and two minniwati valve manuals (Radio Parts Pty. Ltd.); antenna tuning unit (Ham Radio Suppliers); QQE02/5 tx'ing valve (Philips Industries); 3 steel tapes and 8 transistor manuals (Electronic Industries Imports).

The official proceedings on Sunday started from the 3HW shack on Tom Boy Hill. John impressed the visitors with the commercial-like set up. The two mx hunt lapsed because of insufficient starters. The 80 mx hidden tx was not heard of after they left the site except for occasional queer noises and control car 3AGV trying to get stronger signals went out about half mile with no results, so pulled into some bushes and became the hidden tx. After a period of waiting, Jim 3ABT arrived by the back door to win after missing the turn-off and having to back track.

Bill 3AMH, a member touring Canada, was able to contact John 3HW from Winnipeg and a lengthy contact resulted. 3WI was therefore listened to from the cars.

After lunch proceedings were located at the Wendouree Oval. The all-band scramble was a good success and was won by 3ADV. All stations operated together and were allowed to take up a location within five miles of the G.P.O. and operated for half an hour.

The Ballarat and District Ambulance Service gave an interesting display of life saving techniques which kept the Hams silent for half an hour. Afternoon tea and distribution of trophies then followed, and the Zone President, SAXU, wound up the day's activities.

Prize winners: 80 mx tx hunt, 1st, 3ABT. All-band scramble, 1st, 3ADV; 2nd, 3ATW; 2 mx contest, 1st, 3ZQ. Hams that travelled the furthest, 3ZDB and 3XJ. First to arrive,

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NORTH EASTERN ZONE

This month brings forth a lot of activity in various ways on various bands by members and associates. First and foremost is associate Jim Harrington, who having obtained through disposals a 122 transceiver, has been getting it ready for bush fire network at Euroa. Jim spent a lot of time recently with another member tracing out the connections of an un-soldered plug with eight wires! Left with it working, only to find a few days later perished insulation further up and a few dry joints. Looks like I'll have to take lessons in soldering Jim. Bruce 3AGG has a home-brew rx with all mod. cons. including a most professional look about it. Performance is excellent.

Brian 3ASF is in the throes of building a similar rx, while Peter 3AFP is experimenting with the front end of home-built t.v. rx for better results. Nothing unprofessional about this building either. Jack 3PF working South Africans and other DX on 10 mx with 26w, and a piece of wire, good hunting Jack; while just a few miles away, Ken 3KR is working DX on 20 mx with good results. Sid 3CI has a portable two mx rig working. Murray 3HZ very busy at the tx's of local b.c. station when a storm put station off the air for a considerable time. Murray has not much time these days to spend on Ham Radio. Alex 3AT has a new QTH but I don't see any antennae sprouting. What no radio room, Alec? Les 3ALE still talking about migrating to warmer climes.

3ACK, 3ASE, 3AGG and 3JC discussing whether a carrier is modulated or is a series of beat frequencies. The outcome? Nil. That man at Kyabram has a sterba curtain slung between two tv. masts 100 ft. high, puts a nice signal into Europe on 20 mx with only 10 watts. I've heard the reports. Others on 20 mx getting along the DX are 3AGC and 3JC who hunt together to get comparison reports on their respective beams. 3AGC has a quad, 3JC has a 3 el. beam, nothing much to choose between them so reports indicate. 3AOB has a new 40 mx mobile rig.

Anybody else who wants a mention in these notes had better let me know what they are doing, I haven't the time to snoop as much these days.

QUEENSLAND

With the prospects of little official activity in Qld. over the Xmas holidays our supply of news will be rather small for the next month or so. However, when Council meets in the New Year things should start rolling again.

John 4FP, our President, took the chair at the Nov. Council meeting for the last time before he went to New Zealand for a touring holiday. He expects to be back in time for the January meetings and said that he can be contacted on most bands as he has his mobile rig with him. Bon voyage, John.

Once again arrangements have been made for the smooth continuation of the Inward QSL Bureau. Bruce 4ZBD has, because of housing problems, relinquished the position and, until further notice in "QTC", all cards may be sent to the box number. At the meeting Bert 4AO inquired if two 522 transceivers could be obtained for 4WI. At the following general meeting it was announced that Chris Everdell had donated a 522 transceiver for 4WI. Many thanks Chris. You have the right spirit!

At the November general meeting discussion was kept to a minimum as two R.S.L. visitors were to lecture on Civil Defence. Group Captain Curnow and his associate gave the Hams a new meaning to Civil Defence. The meeting was given over mainly to question and discussion and by the time the meeting closed, many Hams must have realised just how important to the community this hobby of ours has become. It would appear that there will definitely be State sponsored plans for C.D. E.N. in Queensland and more than ever the responsibility of communication will fall on the country Hams. The city Hams have had the benefit of first-hand information in the way of practical participation in lectures and various trials, but when the question was raised about emergency power, it was found that far too many Hams relied on a.c. power. Ask yourself the same question. "Can you run on emergency power?" If you can't, why not do something about it?

Nominations for the Advisory Committee for 1959 were taken and their names will appear in "QTC".

Of interest to the v.h.f. boys was the announcement by F.E. of the intention of the 6 mc. band for a further period of one year subject to a month's notice by the Department pending resumption of the band.

By the time this goes to press our Xmas "Do" will be over and I hope and trust everyone comes along to make it a gala occasion. Merry Xmas to one and all.

TOWNSVILLE

The final meeting for the year was held last night, 27th Nov. It was fairly well attended, two more prospective members for the W.I.A. being present, soon the Club will almost be 100% members of the W.I.A. also. The last examination saw the success of Bob 4ZAY obtaining the full ticket, also the two associate members, C. Bahr and B. Blekhot. Good luck boys and sincerely hope you enjoy to the full the wonderful hobby of Amateur Radio.

Brian McDonald spoke of the enthusiasm of the R.A.A.F. boys in a project to build the W.I.C.E.N. Communicator (Oct. "A.R."). It was then decided that five of the other Club members co-operate and build same. I only hope that this project does not suffer the fate of the last one. The boys decided to have a social get-together at the corner shop in a fortnight's time to finish off a real good year for the Club, which is rapidly gaining in membership.

The band being very erratic lately, have seen the locals come up on 28 Mc. for the brief evening break through to Europe so much so that the first question from the G boys is "Don't tell me you live in Townsville, you chaps are the only ones breaking through."

Allan 4BE in bed suffering from strained muscles. Would help the local road gang in spare moments! Ted 4EJ succumbed at last to the glib tongue of 2AUR and really gone on the cubicle quad. Bob 4RI certainly working his share of DX, never seems to sleep.

Happy to report our Secretary, Ed. 4WH, will soon be back at work again, operation successful. John 4DD and Eric 4EL still away "Down South" on holidays. Bob 4AMF finished re-building the house and also a beaut. speech clipper that allows all background noises to come through. Bill 4ZBE taking up new chore and promises to write notes on the v.h.f. band. Don't forget the deadline each month. Len 4GD still on 28 Mc. only and cannot find time to come along to club meetings, same goes for Ed. 4GF.

Bob 4RW had his score total reduced by one as apparently Lord Howe Island has not been granted new country status. This now makes three countries, viz., Sicily ITI, Corn Island YNO and Lord Howe Is. VK2/LH. A news flash from Ingham 60 miles north of Townsville reports brief picture on t.v. set by local business man. Well chaps, one and all, I wish you all the best for 1959. 73 Bob.

SOUTH AUSTRALIA

The notes for the VK5 Division for this month open on a sombre and sad note. The S.A. Symphony Orchestra will play in the background "Hearts and Flowers" as the members of the Council file into the room, dressed in their ceremonial robes of hessian and sackcloth, for the announcement which has filled their hearts with gloom and despair. The announcement is that the usual correspondent for the magazine has met with an accident, and besides having to eat his meals off the mantelpiece, he does not feel up to writing the notes for this month. "Comps" regrets the fact, but he has had to bow to the inevitable. Council might have recovered from this severe blow, but unfortunately "Comps", in his delirium, made the fatal mistake of writing to "Pansy" 5PS and asked him to please help out and do the notes for this month. "Woe is us," "Woe is us," wails the Council. "We got rid of that refugee from the loony-bin, and now he is back to haunt us again." Flattery will get them nowhere, and I intend to do my duty as I see it, even if it means an enforced stay at "Doc's" boardinghouse, for libel. I agreed to fill in for this month on two conditions. The first being that the Editor must not run his red pencil through anything that I might write, and the second that the Technical Editor must immediately be sacked. Just think of it. Pincott walking the streets of VK3, down-at-heels, pinched and hungry, a pathetic figure, the victim of the vengeance of the terror of VK5. Excuse me whilst I chuckle maniak—maniac—well chuckle anyway.

Getting back to serious business, "Comps" was driving his car along the road near Elizabeth and another car rushed out and tried to bite him on the wrong side, with the result that he finished in the Adelaide Hospital. From what we read in the papers it looked pretty bad for him, but he said in his letter that he was feeling much better, although still a little shaky, but expected to be OK in about a week or so. Anyway, by the time this appears in print he should be quite well and able to fight the libel actions, or the duels

arising from his unfortunate choice of a substitute correspondent.

Now for the monthly general meeting for November. This meeting took the form of a buy and sell night. Council met and after some lengthy deliberation decided to get the services of the most handsome, well-built, athletic, brainiest, and photogenic of the members to take over the job of M.C. When I took the job on, ahem, I was a little dubious as to my ability to handle it with success, and I asked Doc 5MD for his opinion. He said, without hesitation, that I had the three necessary qualifications for the job: (1) Grey hair to give me an air of wisdom, (2) A paunch to give me an air of prosperity, and (3) Corns to give me an air of anxiety. I thanked him for his kind words and felt more confident of the job, and together with Norm Colman to assist me, I feel that I am not boasting when I say that a good time was had by all. My natural sense of modesty does not permit me to say any more along these lines, but I feel that in Norm and myself, the VK5 Division has secured a good combination of brain and brawn which is brain and which is brawn. I leave to your imagination! Up the river to you!

Now quite a large number of visitors rolled up to the meeting, and some of these very welcome gentlemen: those I caught up with were: Messrs. R. Bridgeman, Gino Marzar, G. Griffiths, Llewellyn Griffiths, R. Johns from Leigh Creek, to say nothing of two Associates who made the trip from Mt. Gambier, Fred Aslin and James Edlington. Several licensed visitors included J. Sutton (ex-3ZC, now 5OS), Anthony 5CN, and SAR of Leigh Creek. Two visitors came from Elizabeth. We were very glad to see you all, and hope that you will come again.

Norm Colman is doing a wonderful job of organising for the VK5 Division. He never misses a trick, and the best compliment that I can pay him I think, is to say that he has worthily donned the mantle of the previous organiser, Joe 5JO.

Bram 5AB is dabbling with s.s.b. Frank 5AE is running a class at Alice Springs for the youngsters who would like to be Amateurs of the future. Jack 5AM has had his share of transformer trouble, but the end of the lane is in sight I am told; has had good results with mobile rig. Eugene 5AV is now back in Adelaide from Ceduna. Dave 5AW is having the time of his life working the JAs, etc., on 6 mc; also active on 2 mc. Les 5AX is doing most of his work mobile in an endeavour to avoid the local man-made QRM. Hughie 5RM, pardon me, 5BC, is always on 6 mc, but I have heard him on 40 mc at times. Dave 5BF is putting most of his spare time into the emergency fire services and on 40 mc occasionally. Bill 5HR was heard on phone, yes, I sold phone, on 40 mc in contact with Wally 5DF. John 5JC, our respected and severed Hon. Sec. (may his beard never grow any shorter), has been heard chasing the DX on 40 mc. Ted 5JE has just joined up in the Institute again and naturally can always be heard on 40 mc after the DX.

Jim 5JK is active on the local e.f.s. communications, and can often be heard on 288 Mc., usually in QSO with 5KY. Ken 5KC is very active on 50 Mc., but finds time to handle a little e.f.s. work, to say nothing about the mobile work on 80 and 40 mc. Pat 5KM is keeping the Amateur Radio flag flying at Victor Harbour with local emergency work, and is also active on 14 and 21 Mc. Rex 5KY is not heard so much these days. Where are you hiding OM? Howard 5XA is also another one who is very quiet these days. Bob 5BG seems to have taken root on 80 mc, more often or not assisted in the background by the XYL. Cec. 5BZ does not appear to be very active these days. Brian 5CA, our President (may his shadow never grow smaller), is more or less confined to activity on his Type 3. Brian, don't forget those immortal words, "DX before dishes." Claude 5CH has been heard several times lately at this QTH with an extra good signal on 40 mc. Col 5CJ is another one who is putting a good signal out on 40 mc. Wally 5DF always seems to put a good signal out from Lincoln; never fails to bob up after the Sunday morning session from 5WI.

It is remarkable the number of Amateurs throughout Australia who have, over the past month or so, made regular enquiries as to the condition of Joe 5JO. Practically every contact that I have had lately has been prefaced by this enquiry, and so it is with considerable pleasure that I am able to announce that he is home from hospital, and is reported as being well, even to the extent of being allowed occasional visitors. His cheery voice was heard recently over the Sunday morning 5WI session, and he was quite happy to be able to speak to all the boys and thank them for their expressions of sympathy and also for the number of get-well cards that he had received.

At the moment of writing, Inky 5WF is touring the Eastern States and having a good time. He has not been the best lately, he picked up some sort of throat infection. Des (ex-5DK, now 7DK) has been heard on phone and a.w. from Tassy. Don't forget to give him a shout if you hear him, he would like a chat with the VK5 boys. Alan 5DU, Carl 5SS, Frank 5MZ, Jim 3LM, Max 5OS, and that stranger to VK5 3MZ, can be heard each night on 40 mx in their regular sked. Jim 5FO is busy with e.f.s. work but as yet has no regular shack. George 5GB is doing a good job of re-broadcasting 5WI on 50 and 144 Mc. each Sunday night. Gordon 5HM always seems to be on 40 mx at all sorts of times and can always be counted on for a yarn. Harvey 5HQ is as busy as busy as busy can be, but finds time to pop up occasionally at the monthly meetings. Arch 5XK is heard occasionally down at Lucindale on 40 mx. Have any trouble with the Blacks down there Arch? Lance 5XL is very interested in group activity and tape recording. Lloyd 5XM is a consistent e.f.s. helper and seems to be enjoying himself immensely. Laurie 5XN is now one of the upper-crusters in Amateur Radio; he is playing around with television but finds time to have a go at the 14 Mc. DX; would you make me a t.v. set, please, Mr. Werner, Sir? Graeme 5XV at the moment of writing is in the midst of his Uni. exams, and naturally has had no time for Amateur activity. The set-up at Lis 5YH is a bit Gilbertian. Being the son of Gordon 5XU, it is a question of the first one up is the first on the air.

You are probably all aware that I have a grandson, if you don't know, it is only because you have seen me first and dodged around the nearest corner. Anyway, he and I get on very well together. Anywhere you see me, you see him, in fact I find it difficult to get on the air without him taking charge. He is only four years old, and has already put me in bad with my son-in-law and daughter by proudly saying his grace in front of the toffy-woffy visitors as "Two four six eight—bog in and don't wait," and giving me full credit for teaching him! To make a short story long, he now goes to kindergarten, and when he came home the first day my XYL asked him if he said grace at his lunch. He said he did and volunteered the information that he clasped his hands together, just over his mouth, and everybody then said their grace. My XYL then said proudly to him, "What does Grandma's good little boy say for his grace?" MY GRANDSON then said, "I always say, 'Hello See Co, Hella See Co, Hello See Co,'" just like Grandpa! My explanation that he was only putting out a general enquiry did not go over too well, and I can still see my XYL, as she said in tones more of sorrow than of anger, "Petals, how could you act that way, the world will think I have married a bodgie." Somehow I can't seem to take a trick since my Grandson and I teamed up together.

I understand that the VK5 Division go out of business this year as the Contest Committee. I don't think anybody will dispute me when I say that they have done a wonderful job under extreme difficulty at times. It is very hard to please all the people all of the time, and the fact that all contests have functioned so smoothly speaks for itself. Good work boys.

Fred 5MA has been limited to using his 22. There is a new starter up the Murray Valley these days, Harold Fisher (5ZAB) who is well satisfied with his 50 Mc. results. Welcome OM to the good old game of Amateur Radio.

Ron 30M came along to the meeting this month and I did not put him in the official list of the visitors because I was a bit canny, and thought he was a spy sent over by that Pincott joker in Victoria. I had a chat with him and found him an extra good scout, which rubbed out the spy angle.

Collin 5XY is another one who has been a little quiet on account of exams., but as he came out Dux of Prince Alfred College this year, he can be excused. Albert 5ZL has been kept busy with his interest in young people's clubs although he has been heard on 50 Mc. at various times. Keith 5ZY is heard with his skeds with VK3 quiet often. He and I usually nod to each other in the members' stand at the football and exchange reminiscences—remin-

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lance—reminiscences—well we chat about old times. Charlie 5ON is heard occasionally on 40 mx, but I understand that his main interest at the moment is bowling. Les 5LC has been heard loud and long on 21 and 28 Mc. using his cubical quad, also he has been heard mobile on 40 mx at times. Luke 5LL is to be heard on 40 mx with his well known brand of home spun philosophy. Jack 5LR is getting more than his share of the DX on 21 Mc. and yet he still finds time to continue with his building of a t.v. set. Pat 5LT is a regular 20 mx DX hound, and I think that his Port Lincoln signal is well known throughout the world.

Bob 5RI is experimenting with transistors and has also been heard on the air with mobile equipment. Reg 5RR has been in the throes of rx trouble; OK now OM? His 122 will give him good service as a mobile station.

5WC, which is the well known Woomeera Radio Club, is still without its club rooms, although I have it on good authority that they have been offered a little . . . (Sorry, had to censor the rest, this scribe would be better at a smoke night.—Ed.) Wick 5WM has gone cuckoo on mobile operating. Austin 5WO at the time of writing has pulled his tower down (don't ask me why) and is in the throes of putting up a new one.

Gordon 5XU has been purposefully left to last so as I can express my thanks for all the assistance he has given me in compiling these notes, and also for the help he gives me in the preparation of the weekly paragraphs in the daily paper. The amount of work that this joker puts into Amateur Radio in this State has to be seen to be believed, and if there is anything in the saying that one only gets back from any hobby as much as one puts into it, then he must be getting plenty. Long may he thrive.

Well folks, this is it, believe it or not, this is the end (Hooray!—Ed.) The men in the white coats are fastening on my special jacket, assisted willingly by the members of the VK5 Council.

On behalf of the VK5 Council and myself, I take this opportunity of wishing you all a Happy New Year and plenty of what you want from Amateur Radio. One thing I would stress, and I say it in all seriousness, don't forget Amateur Radio is only a hobby and should be kept on that plane. Be tolerant, remember the other fellow may not be doing things your way, but he is travelling along the same road, and last but not least, remember the grand old game of Amateur Radio will always only be as strong as its weakest link. 73 to you, de Pansy 5PS.

TASMANIA

NORTH WESTERN ZONE

Here we are chaps, 1959 with a whole brand new year in front of us and I take this opportunity of wishing you all the very best of everything that you earnestly wish for yourselves; you, your YL, or XYL, and your family. Also I hope everyone will do their best in the field of Radio and that all associate members will strive their utmost to get their "ticket" THIS YEAR.

There hasn't been a lot of activity within the zone during the month so news may seem a trifle brief. The Hobbies Exhibition in Burnie during November went off OK and the local boys, assisted with some gear from the Devonport boys, established quite a varied and interesting section. Roy 7RN had his rig set up and operated under the call sign 7WI. He battled on gamely most nights against some of the worst conditions experienced for some time. A screen resistor in the exciter unit got excited one night and gave a little trouble to add to the fun. Some 288 Mc. gear was on display and I believe they had one unit mobile one night. An experimental t.v. set was running on a couple of channels, also a couple of 'scopes displaying wave patterns. Quite an array of interesting radio components was also on show and I leave it to you to imagine some of the enquiries from the public. Everybody was electronically counted both in and out of the exhibition; same counter causing no end of bother when people stood too long in front of the light beam.

As our December meeting hadn't been held when this went to print, I shall report on same next month along with this month's meeting to be held on the 5th instant. Don't forget to come along and make it as great a success as the last instructional night.

Our Secretary has had a spot of annual leave and I believe he got right on the right "frequency" and made quite a number of successful contacts with fish at Great Lake and on the East Coast. Can't agree that that is the way to get your transmitter built Max, but the relaxation should make you just right for the building project.

From "reading the mail" I understand Dennis 7DR has at last passed all his exams and he declares there'll be no more study. Congratulations to you, Dennis, you can't use the old excuse of "study" for not being heard on the air from now on. I suppose that boat will make the new one. Happy and Prosperous New Year to all.

PAPUA-NEW GUINEA

There's not much to tell this month. There was a vast improvement in attendance at the last monthly meeting, twelve members were present. This is a 100 per cent. improvement and we hope that the members will keep up the interest they have shown. Our President 9FN, has resigned from the position of President and operator of 9WI. These positions have been filled by Doug 9SB. Our first Divisional letter went out this month and we are now waiting for some comments from the outside members who cannot attend the meetings. This should be a great boon and help to get more Amateurs back in the Division. Here's hoping, anyway.

We would like to welcome the following new members into the Division and trust their sojourn with us will be a pleasant one: Rob 9RO, Jerry 9GK, Bill 9WK, Doug 9DB, Roy 9AU and an associate member, Mrs. Una Clark, XYL of the QSL Officer.

It is anticipated that at the next meeting that a lecture will be given and this will be put on tape and broadcast to the members in the Sunday morning hook-up. Now that a news letter is published, it is hoped that members will take enough interest to send in a contribution, this will not only help other members but will help the Editor to keep it going, so how about it chaps?

There is quite a bit of activity in Moresby at present. They seem to have gone mad on antennae. Doug 9SB has acquired a tower and is busy putting up a tri-band quad before Christmas, but he didn't say which one. Bob 9RR is busy with a G4ZU and should have it working within a fortnight; Rob 9RO has dismantled a long wire on a bent rod and is also toying with a quad, but I think he is waiting to see how 9SB makes out. No sense in two of them wasting time is there?

The winner of the ragchewers cup this month is Norm 9NT. I heard him on 21 Mc. the other night at 7.30 p.m.; decided to have a chat with him but I couldn't get a word in edgewise. At 11 p.m. he was still going strong; the same station too, so I have given up the hope of ever working the said gentleman. That sea voyage must have been good for the constitution Norm; you won't want any leave now, hi. Haven't heard 9GV lately. Still too busy washing nappies, I think. Hope you can spare ten minutes on a Sunday anyway, George. How about getting round those other Lae boys, too, and give us some news from that neck of the woods. Eddie 9AT has changed to s.s.b. and should be heard in the near future.

The QSL Bureau requests that members make sure their contacts have their call correct, and if possible get them to write the name of the operator on the card as a means of identification. This will help to get cards to the rightful owner with the minimum of delay. Cards arrive with odd call signs on them, so, if the operator's name is also on the card this would let the Bureau know who the card is for.

There was no meeting for December, the next being the last Wednesday in January. To finish off I would like to wish you all a Merry Christmas and a bright and prosperous New Year. So 73 for 1959 and be seeing you all in 1959.

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EDITORIAL



HOBBY???

IT is often advisable from time to time, no matter what walk of life we tread, to re-orient our thoughts in regard to our personal activities. In the matter of earning our livelihood we might give consideration to the future; concerning our leisure time, how we spend it.

The Radio Amateur, according to his code, is said to possess a hobby—a leisure time activity. However, when one consults with the Shorter Oxford Dictionary difficulty is experienced in making Amateur activities and portion of the definition coincide. The volume concerned considers that a hobby is "a favourite occupation or topic pursued for amusement" or in further delineation "an individual pursuit to which a person is unduly devoted".

Can we then say that our spare-time efforts are just "an individual pursuit"? Our financial outlay, our broad study, our thoughtful construction merely adds up to "a favourite occupation". What of the benefits the scientific and industrial organisations gain and will gain from our thoughtful observations? Just "a favourite occupation"?

To the general public perhaps, without an appreciation of what goes into Amateur Radio, the word hobby will suffice; but to those who

know and understand, it is extremely doubtful if this word can even touch on the multitudinous ramifications of our operations.

As members of this great world-wide fraternity, we should make it our business to let the public in general know that Radio Amateurs are people who carry out modest forms of radio research in that most searching field of all—"practical test"—that Radio Amateurs are 24-hour-a-day ambassadors spreading good-will to every corner of the globe. That Radio Amateurs are citizens who place their personal possessions—their radio equipment—at the disposal of the public as a whole when the necessity arises.

Maybe we are worthy of the word Amateur—"one who cultivates anything as a pastime"; but surely we can say our pursuits deserve better than hobby. Ours is more, much more than "a favourite occupation". It is an act of citizenship, of study, of research. We are operating in a field of especial significance. In keeping with this then let us be more than just a hobbyist. Let us be proud of the fact that we are engaged in Amateur experimentation as well as other activities, and that we can truthfully be described as Amateur Experimenters.

FEDERAL EXECUTIVE.

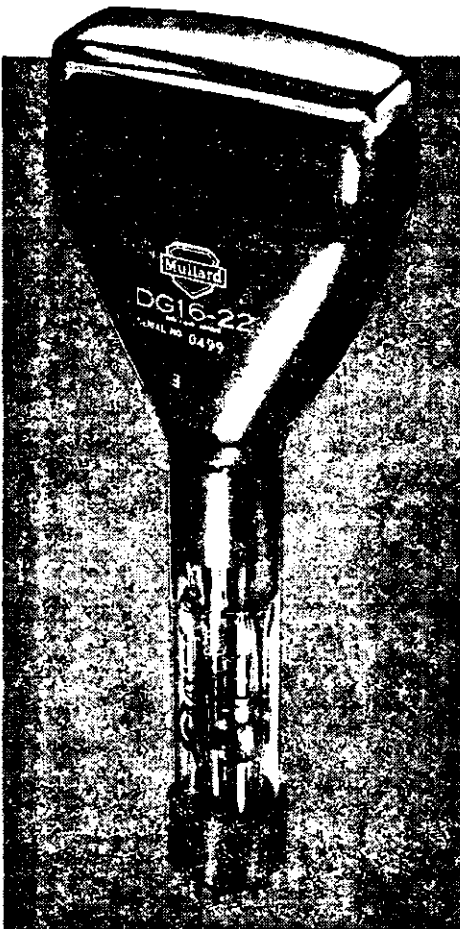
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Two Mullard



Tubes



2½" general purpose tube DG7-5 (CV2175)

The DG7-5 has a low operating voltage and is intended for symmetrical deflection. It is being successfully employed for wave form monitoring and for inexpensive oscilloscopes.

5½" x 1½" flat A-scan tube DG16-22/7APH1 (CV2352)

The screen of the DG16-22 measures 5½" x 1½". A number of these tubes can be easily stacked to provide multiple displays in confined spaces.



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YOUR VISION AND TELEVISION

WILLIAM E. OWENS,* F.V.O.A.

It is necessary in this short article for me to explain at once that this subject matter could be elaborated to a far greater extent than I propose. However, as it is necessary to condense a considerable amount of information within a small compass and in as simple a form as possible, I trust the more technically minded reader will overlook the approximations and over-simplification of some of the explanations.

My objects are:—

- (a) To attempt to help you in some of the optical and visual problems you will encounter in your work with television, and explain the reactions to television of the viewer;
- (b) To attempt to outline the visual background and application of television.

Now, a television set is primarily a box of electronics, and is truly a wonderful instrument, with all of its own technical problems. However, when the picture tube heats up and the image appears, it becomes at once also an optical and visual phenomena, and you enter an entirely different field of science.

The proof of what I have said is simple. Just close your eyes in front of your television set and instantly it becomes no more than a radio.

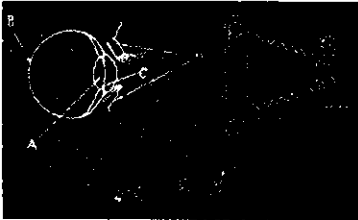


Fig. 1.—Like a Camera.

Our problem is divided into three parts:—

- (a) Light,
- (b) Optical,
- (c) Visual.

A full analysis shows that the following are the specific problems:—

- (1) The problem of the quality of the light emitted from the tube.
- (2) The quality of the image formed on the picture tube.
- (3) The relationship of movement of the images to the screen.
- (4) The problems of refractive errors in the human eye.
- (5) Flicker, viewing distance, viewing periods, and fatigue.

Generally speaking, the picture tube has a peak emission of light at 440 millimicrons (indigo), and again at 565 millimicrons (yellow-green). Now, yellow-green light agrees quite well with the maximum sensitivity of the human eye, and is useful light, but the indigo section (which represents 27% of the total light of the screen) has little visual

● At a recent general meeting of the Victorian Division of the W.I.A., Mr. Owens delivered a lecture on "Your Vision and Television." Upon request, Mr. Owens subsequently supplied "A.R." with the manuscript so that it could be published for the information of all members.—Ed.

use, and only affects the light adaptation of the eye. Hence the severe dazzle when the set is turned up too brightly, or when the screen is too bright in relation to the surrounding light in the room.

The image on the screen is an electronic image, not an optical one. For some hundreds of years scientists have been perfecting optical images, hence the high perfection of the optical instruments with which you are all familiar, that is, telescopes, field glasses, spectacles, etc. But the image on the picture tube is one that is formed by the impact of a stream of electrons on a fluorescing surface and is not a complete picture at any time, but a series of lines constantly appearing light and dark, according to the transmission. Indeed, the image is, in effect, not really there at all, but is only seen because of a phenomena of human vision called retinal retentivity. Because the eye retains the image it sees for a brief period (as is the case when you look at a bright light and look away), this factor permits you to see the picture as a continuous one. Remember also, a good deal of definition is lost when viewing movies shown on television because each process of photography and re-transmission causes some loss in definition.

One of the new skills that is required when viewing television is that of the appreciation of movement with the eyes kept quite still.

It is normal for the eyes to follow movement at a subconscious level, and this can be seen when you watch the flight of a tennis ball after it leaves the racquet. The eyes are fitted with quick-acting muscles to enable this to be done, not only with one eye, but with both eyes locked together in high precision.

The reverse occurs when viewing a television screen, when the eyes must be kept almost motionless whilst the action of the flight of the ball, for instance, is covered by the television

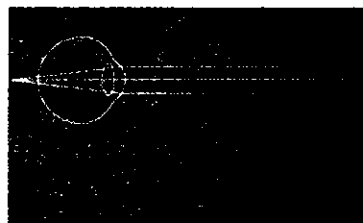


Fig. 2.—Hyperopia (farsightedness).

camera. In the beginning, this reverse viewing of movement must be learned by the viewer, and can often cause symptoms of vertigo, etc., until it has been mastered.

The human eye is very similar in its optical system to that of a camera, and for those people who know photography, it can be said to work at approximately a N.A. of F 4.5. Like a camera, the eye has a lens behind the pupil, and is normally focused for infinity, and objects from 20 ft. onwards require no additional focusing of the eye. However, the eye, like the camera (Fig. 1), has to have its focus altered for distances closer than 20 ft., and whereas this is accomplished in the camera by altering the lens position, the human eye alters its lens shape by means of an internal muscle and sus-

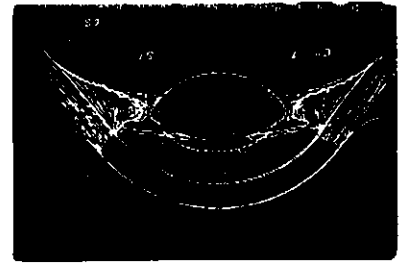


Fig. 2a.—Accommodation.

pensory fibres. The presence of a blurred image on the retina or light-sensitive area of the human eye, will stimulate this focusing, causing the lens to be made more convex and adjust the eye to focus objects at the required distance. This is done with a fair degree of precision. Many of you are aware that a good quality camera needs a miniature range finder built into it to obtain the high degree of precision in its focus.

The optical defects of the human eye may be considered, for the purpose of this article, to be anatomical or axial; that is, the eye-ball is too short for its focus—commonly called Long Sight (Fig. 2). The eye-ball may be too long—called Myopia or Short Sight (Fig. 3); or the front of the eye, called the Cornea, may not be spherical—thus causing double focus or Astigmatism (Fig. 4).

These defects affect either the clarity of the images seen by the patient or the degree of effort (eyestrain) required to achieve clear vision.

The long-sighted person usually sees clearly if the defect is not too great, but suffers from headaches, squinting eyes, fatigue and nervous disorders, and irritation from light.

The short-sighted person just doesn't see clearly at all unless objects are close. They, too, tend to screw up their eyelids and are noticeably slow in identifying distant objects.

Those with Astigmatism usually suffer most and combine many of the symptoms of the other two defects.

* Director of Andrew Gaddes Pty. Ltd., Optometrists and Spectacle Makers, 157 Elizabeth St., Melbourne, C.I. Vic.

It should be obvious, therefore, that if the viewer has a television set which is accurately focused and with proper background lighting, and sitting at a reasonable distance, yet, in spite of this, has sore eyes, headaches or blurred or double vision, then the problem is due to optical errors in the human eye, and they should seek professional advice at once.

Television does not in itself cause eyestrain when properly used and viewed, but does seek out unerringly those persons whose vision, for one of several reasons indicated, is not normal.

I have referred to the words **retinal retentivity** whereby the eye retains its image. Now, a light must flash on and off between 16 to 50 flashes per second (varying with the individual) for this flashing light to be seen continuously. Movies operate at about 48 flashes per second; but in television, the picture is changing all over the screen all of the time, and any given point on the screen rises and falls in brightness about thirty times per second. If you look away from the television screen, it is possible to see this flickering of the image out of the corner of the eye. So it is quite normal for this phenomena to be observed in this manner should it be reported to you by viewers. However, if the tube illumination is too intense, then the flicker phenomena increases due to the nerve relays in the retina.

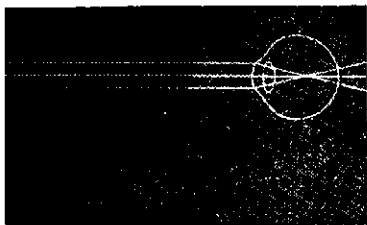


Fig. 3.—Myopia (nearsightedness).

SOME HINTS IN T.V. VIEWING

The viewing distance of a television set should be roughly six to seven times the height of the screen, and viewing it at too great a distance may make certain portions of the picture too small for visual appreciation, and viewing it too closely calls for excess focus of the eye plus muscular convergence of the two eyes, and will cause fatigue.

One thing that must be clearly in the minds of all viewers is the duration of the viewing periods, and it is amazing just how much time does elapse when one sits down comfortably in front of this electronic visual wonder for a night's enjoyment. Two, three or four hours' continuous viewing occur almost without the viewer being conscious of the passage of time, and so one must expect that visual fatigue can follow **too much viewing for too long a period**, just the same as over exertion in any field of function will give the same results.

Children should be rationed in a commonsense manner in their viewing periods, and although at first the fascination of these little figures so life-like, and so interesting, may cause them to sit abnormally close, to the

extent that the cover glass is usually covered with tiny finger prints, yet, when that novelty has worn off, they should be seated at a specific distance along with the adults.

The lighting in the room should be not as bright as the screen, and yet not so dull that the screen glares out of a dull contrast. Remember that the light is being transmitted through the tube to you, and not reflected from a screen as in the case of movies, which is the fundamental reason why movies are seen better in a completely darkened room, and television is not.

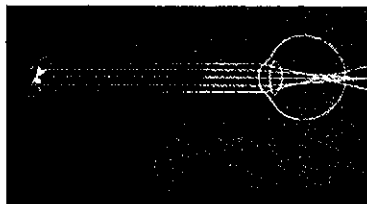


Fig. 4.—Astigmatism.

There is a wide variation in the degree of contrast between the room illumination and the picture tube, and commonsense is a great help in treating this problem. Usually floor lamps, such as your standard lamp, or one or other of the specially built television lamps will be a great help, and they should be so arranged that they are out of the way of your own line of vision, do not reflect in the cover glass of the television screen, and yet illuminate softly the wall immediately behind the television set.

Always allow a short period for the eyes to become dark adapted, after watching a television screen for a long period, before you get in your car to drive home on a dark night.

Do not resist unwisely the wearing of glasses when they are ordered for you, or other advice given by your professional advisers.

Keep your set illumination to a minimum, and make sure that the installation of the set is correct so as to give you the best possible picture image.

The immense number of television sets already sold in Melbourne and Sydney, and the enormous number of licenses being issued each week, are an indication as to how this new medium will alter our lives and our eye habits.

The writer, who saw television in England and America in 1948 and again in 1955, was staggered at the tremendous increase that was apparent in the number of viewers, both in the old world and in the new.

Already in Melbourne and Sydney, television dealers have had brought to their notice in no uncertain manner the visual problems of this new media, and in Chicago it was the writer's privilege to take special lectures that had been prepared, so as to be ready for the problems to be met with in this new field.

Here in Australia, we are seeing a good form of television, equal fully to that viewed abroad, but yet we are only touching the fringes of the appli-

cation of television in one form or the other as it will come to pass in a very few years.

Already, closed circuit television is a wonderful field in education, in surgical demonstrations and many other fields. It is used extensively by banks, by engineering projects, in underwater photography, and now the eye professions are making use of television to train children with retarded vision or poor eye co-ordination.

In conclusion, I may say that your eye men are quite as deeply involved in the visual aspects of television as you are in the electronics, and it is necessary for both to know some of each other's problems in their respective fields, and I hope that this short discussion on vision may be of some help to you all.

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Series Phased Array, Mark ?

COLIN A. MACKENZIE,* VK3ACM

IN its original form (Fig. 1) this antenna was known as a Marconi-Franklin Series Phased Aerial. As its name implies, it was a product of the Marconi Company and was first fully described in 1933. It is an end-on or end-fire array, having uni-directional characteristics.

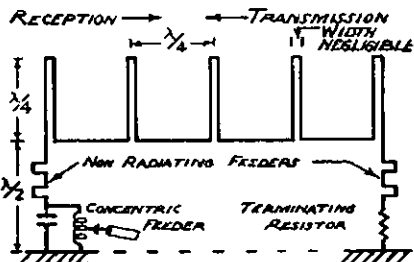


FIG. 1
MARCONI-FRANKLIN SERIES PHASED AERIAL.

The next development was described briefly in "QST", Dec. 1945, p. 62-63, "The World Above 50 Mc" by E. P. Tilton, WIHGD. The information was given to A.R.R.L. Headquarters by an anonymous foreign Amateur. This development consisted of adding the lower half or image, as shown in Fig. 2.

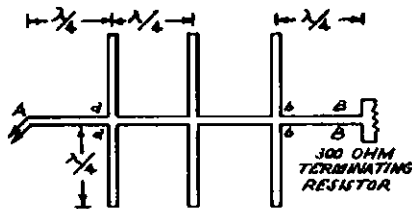


FIG. 2

IT IS POINTED OUT IN QST THAT $\lambda/4$ SECTION B₂ MAY BE ELIMINATED. AND IF FEED LINE TO TRANSMITTER IS 300 OHMS. SECTION A₂ MAY ALSO BE DISPENSED WITH.

Exactly the same arrangement was later described in "Amateur Radio", May 1948, p. 3, "Series Phased Aerial Arrays" by H. K. Love, VK3KU.

The next we hear of this type of aerial is again in "Amateur Radio", Jan. 1950, p. 14, "The Lenfo Series

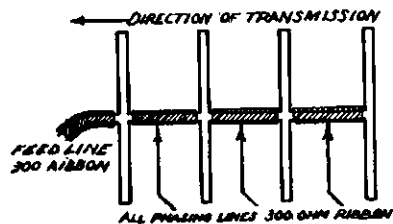


FIG 3
THE LENFO

HERE THE 300 OHM TERMINATING RESISTOR HAS BEEN REPLACED BY A FOLDED DIPOLE

Phased Array" by Len Jackson and C. Gibson, VK3FO (Fig. 3).

It is in this form that, I think, there would be most interest. It should give high gain, good back-to-front ratio, wide bandwidth, be easy to feed, and require no critical adjustments.

However, from various sources disappointing results have been reported, even after following carefully the design procedure recommended. Now unfortunately the writer, not being in a position, because of lack of equipment, to carry out the necessary measurements, has, after much thought and waste paper, decided the easiest way is to throw the problem to the wolves, so to speak, in the hope that some mathematical genius in conjunction with some experimental wizards, will take up the challenge and thrash the problem to bits and come up with all the answers.

Here are the problems:

- (1) What is the correct value of propagation constant "K" to use in the design of the elements?
- (2) What effect does the spacing of the conductors in the loops have on their resonant length?
- (3) What effect on the performance does the use of 300 ohm twin ribbon quarterwave sections have?

MARCONI-FRANKLIN

To understand the problem more clearly we must first take a look at the basic theory of the Marconi-Franklin series phased aerial shown diagrammatically in Fig. 4 (a).

In the example five loops are used. This number can be increased or decreased, depending on the gain and beam width required, or, of course, for Amateur use, the space available to erect the beast.

Considering its action as a transmitter, travelling waves are fed via a non-radiating feeder to the point A from whence they travel along the aerial to point O. Then by another non-radiating feeder to the terminating resistor which has a value equal to the impedance of the system. This resistor absorbs any residual energy not radiated. It has been found that this resistor can be dispensed with when the length of the aerial amounts to about four wavelengths. Under these conditions the travelling wave energy is wholly dissipated.

The dotted curves in Fig. 4 (a) represent a travelling current wave at an instant of time, assuming no attenuation losses. This travelling wave is also represented in Fig. 4 (b).

The two conductors comprising each loop are made close enough in space, so that, as regards radiation, they may be considered as coincident, and

therefore replaceable by a single wire on which there are two waves of equal amplitude travelling in opposite directions. Stationary or standing waves will therefore be set up. ("Lenfo" please take note. If there were no standing waves how would it work?) The nodes of which are situated at the points B, E, H, K and N, since at these points there will always be two equal currents flowing in opposite directions. Each loop will therefore radiate in the same way as a single quarter wavelength aerial carrying a stationary wave.

The direction of the arrows in Fig. 4 (a) and (b) show that the loops in the aerial array are not radiating in the same phase at the same instant of time.

Fig. 4 (c) and (d) show the relative phase of each of the loops, the vectors of Fig. 4 (c) indicating a progressive phase difference of 90° between successive loops. At the instant of maximum radiation, i.e. that chosen for the diagram, it will be seen that only each alternate loop DEF and JKL is radiating; the current in DEF leads that in ABC by 90°, and so on down the array

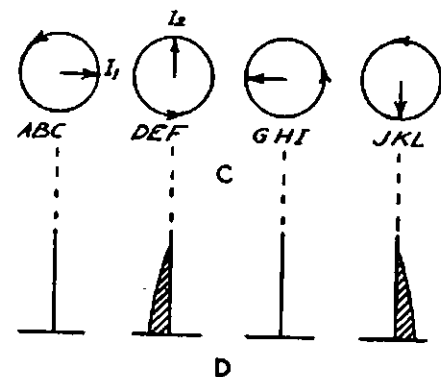
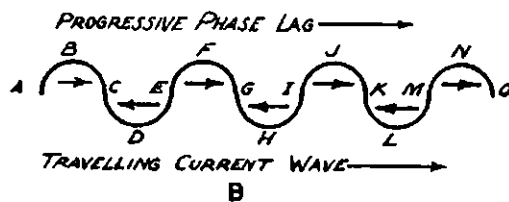
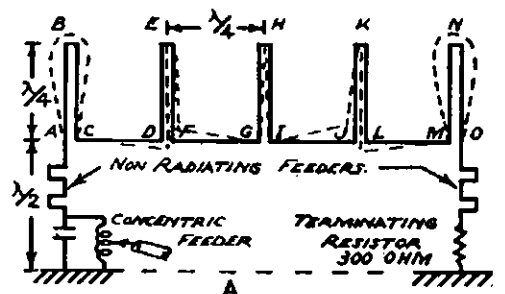


FIG. 4

* Ballendella, via Rochester, Vic.

from the end A. (It should be noted that a lag of 270° is electrically equivalent to a lead of 90° .)

Although each loop is equivalent to a quarter wave aerial, there is one important difference, it can be shown that the effective radiation current is doubled, thereby increasing the radiating resistance four times. As the loops of the array are spaced a quarter wavelength apart and have equal currents in each, but with a phase difference of 90° between adjacent loops, the phase lagging progressively from A to M, we have the required conditions for an end-on or end-fire array, with reinforcement taking place in the direction from M to A.

Considering vector I_1 . It represents a loop radiating a wave 90° ahead of I_2 ; since it is spaced by a quarter wavelength from the loop represented by I_2 , its effect at that point will be equivalent to a wave arriving in phase. This reinforcement in the forward direction between the loops corresponding to vectors I_1 and I_2 is represented by rotating the latter backwards through 90° .

In the opposite direction, i.e. from A to M, since the radiation from the equivalent loop ABC starts with a lag of 90° , it will be lagging by another 90° and will therefore arrive exactly in anti-phase and so the two will cancel. From this it can be seen that the radiation from successive loops cancel in the backward direction. Therefore to obtain maximum back-to-front ratio an even number of loops should be used in the array—2, 4, 6, 8, etc.

The foregoing is a brief outline of the theory of the Marconi-Franklin series phased aerial. A more detailed and mathematical analysis can be obtained by consulting "Short Wave Wireless Communication," Ladner and Stoner (John Wiley & Sons), second edition, 1934.

"LENFO"

Now let us take a look at the "Lenfo." One of the main contributing factors to the failure of this antenna, especially where a long array is concerned, is the recommended use of twin 300 ohm ribbon for the quarter wave phasing sections. As the value of propagation factor K for this type of line is about 0.8; this means that electrically the phase difference between the loops is 90° , whilst the space phase difference is only 72° . This means that the radiation from successive loops is not in the correct phase relationship for maximum gain. Also in the backward direction the phase relationship causes a reduction in back-to-front ratio.

Fig. 5 shows a "Lenfo" consisting of six elements A, B, C, D, E, and F spaced electrically 90° apart, but with only 72° physical separation. It is clear that the radiation from loop F as it travels forward toward loop A, firstly arrives 18° ahead of the radiation from loop E, 36° ahead of that from loop D, 54° ahead of loop C, and, by the time it reaches loop A, it is leading by 90° . If the number of loops in the array were increased to 11,

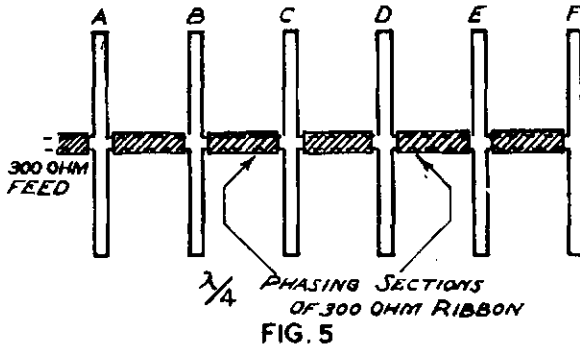


FIG. 5

the radiation from the rear or terminating loop would arrive 180° out of phase with the radiation from the leading or fed loop and the two would cancel each other.

In the backward direction, instead of each successive pair of loops cancelling, we would have a considerable amount of rear radiation, hence a poor back-to-front ratio. It is therefore essential that the space and electrical phase difference between successive loops be the same, or as close as possible. It should also be noted here that maximum gain is obtained from end-fire arrays for spacings between successive elements of between a quarter and three-eighths wavelengths when those successive elements are 90° electrically apart. This becomes more important as the array length is increased (see Terman "Radio Engineer's Handbook," p. 802, Fig. 36).

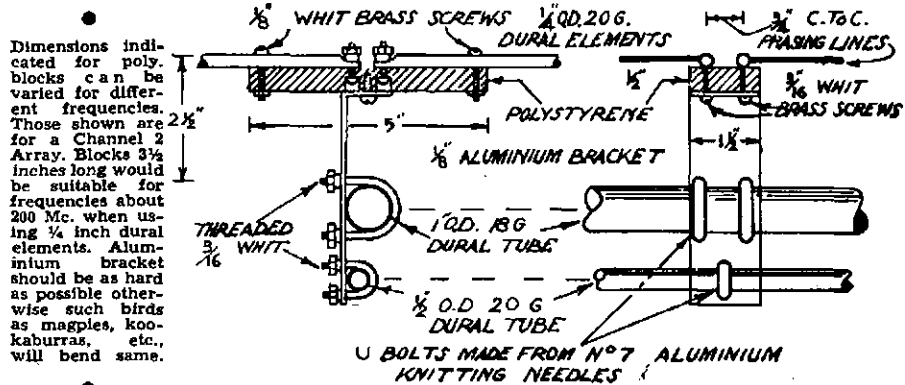


FIG. 6

An air spaced phasing line can easily be constructed using a minimum of insulating material that will have a propagation constant K of at least 0.98. Using such a line, the difference between successive loops will be less than 2° and could be neglected.

It is also important that in phased arrays the dimensions of the elements should be correct so that phase relations throughout the whole array are maintained. As the elements of this type of array can be supported at current loops, the end effect can be kept to a minimum.

In the "Lenfo" article a value for K of 0.9 for the design of the elements was suggested as being the correct figure to use. It is the writer's opinion that for the element design a value of K at least 0.95 should be used. The actual value will depend on the size of the conductors used. Just what effect

the close spacing, about $\frac{1}{2}$ " centre to centre, has on the resonant length would have to be determined experimentally.

The folded dipole terminating element would be designed in the usual manner adopted for these elements.

Series phase arrays, either in their original or modified form, are suitable for both vertical or horizontal polarisation.

The writer has a 4 element "Lenfo" modified as outlined, operating on Channel 2 and quite good results have been obtained at this location—100 miles, as the crow flies, from Mt. Dandenong. However, due to lack of equipment it is not known if optimum performance has been achieved.

The elements are constructed of $\frac{1}{4}$ " o.d. dural tubing and the quarter wave sections use 0.104" copper wire spaced

$41/64$ " centre to centre. Aluminium wire of a suitable size and spacing for 300 ohms impedance would save a lot of weight. For any other size of conductor used in the 300 ohm quarter wave lines, correct centre to centre spacing can be obtained simply by multiplying the conductor diameter by 6.2. But for reasons that will be pointed out later, a conductor size that will give large spacing should be avoided, also close spacing of small diameter conductors will usually require more spacers and these of course will lower the value of K.

The usual method of mounting the elements of such an array is to use a wide wooden boom and support the elements on stand-off insulators. This is both heavy and has quite a large wind resistance. The array at this location uses twin dural tubes for the boom, arranged as shown in Fig. 6.

The use of twin tubes is to prevent sag. The same effect could be obtained by using bracing tubes at an angle between the boom and the mast. However, the array would be more difficult to handle before mounting.

The separation between the quarter wave line sections on the top of the boom is about $2\frac{1}{2}$ ", and the lines are mounted symmetrically so that they are balanced to ground. The separation of $2\frac{1}{2}$ " is ample as it represents about four times the centre to centre spacing of the line. It has been found that when the separation between a flat shield is equal to the centre to centre spacing of the line, the characteristic impedance is only lowered about 25 ohms, so in

the above case any reduction could be neglected. The propagation constant K and therefore the length of the line is not altered by the presence of the metallic boom, even when the spacing is equal to the centre to centre spacing; this is because as the distributed cap-

Finally, the centre of the folded dipole may be earthed as the whole array is balanced to earth. The writer used the method shown in Fig. 8.

Well, that's the story as far as I can take it. So who is willing to carry on from here?

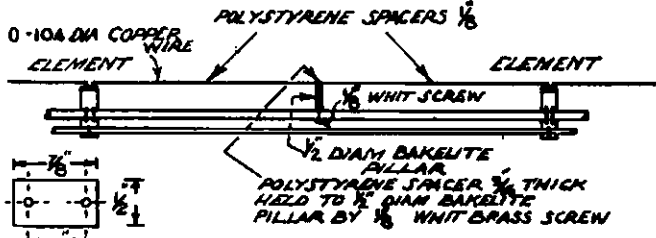


FIG 7
SUPPORT FOR PHASING LINES

acity is increased, the inductance is reduced due to eddy currents induced in the boom. As the propagation constant is determined by the product of inductance and capacity, and as this product remains constant, so the value of K is constant. (See "Principles of Radar" by M.I.T. Radar School, second edition, chapter vii. p. 7-9 and 7-10 [McGraw-Hill Book Company].)

When a wooden boom is used and the quarter wave sections are mounted close to it, both the propagation constant K and the impedance will be made lower because of the added capacity due to the dielectric constant of the wooden boom. Also the dielectric constant of the wooden boom will vary with the weather.

The quarter wave lines are supported as shown in Fig. 7.

APPENDIX

Formulae recommended by the writer:-

- (1) For length round each half loop:
$$\frac{492 \times 0.95}{\text{Freq. Mc.}} \text{ feet}$$
- (2) For length of quarter wave phasing lines:
$$\frac{246 \times 0.98}{\text{Freq. Mc.}} \text{ feet}$$
- (3) For folded dipole. Length around complete loop:
$$\frac{984 \times 0.95}{\text{Freq. Mc.}} \text{ feet}$$

Centre to centre spacing of conductors comprising the folded dipole about 3".

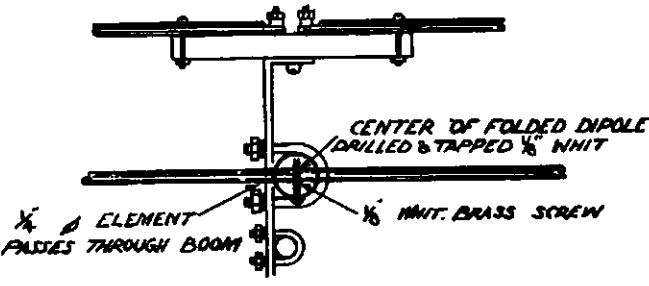


FIG 8
It will be noticed here that the plane of the conductors is vertical whereas in the other elements it is horizontal.

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Mo.	E. AUSTRALIA	W. EUROPE	S.E.	Me.
0	2	4	6	8 10 12 14 16 18 20 22 24
45	GMT			
28	-----			
21	-----			
14	-----			
7	-----			
0	2	4	6	8 10 12 14 16 18 20 22 24
45	E. AUSTRALIA - W. EUROPE L.E.			
28	-----			
21	-----			
14	-----			
7	-----			
0	2	4	6	8 10 12 14 16 18 20 22 24
45	E. AUSTRALIA - MEDITERRANEAN			
28	-----			
21	-----			
14	-----			
7	-----			
0	2	4	6	8 10 12 14 16 18 20 22 24
45	E. AUSTRALIA - N.W. U.S.A.			
28	-----			
21	-----			
14	-----			
7	-----			
0	2	4	6	8 10 12 14 16 18 20 22 24
45	E. AUSTRALIA - N.E. U.S.A. S.E.			
28	-----			
21	-----			
14	-----			
7	-----			
0	2	4	6	8 10 12 14 16 18 20 22 24
45	E. AUSTRALIA - N.E. U.S.A. L.E.			
28	-----			
21	-----			
14	-----			
7	-----			
0	2	4	6	8 10 12 14 16 18 20 22 24
45	E. AUSTRALIA - CENTRAL AMERICA			
28	-----			
21	-----			
14	-----			
7	-----			
0	2	4	6	8 10 12 14 16 18 20 22 24
45	E. AUSTRALIA - S. AFRICA			
28	-----			
21	-----			
14	-----			
7	-----			
0	2	4	6	8 10 12 14 16 18 20 22 24
45	E. AUSTRALIA - FAR EAST			
28	-----			
21	-----			
14	-----			
7	-----			
0	2	4	6	8 10 12 14 16 18 20 22 24
45	W. AUSTRALIA - W. EUROPE			
28	-----			
21	-----			
14	-----			
7	-----			
0	2	4	6	8 10 12 14 16 18 20 22 24
45	W. AUSTRALIA - N.W. U.S.A.			
28	-----			
21	-----			
14	-----			
7	-----			
0	2	4	6	8 10 12 14 16 18 20 22 24
45	W. AUSTRALIA - N.E. U.S.A.			
28	-----			
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0	2	4	6	8 10 12 14 16 18 20 22 24
45	W. AUSTRALIA - S. AFRICA			
28	-----			
21	-----			
14	-----			
7	-----			
0	2	4	6	8 10 12 14 16 18 20 22 24
45	W. AUSTRALIA - FAR EAST			
28	-----			
21	-----			
14	-----			
7	-----			

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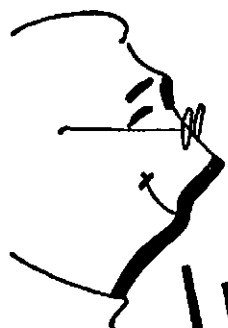
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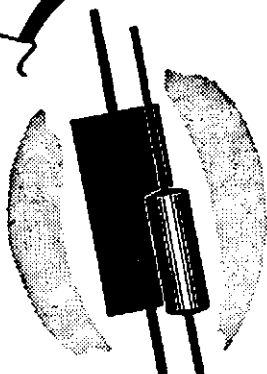
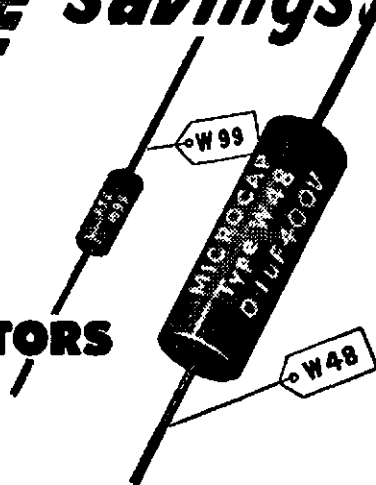
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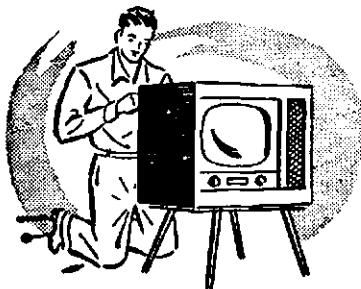


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Adjustment Procedures for VHF Converters

Hints on Attaining Optimum Performance with Simple Test Equipment

EUGENE C. FRYE, K0DJP

MANY newcomers to the Amateur v.h.f. field feel well able to build and wire their own converters. Most designs are simple enough, mechanically and electrically, but adjustment for peak performance is quite another matter. This article describes test procedures that can be carried through with only the simpler items of test equipment. The material presented is sufficiently general to be applicable to most v.h.f. converters described today.

Anyone who intends to build or even repair and adjust his own gear should have some test equipment. The items recommended here are not of the complex or expensive variety. They should be a part of the station equipment; as necessary as the transmitter, receiver or antenna system. First we need some form of test meter, either vacuum-tube voltmeter or volt-ohmmeter. The v.t.v.m. is preferable, as it is more versatile, but the latter will do if its meter is the sensitive 20,000 ohms-per-volt type. A grid-dip meter (g.d.o.) is a must for determining the resonant frequency of tuned circuits. A noise generator is a necessity for receiver work. The crystal-diode variety¹ is so simple and inexpensive that it is foolhardy to try to do without one. Let's see how these tools are used.

LOCAL OSCILLATOR ADJUSTMENTS

If you have not already done so, it will facilitate converter adjustment procedure if you install a "looker point" in the grid circuit of the mixer stage. This can be a 1 megohm resistor connected between the mixer grid and a test jack or feed-through pin, as shown in Fig. 1. This point should be accessible from the top of the chassis. The d.c. voltage read here will be useful for setting the oscillator injection level and for alignment of the r.f. stages. Following initial alignment, subsequent checks can be made conveniently at this point without removing the converter bottom plate or other shielding.

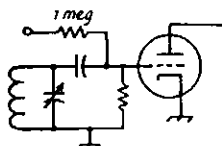


Fig. 1.—A test point for measuring injection bias is a great convenience in making converter adjustments. D.c. voltage may be read with vacuum-tube voltmeter or sensitive volt-ohmmeter.

Before proceeding with actual alignment it is a good idea to adjust all tuned circuits approximately to the desired resonant frequencies with the grid dip meter. This can be done with the converter inoperative, but with the heaters on.

The next step should be to get the oscillator working properly. If it is a tunable oscillator its frequency range should be checked and the dial calibrated roughly. If it is a crystal oscillator be sure that the frequency is right, and that it is controlled by the crystal. This can be done by listening to the oscillator note in a communications receiver. The frequency should vary only slightly, if at all, when the oscillator is tuned, or when a metallic object is placed near the tuned circuit. If the crystal frequency is out of range of the receiver this check will have to wait until the mixer is put into operation. Then a locally generated signal can be tuned in for the stability check. This signal could be from the transmitter exciter or other stable source. Some grid-dip oscillators are sufficiently stable for this purpose.

If the converter oscillator is not stable it is usually because of too much feedback. If no oscillation develops the feedback is too low, assuming, of course, that the crystal is in working condition. Most converter oscillators use overtone crystals or oscillator circuits that are intended to make the crystal work on one of its overtones. Overtone oscillator feedback adjustments have been discussed thoroughly in "QST"².

If the converter has one or more multiplier stages following the crystal oscillator, these should now be checked to see that they are on the desired frequency. Use the g.d.o. as a wavemeter for this. The circuits may also be peaked for maximum output with the g.d.o. as an indicator, though the d.c. voltage at the mixer test point is the best indication, once it is determined that the stages are on the desired frequencies. Coupling from the oscillator is usually adjusted to give about minus 2 to 3 volts injection bias at the mixer grid, as measured with a v.t.v.m.

R.F. AMPLIFIER RESPONSE

Once the injection level is set, the response of the r.f. stage or stages can be set up using the g.d.o. as a signal generator and the mixer test point as a signal detector. The g.d.o. can be connected to the antenna input terminal through a piece of transmission line about a half wavelength long. This can be co-ax or twin-lead, depending on the converter input circuit design. At the g.d.o. end of the line there should be a small pick-up loop, loaded with a half-watt carbon resistor of approximately the value of the line impedance. The loop can be made from the resistor leads, in fact.

Set the g.d.o. at approximately the middle of the desired converter operating range. Remove plate voltage from the converter oscillator and multiplier stages, so that only the voltage developed at the mixer grid by the amplified signal from the g.d.o. will be read.

Couple the loop to the g.d.o. coil and adjust its position so that minus 1 to 2 volts is read at the test point. Tune the r.f. circuits for the desired pass-band characteristics.

R.F. OSCILLATION CHECKS

Before making final adjustments, check for oscillation in the r.f. stages. A simple test is to remove plate voltage from the oscillator and from the r.f. tube immediately preceding the mixer. Read the negative contact potential at the test point. Now apply the plate voltage to the r.f. stage again, but leave the oscillator disabled and the g.d.o. off. If the reading goes more negative when the r.f. stages are working, oscillation is present in the r.f. portion of the converter.

Elimination of r.f. oscillation can sometimes be quite a problem. If the r.f. amplifier is a cascode, it must first be determined which part of the amplifier is oscillating. A quick check on this is to read the amplifier plate current, and note if it changes as any circuit is tuned, or touched with a metallic object or the fingers. Usually oscillation in a cascode amplifier can be corrected by adjustment of the neutralizing coil, but there can be oscillation in the grounded-grid or second half of the stage. The latter is almost certainly due to improper grounding. Make ground connections separately, and never bypass to the centre ring of the socket. Do not tie in ground connections from several points through a common wire to a single chassis point.

If the r.f. amplifier is a pentode, isolation of the grid and plate circuits may be important. This can be accomplished by a shield across the tube socket, but proper orientation of the coils may make this unnecessary. Mount the plate and grid coils as far as possible from each other, and in perpendicular planes to prevent inductive coupling between them. Observation of the d.c. voltage at the mixer test point (with oscillator off) will show whether corrective steps taken are in the right direction. Reduction and eventual elimination of voltage developed by r.f. oscillation is the condition to work for.

ADJUSTING DOUBLE-TUNED CIRCUITS

R.f. bandpass adjustments may now be made. For this, be sure to set the signal level below the saturation point, as observed at the test point. Many current converter designs use double-tuned circuits, as they provide better attenuation of signals from outside the desired pass-band than single-tuned circuits. Unfortunately, they are notoriously difficult to align properly, unless a sweep generator and oscilloscope are available. The procedures outlined below will give satisfactory results without these expensive tools.

The simplest way of using an ordinary signal generator (or your g.d.o.) is

¹ Reprinted from "QST", October 1953.
² Tilton, "Noise Generators—Their Uses and Limitations", "QST", July 1953, p. 10.

² Tilton, "Overtone Crystals—How and Where to Use Them", "QST", March 1953, p. 16.

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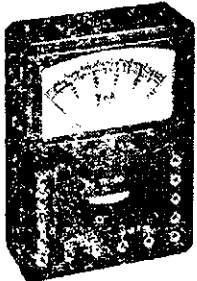
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the damping method. Set the signal generator or g.d.o. at the middle of the desired pass-band. Load one of the double-tuned circuits by connecting a carbon resistor of about 1000 ohms directly across it. The voltage read at the test point will drop considerably, and it may be necessary to increase the coupling to the signal source to provide a usable indication. Tune the other circuit for maximum indication at the test point. Remove the damping resistor and check the shape of the response curve by varying the signal generator across the converter tuning range and noting the voltage at the test point. It should resemble the curve of Fig. 2.

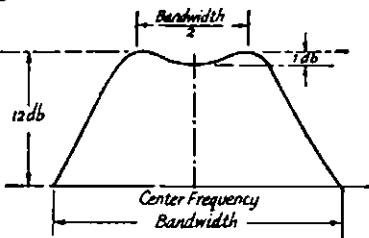


Fig. 2.—Typical response curve of a converter using double-tuned circuits. Essentially flat top and steep sides are desirable characteristics.

The chances are that the desired pass-band shape and bandwidth will not be realised with the first adjustment. In general, increasing the coupling while maintaining constant circuit Q will increase the bandwidth and also make the "horns" at the edges of the pass-band sharper. Increasing the loaded Q of one or both of the tuned circuits will increase the sharpness and height of the horns without materially affecting their frequencies. The loaded Q of the tuned circuits can be changed by varying the L/C ratio at the desired frequency. With constant loading, decreasing the capacitance and increasing the inductance will result in lower loaded Q , and vice-versa. Damping resistors can be used across the coils, if the minimum usable circuit capacitance results in too high a loaded Q (too narrow a passband).

Because changes in coupling or loading will often change the tuning of the circuits, it is a good idea to re-tune them after every adjustment of the coupling. It will also be found that coupling and Q adjustments are interacting. Should the passband shape tend to be tilted badly after adjustment by the damping method, it is an indication either that regeneration is present or that there is undesired coupling between the two tuned circuits. If the ratio of bandwidth to centre frequency is over 10 per cent., one of the stages will probably have to be detuned slightly to eliminate tilt in the slope of the passband.

An alternative procedure for aligning double-tuned circuits is to detune one circuit considerably, tune the second to maximum response, damp the second, and tune the first to maximum. Remove the damping resistor when this is completed.

After the r.f. circuits are aligned the local oscillator injection should be re-checked, as adjustment of the tuned circuits, particularly the one in the mixer grid, will usually change the amount of injection bias observed at the test point.

I.F. CIRCUITS

If necessary, the i.f. circuits of the converter can be adjusted without connecting the converter to a communication receiver. To do this, terminate the converter output with a resistance equal to the impedance of the line used between the converter and the receiver. Connect the r.f. probe of the v.t.v.m. across this resistor. With the converter operating normally, use the g.d.o. as a signal generator in the manner outlined for r.f. bandpass adjustment. While slowly tuning the g.d.o. across the r.f. passband, adjust the i.f. circuits to give the desired response.

In making these adjustments, be sure that the g.d.o. output does not saturate the converter. If the converter output is too low to give a usable indication by this method, or if a v.t.v.m. is not available, the converter will have to be connected to a receiver and the S meter used as an output indicator.

NOISE FIGURE ADJUSTMENTS

It cannot be too strongly emphasised that the simplest, easiest and most accurate method of realising the ultimate sensitivity of a v.h.f. converter is the use of a noise generator. If you do not already have one of these handy devices, it will pay you to stop at this point and build one. Several excellent noise generator designs have appeared in "QST", and even the simplest—the crystal diode type—is a highly useful tool.¹

An accessory to the noise generator is a good audio voltmeter. The a.c. scales of a v.t.v.m. can be used, but these are generally peak indicating devices, and because of the character of the receiver noise the needle will bounce in an annoying fashion. Ideally, a true square-law or r.m.s. detector is required. However, a satisfactory device for this service is an average type detector, with some smoothing. Such a detector, suitable for connection to a phone jack or across the speaker terminals, is shown in Fig. 3. The transformer used in the detector is not critical. The one used had a 400-ohm primary and a 2000-ohm secondary. Some of the small transistor audio transformers on the market work very well. Popular types of volt-ohmmeters have average-type rectifiers for use on their audio output scales. These are satisfactory for use as audio indicators in noise generator work.

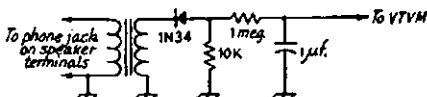


Fig. 3—An audio detector arrangement for use in making noise-figure measurements.

In making noise generator tests it is important that the a.v.c. be disabled, and that both the audio and r.f. gain controls be set so that there is no tendency to saturate. Generally speaking, the audio gain should be run at a fairly high setting, and the r.f. gain should be turned up only to the point that will give a usable indication on the output indicator. The b.f.o. may be on or off, but all tests should be made with it in the position in which the work was started. The same may be said of the noise limiter. If you are

working in a completely quiet location the limiter should be left off, but more reliable results can be obtained in noisy locations if the limiter is used. A moderate amount of noise limiting will have no effect on the accuracy of noise generator measurements, provided that the setting of the limiter is not changed during the work.

With the noise generator connected, but turned off, set the audio and r.f. gain controls as described above to give any convenient reference reading on the output indicator. Now turn on the noise generator and adjust its output to give a 3 db. increase in the output indication. Unless you have a db. scale, this will require an increase of 1.414 times. Adjustments should now be made on the converter to see if the 3 db. increase in noise indication can be obtained at a lower setting of the noise generator. Any adjustment that works in this direction has improved (lowered) the receiver noise figure.

In converters having one or more r.f. stages, adjustment of the mixer should have no effect on the noise figure, except in the case of very large changes in settings. The gain and output may vary considerably as circuits are adjusted, or the injection level is changed, but the noise figure should remain the same. If small changes in mixer adjustment do affect the noise figure, it is proof that the r.f. portion of the converter is not working as it should.

Except in the case of the plate circuit of a first grounded-grid r.f. amplifier, adjustment of circuits other than the input circuit and the neutralisation of the first stage will have little or no effect on the noise figure. This holds so long as the gain of the first stage is sufficient to suppress noise contributions of succeeding stages. The neutralisation of the first stage and the adjustment of the input circuit will have little effect on the over-all response of the converter, so the pass-band adjustments outlined earlier can be done first. They will require only minor touching up, if anything at all, when the noise figure has been adjusted to optimum. Do not be surprised if lowest noise figure is obtained at settings of the first circuits that result in somewhat less than maximum gain. This effect is to be expected in circuits using neutralised triodes, particularly. In these, the loading and tuning the input circuit for best noise figure will not coincide with maximum gain setting of this circuit.

In some cases it may be noticed that the r.f. stages tend to oscillate when the converter input is not loaded properly. This is usually an indication of imperfect neutralisation of the first stage, but if the antenna circuit is properly matched to its transmission line, and the coupling to the input circuit is adjusted for best noise figure, oscillation with the antenna removed may not be harmful. If the antenna system has a high standing-wave ratio, however, more careful neutralisation may be necessary to achieve satisfactory performance and freedom from oscillation. If extensive work is to be done using a poorly matched antenna system, it may be advisable to adjust the converter input circuit for that antenna. This can only

(Continued on Page 15)

FREEDOM OF THE AIR!*

CONFESSION OF A CONVERT

S. G. MERCER, G2DPY

This is, in its way, as important as any technical or DX operating article ever published in "Short Wave Magazine." All who take Amateur Radio seriously, or perhaps too seriously, should read it—and break their own shackles.—Editor.

IT suddenly came to me that I did not at that moment know what to do with myself! Since 1948 this situation had never arisen and it warranted, I felt, some serious introspection. The time was 0900—on 21 Mc. I had heard some really good Pacific DX coming through, and on 14 Mc. the conditions were similar. I had, under my control, 100 watts of phone or c.w. efficiently channelled into a DX aerial system. The receiver was well proven. Absolutely nothing to stop me spending an hour or two with my hitherto all-absorbing DX'ing. But the inclination was just not there!

Ten years. What was there to show for it? I tried to catalogue my thoughts into sensible order. Yes—about 400 square feet of roof space packed with "unmissable bargains"; half-completed rigs; completed rigs that just never turned out as expected; pieces of gear that were of little use when originally acquired, and of still less use to anyone now in any conceivable event. In fact, about £50 worth—well, worth? No, a better description would be, "original cost" of sundry equipment that would (and might as well) lie up among the rafters for ever and a day.

My eyes and thoughts then turned to the unsightly stack of large cardboard boxes containing some fifteen thousand cards from all over the world. Surely these would arouse some enthusiasm—but no, they merely brought to mind laborious "catching up," frenzied posting and the artifices that went into obtaining some of the rare ones. Two hundred odd countries confirmed these cards for DXCC on four bands. Cards for W.A.Z., A.B.C., D.E.F., G.H.K., etc., etc.—heck, what did it mean to me! Who looked at them? Over the past ten years not more than a dozen people had ever professed any real interest in them. My fellow-Amateurs were either secretly contemptuous or envious, according to their status, when they saw them. In fact, a huge heap of pretty postcards that had now become so out of hand that they were not even in any kind of order or system, being heaped any-old-how into those ugly cardboard boxes. No doubt the best thing would be to stow them away in the roof for some years until the children grew up, when they could re-discover them and remove the stamps.

Now—to look with new vision out of the window that has shed light on my operating table for so long. A rotary beam for ten metres sitting on a shaky pole; two equally shaky 40-foot masts; a mass of wires spewing across the back garden, so numerous that even now I had to stop and think what purpose each snarling tendon served.

REALISATION—

My eyes shut in inward reflection on other things. My three boys. "Dad, come and show me how to get this tyre on." "Hey, Dad, coming down for a swim?" "Dad, the circus is here today; Mummy says we can go if you will take us." Horror! To think of all the simple childlike requests that I had answered with a snorted "Shurrup! I am listening to someone," or some similar abrupt refusal. I could not imagine how the children could even bother to speak to me now, after such treatment that had been handed out to them. The XYL. However could I have thought that bringing her in on a distant phone contact could compensate for the once-weekly visit to the cinema or theatre we used to have. When had I in recent years ever got the family together and said, "Away we go today for a real day out together?"

What had happened to my sense of values? I saw, for the first time in years, the river meandering its leisurely course outside my window, with all the wild life on it. The unruffled water shone with invitation. Things that had for a long time escaped my observation. Just then, Betty looked in at the door of the radio room; I noticed the desperate look of resignation on her face after confirming that I was in the usual position! I took in the dilapidated appearance of the paper, ceilings, paint—all neglected responsibilities. The children came in, not even bothering to look in to see me to say hello. What was the use when they would at most be rewarded with a grunt!

The savoury breakfast aroma from the kitchen stirred new life in me and—I had an appetite! I had not regarded meal-times for years as anything but a darned nuisance that interfered with my QSOs.

I had awakened to the realisation that a complete revision of my life was necessary. First, I would keep the rig on the air and use it only on such occasions when it was not going to interfere with any other person's activities. I would not get hot under the collar any more, whether or not there was some expedition belting through at S8, or even S2! I would use the rig in a friendly manner and cultivate some of those chaps that I had brushed off with "Won't hold u nw om—cul 73 VA." Betty would be taken out at least once a week, with no strings! All reasonable requests from the boys would be dealt with; I would see them to bed each night, with a fatherly word. I would take walks with the family, or by myself, and catch up with things that I had almost forgotten. I would reply to QSLs as a courtesy but otherwise would not send them out. I would be content with modest power and a less all-embracing and unsightly aerial system. In short, I would make my hobby into a hobby and not an all-enveloping, inconsiderate tyrant.

—AND THE RESULT

These were my thoughts, and what, might you ask, actually came out of it all? I will tell you.

I now have a medium-powered rig and a medium-sized aerial system. I go on the air during some weeks as much as twelve hours; other weeks not at all. In the summer my main activities are out of doors and time spent on the air is correspondingly reduced. I reply to cards received but do not send them unless requested. (There must be thousands who, though they may or may not admit it, kept going a QSL system similar to that which I maintained and which involved many people in extra work and expense absolutely unnecessarily.) When the gales lash around my garden I do not have to rush out trying to save over-ambitious masts. The house is tidier and cleaner. I have found that the children are really good lads who do appreciate having Dad around sometimes. My XYL appears as a new woman and is still wondering whatever suddenly happened! I enjoy my home, my hobby and life in general.

The moral is obvious: Do not let yourself become a slave to your hobby. This Amateur Radio is the grandest spare-time occupation that has ever been known. Keep it like that. Treat it with consideration and take it in doses that will not draw you too much out of ordinary everyday life, and it (and you) will be the more appreciated. It nearly made me into an "eccentric," to say the least.

I hope that these reflections will make some who read them think a little and realise that there is a big world outside Amateur Radio worthy of attention, and that there are people round you who are not interested in it. The watchword, as in most things, is—**Moderation.**

ANY IDEAS WORTH £5?

Federal Executive is searching for a new design for the D.X.C.C. Certificate and will pay £5 for a suitable idea.

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Send as many entries as you like before the 15th March. Do not forget to put your name and address on the back of each sheet.

The £5 will be paid to the entry which Federal Executive uses for the certificate.

All entries to be forwarded to the Federal Secretary, Box 2611W, G.P.O., Melbourne, C.I., Vic.

Be in it. Your idea might be worth £5!

* Reprinted from "The Short Wave Magazine," August, 1958.

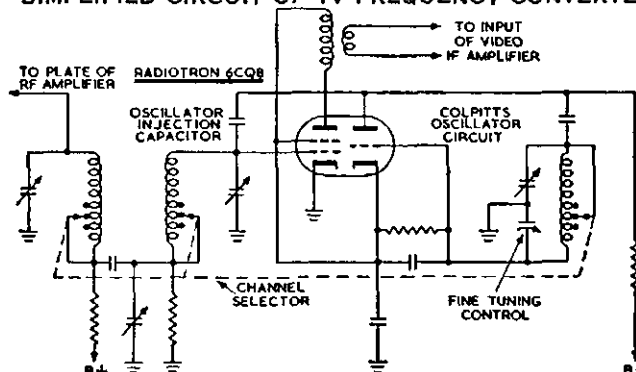
RADIOTRON TELEVISION VALVE SERIES

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The desirable requirements for TV frequency converters and if amplifiers can be summarised as follows:—

- transconductance should be high to provide as much gain as possible in the low-impedance, wide-band circuits used in a TV receiver.
- the equivalent noise resistance should be low for good signal to noise ratio in the frequency converter stage.
- there should be little feed-through from the oscillator to the rf stage to keep the oscillator radiation to a minimum.
- the oscillator section of the converter should have good frequency stability, and possess characteristics which make oscillation of the right amplitude easy to obtain.
- the application of a variable control voltage to the grid should not have any appreciable effect on the input impedance to the valve when used as an if amplifier.

SIMPLIFIED CIRCUIT OF TV FREQUENCY CONVERTER



Theory predicts that the higher the transconductance (g_m) and the sharper the cutoff characteristic in the mixer section of a converter, the higher will be the conversion transconductance (g_c). The lower the bias required for plate current cutoff, the smaller the oscillator injection voltage that is required for maximum g_c , and hence the lower is the oscillation radiation. Multigrid types of converters, i.e. those in which the signal and oscillator voltages are applied to separate grids, can be shown to be noisier and to have lower g_c at high frequencies than the types in which both voltages are applied to the one grid.

For the oscillator the most satisfactory operation is obtained by using a triode of high g_m and medium amplification factor (μ) in a circuit which will provide good frequency stability. The Colpitts type is often used for this purpose.

The series connection of the oscillator and mixer sections of the converter across the B+ supply offers the advantages of a reduction in current drain and more constant oscillator injection over the frequency range, due to the current-stabilising effect of this type of connection.

To maintain a desired relationship between transconductance and input impedance for valves used in the gain controlled stages of if amplifiers an unbypassed cathode resistor is commonly used; the use in if amplifiers of valves with internally-connected suppressors then presents difficulties in obtaining satisfactory stability. Valves featuring a tetrode construction avoid this complication.

The Radiotron 6CQ8, which has been especially designed to meet the requirements mentioned above, features a plate current characteristic with a sharp knee at relatively low plate voltages and mixer operation with good linearity in the frequency converter stage in the TV receiver. The tetrode construction of the 6CQ8 avoids the difficulties in stability outlined above, and together with the other characteristics of this valve, allows high performance to be obtained as a TV if amplifier. The tetrode section is also suitable for use as a sound if amplifier and agc amplifier. The triode is suitable for use as a sync. separator and af amplifier, and as an af output stage where only moderate output is required. The triode may also be used as a cathode follower driven by the tetrode section in the video amplifier stage.

6CQ8

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- PIN 4: HEATER
- PIN 5: HEATER
- PIN 6: TETRODE PLATE
- PIN 7: TETRODE CATHODE, INTERNAL SHIELD
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AND HIS STATION**

**BILL HEHIR*
VK3RE**

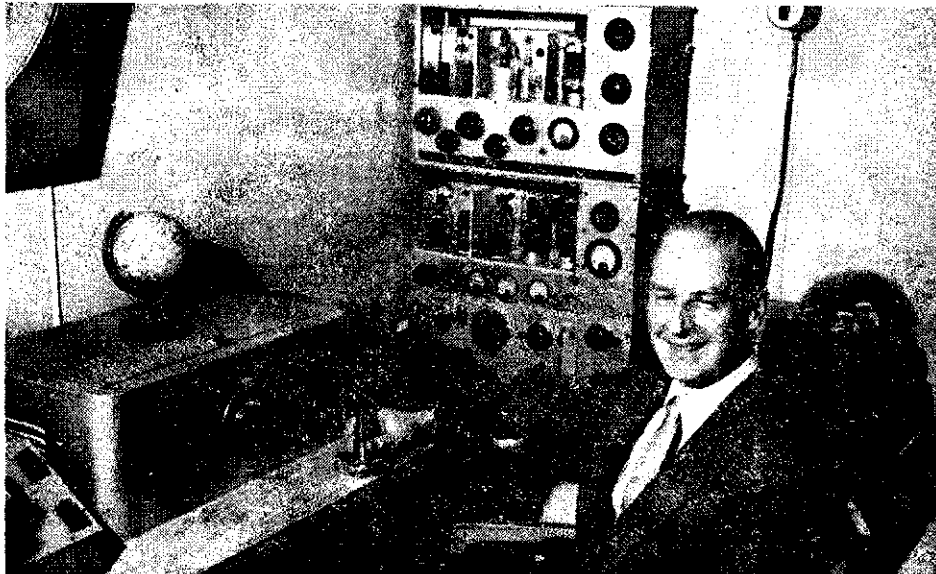
YOU can tell Bill Hehir (VK3RE, Hamilton) is a Radio Ham a mile away—you cannot miss those towering beams atop his house which soar 105 feet.

And they're all his own work. "Just pushed them up," he'll tell you modestly. "Built them in my lounge room"—and he did!

He built the lounge room, too. In fact Bill, a radio and t.v. engineer in Hamilton, built his whole house—32 squares in 12,000 hours.

And he was one Radio Ham who made sure he'd have his own radio room—he built his home AROUND his radio gear.

There wasn't a word of complaint from his wife, Sheila, either. "Bill was so keen on radio that there was only one thing for me to do—get interested in it myself." And she has—in fact she spends a lot of her time speaking over the air to friends in America.

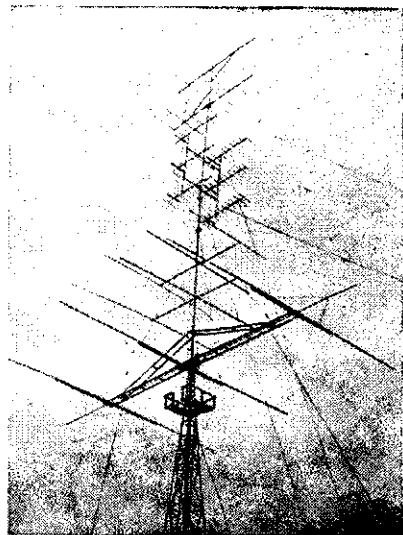


The 105 foot beam which towers over Bill's home consists of 3 element wide spaced beams on 20, 15 and 10, with a 40 metre dipole running along the 20 metre beam boom. As Hamilton is 200 air miles from Melbourne t.v. towers, Bill has erected above his Ham beams a 78 element antenna for Channels 7 and 9 and a 22 element for Channel 2.

For his Hi-Fi equipment the loud speaker console contains nine speakers—four for the lower tones, four for the middle register, and one tweeter.

Bill must be at least one of the hamiest hams that am.

From Neil Town (VK3ANK), who called on Bill passing through Hamilton recently



Bill got his licence in 1934 and has lived in Hamilton for the past 10 years. Before that he flew more than 4,000 hours with Ansett Airways.

Bill even went to the trouble to build his own 21-tube double conversion f.m./a.m. receiver. His transmitters (see picture) are a pair of 211s in push-pull for 80, 40 and 20, and a 813 for 10 and 15 metres. Both his transmitters are modulated by a pair of 25-year-old 2443Ns in class AB2. The maximum voltage Bill uses in the shack is 600 volts, with selenium rectifiers throughout.

* Kent Road, Hamilton, Vic.

**ADJUSTMENT PROCEDURES
FOR V.H.F. CONVERTERS**

(Continued from Page 11)

be done by listening to a signal, with the antenna connected, in the manner recently outlined by W8WXV.³

The importance of fairly high r.f. skirt selectivity in achieving accurate noise figure readings is not generally appreciated. If the converter passband includes portions of the image frequencies (which may easily happen when a low i.f. is used) the indicated noise figure will be lower than the true noise figure of the converter and actual receiver performance will be degraded.⁴ Thus, particularly where double-tuned circuits are used, it is desirable to make at least preliminary adjustment of the converter passband, as already described, before attempting noise figure work.

As a final step, the r.f. and i.f. passband adjustments can be gone over, as minor changes will have no effect on the noise figure, so long as the first stage circuits are not altered. If the converter has an i.f. gain control it should be set so that the converter adds 10 to 20 db. of noise to the receiver output over that with the converter turned off.

The work on the converter will then be completed, and the experimenter can rest assured that he has made his handiwork perform to the fullest extent of its capabilities. It is hoped that the measures detailed here will help many workers in the v.h.f. field to achieve better over-all receiving results, and more important, to develop a better feel for the adjustment of their equipment.

³ Burson, "Hints on 144 Mc. Converter Design and Adjustment", "QST", July 1959, p. 44.
⁴ Weeks, "Image Ratio and Noise Figure" (Technical Correspondence), "QST", February 1955, p. 132.

50 Mc. W.A.S.

Call	Cer. Add. No. Cntr.	Call	Cer. Add. No. Cntr.
VK2WJ	13 4	VK2AEZ	10 1
VK3PG	5 3	VK3XA	11 1
VK2VW	9 3	VK3GM	12 1
VK4RY	2 2	VK3ACL	14 1
VK4HR	4 2	VK3ZD	16 1
VK5LC	1 1	VK3HO	17 1
VK6DW	3 1	VK2ABC	8
VK3RR	6 1	VK2WH	15
VK3HT	7 1		

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Loran C.R.O. Indicator—Model AN/APN-4

J. J. KELLEHER,* VK3ZAJ

A LARGE quantity of these instruments is available from disposals sources and when modified have many uses around the Ham shack. The following notes and the circuit have been extracted from "Loran, Long Range Navigation," by Pierce McKenzie and Woodward.

The notes have been abridged to give the details of the operation of the instrument as received, and it is hoped that these notes, along with the circuit diagram, will supply the essential details to establish a starting point from which conversion to some other type of instrument may be commenced.

This model has been produced in greater quantity and was more extensively used during World War II. than any other Loran equipment.

The indicator consists of the crystal oscillator, dividers, delay and deflecting circuits for the 5 inch cathode ray tube.

FUNCTIONAL DESCRIPTION

There are six dividers, the maximum dividing ratio is 5:1. The output pulse from the last divider is fed back to the second and third dividers to control the specific recurrence rate.

* 3 Paine Street, Newport, W.15, Vic.

Pulses derived from the crystal oscillator and from the first, third and fourth dividers are mixed and applied to the vertical plate (along with the trace separation and pedestals) of the cathode ray tube as calibration markers at time intervals of 10, 50, 500 and 2,500 μ sec.

The complete schematic diagrams of the Indicator are shown on the opposite page.

MANIPULATION

In making a time difference measurement, the operator must manipulate the r.f. channel, basic P.R.R. and selector switches, the gain, amplitude, balance and frequency controls, the left-right and sweep speed switches, the coarse and fine B— delay controls as well as the usual oscilloscope controls.

When the slow trace oscilloscope pattern is displayed the left-right moves the signals rapidly along the trace by momentarily changing the feed back. When one of the fast trace patterns is displayed the switch moves the signals slowly by changing the oscillator frequency.

The eight-position sweep speed switch is so designed that in making a time difference measurement the operator rotates the switch in numerical sequence from position 1 to 7.

The first four positions show the received signals and are used for positioning and matching the signals. On the first position the normal slow trace pattern is displayed.

The patterns of the second and third positions are fast traces of 750 μ sec. and 200 μ sec. respectively.

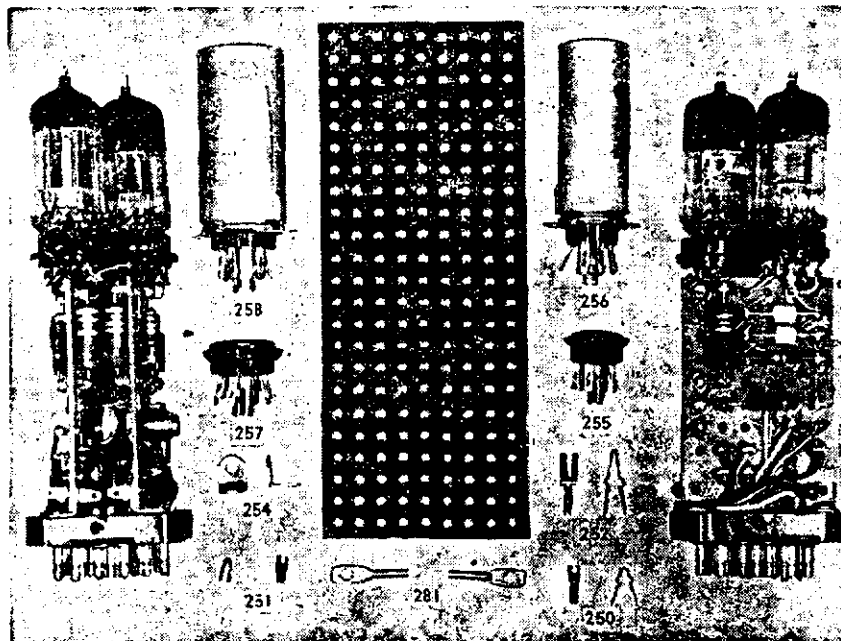
For the final matching of the pulses the separation of the 200 μ sec. traces is eliminated in position 4.

Positions 5, 6 and 7 are used for measuring the time difference between the received signals. For this purpose 10, 50, 500 and 2,500 μ sec. calibration markers are displayed on these three positions.

The pattern on position 5 is two 200 μ sec. traces with markers; on position 6 it is two 750 μ sec. traces with markers, and on position 7 it is two slow traces with pedestals and markers. On position 8, two 200 μ sec. traces with stair-step pattern of the third divider are presented for checking the feed back.

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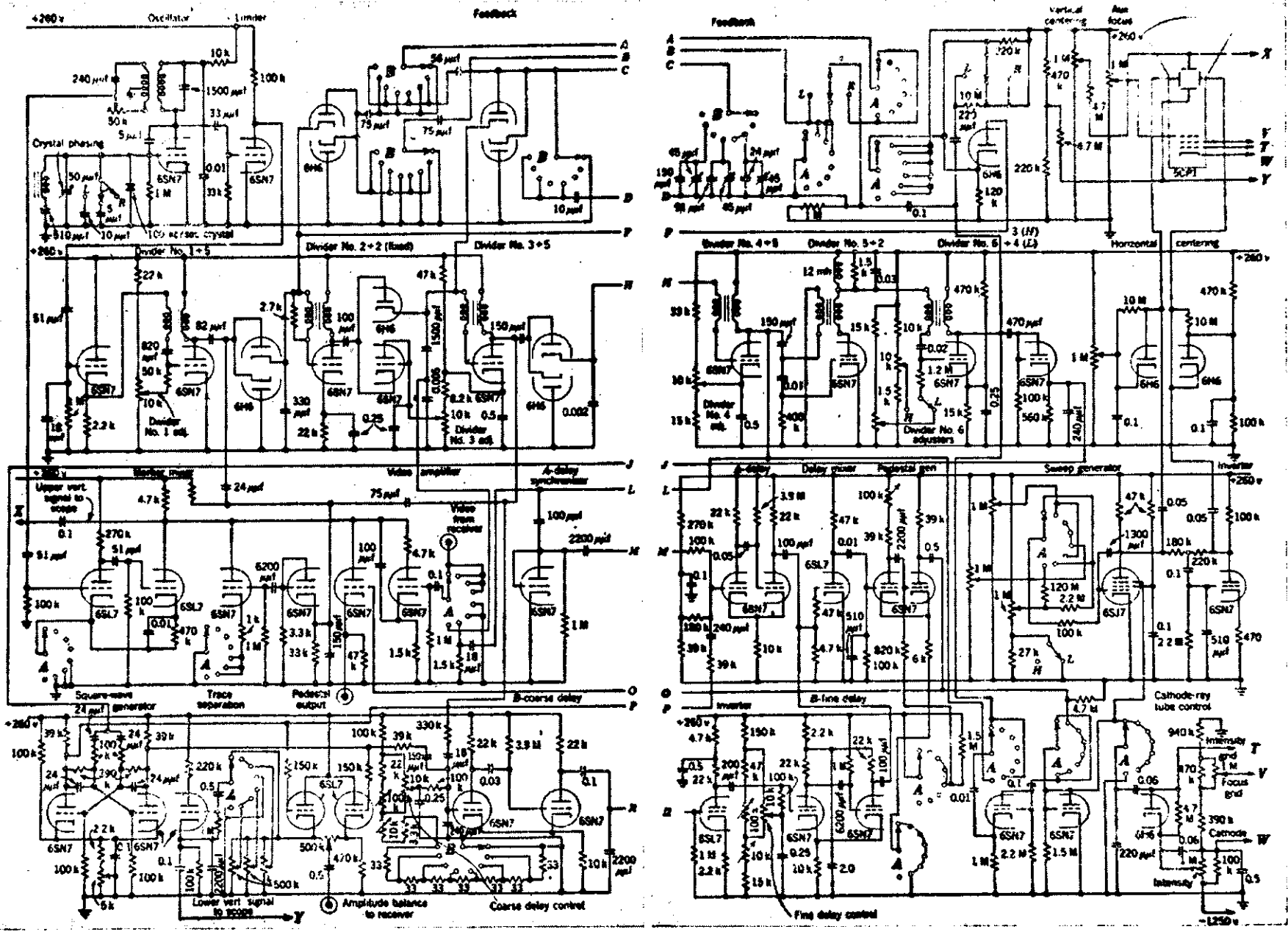
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Schematic diagram of Loran C.R.O. Indicator—Model AN/APN-4.

DX

John C. Pinnell, VK2ZR
15 Summit Avenue,
Earlwood, N.S.W.

Frank 2QL has now handed over to me the duties of compiling these notes. My first effort has driven home just how much work he has put into this page. Frank also manages the VK2 QSL Bureau and is making a mighty fine job of it. These two W.I.A. activities were cutting too deeply into his spare time so I agreed to help him out by taking over this page. I feel sure all who are interested in DX will join with me in thanking him for his untiring effort in keeping the DX hunters well abreast of current activities. His job was well done.

I agree with Frank when he said that he has wanted the notes into something he always wanted them to be, that is, with plenty of news and notes. I aim at following in his footsteps. Now, fellas, I need your help to keep the good work going, so let me hear from you. If you don't write each month then do so at longer intervals—whenever you have some news that may help the DXer. All notes should reach me by the 28th of each month.

NEWS AND NOTES

Luis CE3AG and a band of CE3 operators hope to be on the air from Juan Fernandez after January 10 as CE0ZA on c.w. and s.s.b., and CE0ZB on a.m. It is possible there may be permanent operation from there in the near future. CE0ZF has been working 21 Mc. A3, and although he speaks mainly Spanish he can also speak good English.

Lee Grant, ex-ZD3G, will be active on Bahrain soon with the call MP4BCN. W2ZGB will handle all QSLs.

Ralph Ladd, W3KA, who made the recent DXpedition to Swan Island as KS4AZ, had 1844 contacts with 54 countries on both phone and c.w. Distribution of KS4AZ cards began early in December so those who were fortunate enough to work him should not have to wait long for their cards. W3KA and W4KFC may go back to Swan Island about the middle of 1959.

KM6BL, Mac McCollough, will be on Midway Island until about June 1959. He is available for skeds any day between 0300 and 1600z. He can work 28, 21, 14 or 7 Mc. phone or c.w. His policy is 100% QSL via Airmail. Bureaus are not used.

Those who missed out on the two recent VQ4ERR DXpeditions to VQ1-land will have another chance in January. He will be operating on 15 and 20 mx from VQ1 for about ten days sometime during the first two weeks of the New Year. He will also be in the Seychelles (VQ9) for at least two weeks in August 1959. A team of operators will keep this station on the air day and night on both s.s.b. and c.w.

FB8AC/GN QRT Nov. 21. He may be on again after Sept. 1959 from FO8, FB8 and perhaps FW8.

FB8CD is back again on the Comoro Islands and will soon be on 14300 Kc.

All civil Amateur licenses in Lebanon are still suspended but two military Amateur stations are active. OD5LJ on 14 Mc. c.w., and OD5LX on 14, 21 and 28 Mc. c.w.

Fred VP5FP will be active again from Turk Island before the first of the year. QSL via WITBS.

SM8AQT/LA/P, now SM5AQT, is clearing his back log of QSLs, especially those of his Svalbard operation. If you still need one, write C. Backstedt, Snolksky V. 34, Stockholm K., Sweden.

VS5AT, Harry McQuillan, C/o. B.S.P. Co., Seria, Brunel, is ex-ZL4JA. He wishes to contact as many of his old friends as possible from VK. My contact was on 14 Mc. c.w. at 1900z.

EL6D, Liberia, is active on phone in the 15 metre band.

Aake SL3AG, a military station in Sweden, is fairly active on the 15 and 20 metre band, on c.w.

Pakistani AP2AD wishes it to be known that AP stations never at any time have been restricted in any way. Apparently some false info was published in certain U.S. and G.B.

* Call signs and prefixes worked, a zero time—GMT.

REPLACEMENT CARDS REQUIRED

The Australian W.A.V.K.C.A. Certificate is much prized by overseas Amateurs, but unfortunately the QSL cards of one of the claimants has been lost in transit so an endeavour is being made to replace same.

If your name appears in the list below as having worked Dady Major (VU2MD) would you please write out a new QSL or send a certificate to the Federal Secretary, Box 2611W, G.P.O., Melbourne, C.I. Vic., who will arrange for forwarding to the correct destination.

- VK1EG—Bill, 28th Nov. '54.
- VK2AAO—Eric, 2nd Feb. '51.
- VK2ACX—Art, 14th Jan. '52.
- VK2ADE—Chas., 5th Dec. '55.
- VK3ACE—
- VK3ADM—Mac, 17th Feb. '50.
- VK3ALL—Peter, 5th Jan. '54.
- VK4HW—Bert, 7th Jan. '52.
- VK4KJ—Bill, 21st Jan. '55.
- VK4PX—Arthur, 27th Dec. '55.
- VK5BS—Berry, 30th Dec. '50.
- VK5CO—Brian, 9th Dec. '50.
- VK5JS—Jack, 22nd Nov. '48.
- VK6CM—Chas., 10th Dec. '49.
- VK6DH—Dave, 7th Dec. '50.
- VK6EJ—Rob, 4th Oct. '56.
- VK7KB—Jan, 3rd Jan. '49.
- VK7KM—Ken, 22nd Dec. '54.
- VK7Y—Edgar, 8th Jan. '52.
- VK8CK—Murray, 31st Jan. '58.
- VK8AE—Dave, 30th Sep. '49. (Northern Territory).

Please send the QSL at your earliest. Do it now. Thanks!

—Doug. Bowle, VK3DU, Fed. Sec.

periodicals. It seems that one AP station had his license cancelled for an infringement in politics, but all others have been active. AP2AD is very active, mostly on 15 mx. Two AP stations will soon be on s.s.b., so watch for them.

Phonics: CIA, HA5AM/ZA, BV1A, and another, believed a pirate is TA1BR, Turkey.

John ZD8JP has finished his work on Ascension Island and is returning to England. Cards for all QSOs during November should go via R.S.G.B.

Pietro Marino, IT1ZGY, was denied a license for the Pelagian Islands by the Italian Ministry, but hopes to make the DXpedition in the near future.

St. Helena has three active stations, Bob ZD7SA, George ZD7SF, and Barry ZD7SE. ZD7SA appears to be the most active and is regularly on at 2300 GMT. He uses phone and c.w. in the 10, 15 and 20 mx bands.

Sputnik troubles. In a recent "QST" it was mentioned that two W stations were suspended for 12 months for going into the National Forest and setting up a tx and re-transmitting "Sputnik" signals on 20.005 Mc.

Bill Orr, 3A2AF (W6SAI), is working from Monaco using an 807 in a little 40 watt rig and an S40 rx. He has found the going is fairly tough with this simple gear when lots of local Europeans join in with the DX scramble.

Sao Thome is represented by CR5AR on 14 Mc. c.w., but it seems you will need some luck to catch him as he makes only about two QSOs per hour.

There is current activity from at least two stations in Ghana, both on phone; 9G1AA 28 Mc. and 9G1CH 21 Mc.

If you need Aaland Island look for OH0NC on c.w. He works both 21 and 14 Mc.

Spanish Morocco has two stations, EA9AP 21 Mc. and EA9EI 28 Mc. that occasionally come through between 5 a.m. and 7 a.m. in Sydney.

For those who have been hoping to count KR6LP as a new one, you can delete all reference. A.R.R.L. has ruled KR6 is allocated to the Ryukyu Islands and KR6LP is located in that group (2QL).

Generally from DX stations in varying directions the comment has been that conditions have been far from stable, especially on the 10 and 15 metres. We have not been the only ones affected as the commercials have also had a bit of trouble.

Did anyone notice the terrific burst in signal strength, 14 Mc., from North America on 18/12/58. Between 0550 and 0615z the band was simply crammed with S9 signals.

Anybody still in need of a Y12AM QSL can get one by sending a log extract to G3IGI, who, if it talks OK, will make the necessary arrangements.

VK Amateur operators who receive SWL cards from Sven Elfving, SM3-C21, may send their replies through the VK3 Bureau, marked "C/o. VK3AOM". This arrangement will assure Sven getting his VK QSL cards.

Frank 2QL has gone on a well earned holiday and just prior to leaving sent me a letter in connection with this month's notes. He has received many letters from "well wishers" and said, "John, would you please include a par thanking the many readers on my behalf for their thoughts and comments they have expressed to me with my need to hand over. If I have pleased them, which apparently I have, that is my satisfaction for the job."

I feel certain that all Amateurs will wholeheartedly support George 3AOM when he said of Frank, "Actually, I feel that it is my duty and privilege, together with the rest of the Amateur operators of Australia, to tender you our thanks for your contribution, month by month, to our interest and information by way of the 'DX Page' which, in my case, is the first page of the magazine that I read. I know that this page has meant a lot of work and perhaps at times some worry too, and that is the reason why I, for one, have sent along my bits and pieces month by month. So I say to you Frank, 'Thank you for a job well done'."

ACTIVITIES

7 Mo. C.w.—2QL: UA1, DL, YU. BERS18K; DU1NL, F, F9UC/FC, G, GM, JA, OD, OK, OH, OZ1TB, PA, SP, SL3AG, SM, UA1, UB, UA9, UC, YU, YO, ZS6AFS, WIA-L2022: JA-9MM, KH6CFX, Ws, VR2DA.

14 Mc. C.w.—2AMB: F9QV/FC, XW8AM, 4X4W0, JZ0DA, HK4JC, VS8MA, ZD6NJ, ZP5CP, VRIA, UD6AI, UL7KAA, HPIAO, VQ-5EK, FQ8HA, CX6AD, VU2RA, VQ2RE, ISIFIC, FO8AU, 2QL: F9UC, OX3RN, ET2KY*, ET-2VB*, HS1C, CT2AI, UMD8X*, FB8CJ*, FM-7WP*, FFSAJ*, FQ8HA*, UL7HB*, DL7AH/LX*, ZS5RF*, CR6BX*, K65P*, PZ1AR, ST2KO*, VQ4EZ*, ZD2GUP*, F2CB/FC, EA8CP, EA8CG, SM5WN/LA/P, 2ZR: CR6BX*, FA9U0*, UD-6UA*, ET2VB*, T2CAH*, T2AB*, ZSSQU*, VSSAT*, HC4M*, ZSSDE*, ZSING*, FA8VN*, UR2BU*, ZC4AM*, ST2KO*, 4X4CJ*, CJ*, CK*, KA*, DR*, JR*, JU*, WF*, 4D*, W*, VE*, KH6*, CE2CC*, VR2DG*, DL*, KA*, I*, CR-7CR*, XZ2TH*, KM6BL*, VU2CK*, VS1F*, YU1YD*, LZ1KSZ*, LZ1KDA*, YO3CR*, YO-4KCA*, UA0KJF*, UA0JZ*, UA4HC, VS9AQ*, EA8CG*, JZ0DA*, ZEJJO*, 4X4JO*, F8FBZ, 4X4DR, 4X4JL, 4X4JM, OQ5IE, OQ5JR, FB9CX, VS9MA*, SPTJX, GM3LYS, EA5FA, OX3XU, ET2KY, ET2VB, ISAAW, KC6JC, UL7KAA, UR2AB, UC2AX, HA5KFR, ZS5RF/7, SM7: EA6AF, ET2VB*, CT1CE*, D38E*, FQ8HA*, FB8CJ*, G6VC*, HK4JC*, K65E*, KC4USC*, K6EWL* (long path), OH2LA*, OZ2LA*, OK-3HF*, SV0WC*, UD6KAK*, UG6AB*, SV0WA*, SPTHX*, UQ2KBR*, UR2BU*, VQ4EZ*, ZL5AC, 4X4GY*, 5A1CJ*, EA8BG, EA8EM, EA8VA, TG9HE, CR5AR, UP2AT, UP2KCB, 3A2CX, 3A2BA, BERS18K: EA6AU, 8BM, F2CB/FC, F9UC/FC, FA8XS, FK8AS, 8AB, HK1TH, IS-1AHK, KC4USG, KC6SAN, KR6RY, LX2GH, SV0WAA, UHBKAA, VE8MX, VF9DU, VQ4AO, VR2DA, 2DK, VS6EC, ZC4AM, ZEJJO, ZS2MZ, 5A1CJ, WIA-L2001: BV1US, DLATJ, KM, DU-1OR, EA3CY, F3GB, FK8AR/MM, 8AJ, GDFJL, 3BUO, HFD, SN, GW3AX, HL9KS, HP3FL, I1CC, IT1ZZW, ISFL, KA0LJ, KR6DO, LP, KX-6CG, OA4AR, ON4OC, UR2DA, ZK2KN, VK9AS, AD, ZE5JU, 7JZ, ZD6DT, Z57ER, WIA-L2022: EA7EW, 8CQ, FA9U0, F2CB/FC, CN8LM, HC-41M, HK4JC, ISAAW, ISIFIC, KC4USK, SV-0WAA, UH8BA, U18BA, UD6KAK, VP7BT, 9EP, VRIA, VS6EA, VU2DR, UP2KCB, XZ2TH, YV5DE, ZP5LS, ZS8AQ, WIA-L2022: HK4EK, FO8AC, KC4USG, KA2KK, KH6S, KJ6BH, KR-6RW, KR6BT, AF, OA1T, 4AJ, TI2HP, VR2DC, KJ6BV, Ws.

14 Mc. Phone.—VK3AOM: G3EHT*, GM-3EST*, HK4EX*, HL9KS*, KT*, JA1BFU*, JZ-0HA*, KH6BTD*, KP4ZC*, KR6CC*, KZ5RD, OA1T* (YL), VR2DA*, DI*, DK*, VE3DDI*, DGW*, TS*, 4DO: Ws*, VEs*, CE0ZG*, JZ-0HA*, WIA-L2022: KR6, VU2CQ, CX1FM, 9G1CB, CN2BK, I1RR, AP2Q.

21 Mc. C.w.—2QL: BV1USB*, DU7SV*, CX-3BH*, JT1AA*, KP4KD*, OA4BP*, OD5LX*, VQ4RF*, FK*, VU2RM*, VS9AS*, YV5FH*, ZE1JV*, 4X4KK*, RE*, 2ZR: CE3AG*, CX-3BH*, KC6KR*, UL7JA*, VP6CG*, VQ5EK*, XW8AM*, ZP5JP*, 4DO: VR2DG*, YV5FH*, KL7PIV*, JA*, FB8CY, FO8AW, FA0RE, SP-1KAA, LZ1AH, UA0GF, CN, VF4LA, VQ4EV, VS9AS, 4X4CJ, WIA-L2022: KZ5MN, OH, OK, UA9CL, ZS6APQ.

21 Mc. Phone.—4DO: Ws*: KH6*, GMs*, VS-2CA*, VS2GQ*, WIA-L2022: GM3KEZ, OH9XP (Laplant), UA1DZ, VR2BC, XE2MS, YS1RZ, YS1IM, ZK2AB.

28 Mc. C.w.—WIA-L2022: DM3IGY, JA4HM, OK1FF.

28 Mc. Phone.—WIA-L2022: JAs, Ws, KR6s, KX6AF.

QTHs YOU MAY NEED

LX1TJ—Esch-Sur-Alzette, Luxembourg.
 DL7AH/LUX—QSL via D.A.R.C.
 ZS3E—Via W8GCN, Clifford Swann, Jr., 1617 Woodbine Ave., Charleston, Virginia.
 EA8CP—Agustin Perez, y Perez, P.O. Box 215, Santa Cruz de Tenerife, Canary Island.
 CE0ZG—P.O. Box 3016, Valparaiso, Chile, South America.
 CE0AC—Vicente Pascal T., CE3HL, Box 5050, Santiago, Chile, South America.
 CE0ZF—Serigo Rosa R., CE2EM, Isla Juan Fernandez, Chile, South America.
 SV0WE—Henry B. Wood, Box 564, Athens, Greece.
 ZD7SF—George, Post Office, St. Helena Island.
 SU1MS—Mahmoud, Nr. 13, Kawa Str. Zaher, Cairo, Egypt.
 ZSSRP/7—Des, Ubombo Ranches, Swaziland (4D0).
 15AAW—Caslo, Box 85, Mogadiscio (4D0).
 ET2VB—Von, Asmara (via ET2US, A.P.O. 843, N.Y.) (4D0).
 ST2KO—QSL via R.S.G.B.
 Ray Baty, VK2ANB, formerly VR3A, hopes to be operating on full power from his new QTH at St. Ives early in 1959.

QSL DETAILS

2AMB: CN8IF, LX2GH, OQ5EH, UR2BU, VP3YG, VP2VG, VS9MI, XE1H, ZS8IX, 4X4CK, 4X4FU, ZS8IX. 2QL: OY7ML, ST2AR, UD6AM, VP2GD, VP3YG, ZD1FG. 3AOM: KJERR/VO2, OA1S, YV5ADP. BERS185: CT2AL, HAIKSA, HB1LO, HC4IM, 15AAW, ZK1AK.

In this first effort my thanks go to W4KVX for the use of his valuable DX Bulletin, 2QL for his long list of stations worked, and other valuable help; 3AOM, I appreciate your sincere wishes, George, and will be looking for your support each month; 2AMB, it was good to contact you over the air again and will be looking for you each month; 4D0, thanks for the list and New Year greetings; 5MY, your effort is welcome and hope you get that UP2 very soon; BERS185 hears the good ones, yes Eric you have certainly been an active s.w.l. for many years and your comments and notes will be much valued; WIA-L2001, you have some good ones in your list this month; WIA-L2022, it seems your 455 worked well on your trip through VK3-land; WIA-L3065, keep up the good work, Ian, and that tally of 45 countries will continue to grow.

CORRESPONDENCE

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

"WHAT'S WRONG WITH 40"

Editor "A.R.," Dear Sir,
 Well I suppose that by now you have thought of a good answer, all of which, with a few appropriate adjectives, will end in "no DX", "noisy", "QRM", or "QRN".

No matter what we think, the fact remains that it IS one of our bands and a very shaky one too with all the commercials casting their envious eyes on it. It seems queer that with all this talk of fighting to retain our bands a few more people went to do something practical by actually using them occasionally.

Having been a Ham since 1926, originally A2JC, I remember the old days when we had to battle the QRM on 80 and 40 if we really wanted to have any contacts and I suppose that is one of the reasons for my affectionate regard for these bands.

With the exception of a few years break at Woomeera I have been on 40 continuously since 1946 and must admit that it has provided all the fun that I want.

Now for those boys who say the old band is dead. Let's see what a bit of battling with 35 watts can do—85 countries, U.S.A., W.A.S., W.A.C. Now I will admit that this doesn't look so hot, but it took me 2,000 W contacts to finally land that North Dakota for the W.A.S.

Working six or seven Ws a night isn't everyones idea of DX, but we ought to think that there are thousands of Hams on 40 who get up early in the morning and who consider VK as real DX—the number of cards drawing attention to "1st VK contact" bears this out.

Don't get me wrong by thinking that all the Ws on 40 are newcomers, else you will get a shock when you hear the number of big "DX" men who come on when the higher frequencies go dead. As for poor signals, well I haven't heard one on 20 yet which will equal W8FGX who uses a 2 element beam and comes through like a local. W3BVN, W8BHW, W9UI

and a host of others put in S8 to S9 signals around about 9 p.m. in summer.

For those who want 40 W.A.C. there is HC4IM on a few nights a week with his S7 signal and "sure fire" air mail QSL.

Admittedly the band has commercial QRM but by 1959 standards we should be able to work very close and it can be done. In the recent "CQ" Contest, 71 DX stations were worked on the Saturday night and 31 on the Sunday night and they included G5, VU, VR, KL7, VE, KR6, W, JA, which isn't bad going for a poor band.

A sked is kept every Sunday and Monday morning with W8FGX and W3BVN at 6 a.m. Adelaide time (2030 GMT) and it does the heart good to hear those boys coming through S6 on the "long path".

Some DX worked lately includes, in addition to the above, UA0, HC, KX6, TI and new ones keep on popping up, which makes that "40 DXCC" just a little closer.

From the foregoing remarks I hope to have proved that the old band still has a kick and there would be still more DX but you can't blame that VU not calling CQ when there is no one there to answer him—I know, because morning after morning I am listening at 6 a.m. for those, at the present, elusive Europeans.

Well chaps, there's the story and let's try and give the old bands one or two nights a week and prove they are worth keeping. I'll guarantee you will get a kick out of it.

—E. J. (Ted) Cawthron, VK5JE.

VK-ZL CONTEST

Editor "A.R.," Dear Sir,

It has been suggested to me that I would possibly like to clarify my remarks in Jan. "A.R." in reference to the 1958 VK-ZL Contest.

Let me point out from the start that no reference has been made to our Federal Contest Committee, either direct or by implication, other than to state that the matter "is now in their hands".

When I first queried the rules, I wrote to the Sec. of the N.S.W. Div. asking his opinion on the matter, however if I remember correctly there were other matters in the letter and Norm has possibly overlooked it. Rather than worry Norm over matters which do not concern him, I wrote to the Sec. of the Federal Contest Committee, Mr. Reg Harris, VK5RR, and as time was getting short, I addressed it to his home QTH. Apparently it got lost in the process, or I was incorrect in writing direct to this gentleman—the latter no doubt. (I have been a member for just over a year and

still have not got things set out properly as yet.) In any case, neither of these letters were answered or if so I did not receive them. It was at that stage that the Contest was held. I do not recall the dates of these two letters, other than the last was sent just about 10 days prior to the Contest. I then wrote to the N.Z.A.R.T. and received the fatal letter, which as mentioned last month is now in the hands of the VK2 S.W.I. Group.

It appears that my letter last month has offended the F.C.C. I am very sorry about this and do hereby apologise for any statement which is contained in that letter which could cause any embarrassment to the F.C.C. or any other person, nor was it an attack on that body.

It was written to bring to light a misunderstanding which has no doubt caused some confusion. Two facts point out clearly, firstly, the rules as stated in "A.R." permitted VKs and ZLs to log each other, while a letter from the N.Z.A.R.T. states clearly they cannot. This is the issue in hand, and it cannot be brushed aside. Since the F.C.C. have seen fit to take me to task about it, I will hereby ask them to publish through these columns, the reason for this error. For there can be no doubt that somebody has slipped somewhere. A lot of fuss about nothing? Well, maybe, maybe not. Depends how the individual views such matters. Any s.w.l. who goes to the trouble of entering a contest must take it seriously, and I would take this opportunity of pointing out that there would be an outcry if a similar condition affected the transmitting section.

I have honestly attempted to explain my previous letter. I have apologised to the F.C.C. for any damage I may have done them, to the N.Z.A.R.T. there was no intention to cause any embarrassment, and I am sorry if I have caused any. I only ask that an oversight of this nature does not occur again. I trust there are no more hurt feelings over the matter, as it is the least of my intentions to disrupt the workings of our association and will again point out that my letter was written mainly to have the matter cleared up for future contests, and to a lesser degree to inform the s.w.l.'s in general of the situation.

—Don Grantley, WIA-L2022.

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Hampton, Vic.

Fair going for all Divisions with sporadic E throughout December and early Jan. coupled with a few off side effects. Best DX contact went to VK6ZBT who QSOed JA during Dec., type of propagation not mentioned, probably F2. How frustrating can this band be. Ask Albert 3PG. Around noon Dec. 10 he listened to three W6 stations in a matter session, signals to fair strength, but conditions packed up before he could join in. That is the first reception of W signals in VK3 since Ian 3ALZ heard W6NLZ last May 11 at 1005 E.A.S.T.

The JA link appears to be re-establishing itself, VKs 4NG and 4HD worked into there during the early part of Jan. The southern States are awaiting their turn now, high hopes being held for good openings during Feb. When a good opening does occur the band is going to be bedlam, even worse than it has been oftimes of late. Selectivity in the receiving line-up is possibly more important than sensitivity these days though naturally the latter is not to be discounted.

One VK3/VK5 opening allowed the effective and sensible use of v.f.o.'s, the band being so cluttered with signals that many moved out of the first 200 Kc. into the higher reaches, the first 600 Kc. being used and well covered by stations in both Divisions.

Now that the ZLs have shifted to 51 Mc. they should not be neglected, receivers should be adjusted to tune to 51.5 Mc. at least. But why stop there? Already the trend has set in to use the empty spaces up towards 51 Mc. and many have been surprised to find the m.u.f. reaching that high, so many thought that it always cut off sharp at 50.2 Mc., in some cases about 50.1. Another pleasing aspect they find is that the efficiency of their beams do not fall off as much as expected, unless of course they are already cut for work outside the low edge of the band.

The Christmas-New Year week resumed its normal habit of providing excellent extended openings after the great let-down of last year, with daily sporadic E openings spread over all Divisions and ZL. The weeks preceding Christmas gave many good openings to other mainland Division from VK3, with 6WG appearing as late as midnight. The VK6 gang gladdened many a Ham up and down the east coast by letting many newcomers to the band make their first west coast contact. The VK5-6 path has been very good while the ZLs have often been in to 9 plus to VK2-3-4-5 with the odd opening to VK6. One good opening on Jan. 10 had the ZLs hearing all Divisions though VK6 and 9XK may have missed out on contacts because of the fierce QRM on their weaker signals. During this opening a couple of crafty VK3s sneaked in VK5 contacts off the back of their beams which were on ZL. No, not scatterback, a swing of the beam brought up the signal strength.

Russ 9XK earns his contacts the hard way these days fighting fierce QRM. This explains why he is so hard to contact; a signal has to be good to ride in. Hence also the use of automatic c.w. transmissions by Russ. These sigs have been heard in VK3 not infrequently, and have been commented upon by Bob 4NG who has heard them fade in, hold steady, then depart again. Possibly others have had the same experience and wondered why Russ was not following his normal habit of call, then tune.

Very consistently during the last week of the old year and the first of the new, 4LK and others in central VK4 have been heard in VK3 to S9 from midday on. But the VK3 gang find Vern a hard nut to crack, the band normally being open to him from VK2 and 5 at the same time, weaker VK3 signals being crowded under. The Melb. QRP boys were elated on Dec. 29 when an excellent opening to VK6 enabled them to join in the fun and make contacts. That after they had worked VK2-4 and 5 earlier in the day with their 4 or 5 watt rigs. Ian 3ALZ snaffled a couple of quick VK7s on Jan. 4 when he heard a trop. opening on 144 Mc., made his contacts and then shot back to 50 Mc. 7LZ and 7BQ were at the other end. From the stations heard

calling him, 7ZAI appeared to be doing well with his portable gear at Devonport, making the most of his holiday.

Rumour has it that Max 4HD has heard a European signal, but nothing is yet known here for certain. One Jan. evening during a VK6 opening, weak signals from the south-west were heard in VK3 and conjecture as to their place of origin has ranged from ZS (bearing), refraction from VK6 to scatterback from VK3 and VK5. Russ 9XK issues a strong plea for the more frequent use of c.w. because he often hears weak phone signals which he cannot identify but which would be 100 per cent. copy on c.w.—30F.

VICTORIA

6 Metres.—December proved to be the best month for DX in VK3 since the re-opening of the band. The band was open during a part of nearly every day of the month and areas worked included VK2, 3, 4, 5, 6 and 9; ZL1, 2, 3 and 4. Albert 3PG heard a QSO between a number of Ws at noon but was not able to raise a contact, probably swamped by "Call-fornian kilowatts!" David 3ZAT and Ian 3ZBP were operating portable during the Xmas period at country QTHs and report that considerably more DX can be heard at these locations than in the Melbourne area. Unfortunately very little information comes from 6 mx operators in the country and probably news of quite a few openings not heard in Melbourne passes unnoticed.

2 Metres.—For most of this month's 2 mx news the writer is indebted to Gordon 3ZBJ, who was good enough to send along a letter outlining activity in the Western district. Gordon and Brian 3ZBS have been conducting nightly scheds with Max 3ZCW in Ouyen, up to date the path has proved quite reliable from Ballarat and contacts have been made 19 times out of 25 attempts, signals ranging from 5/9 to 3/3. Max 3ZCW has also recently worked into Colac and Melbourne and reports hearing tone run by 4BT on 2 mx during the 6 mx breakthrough on Sunday, 28th Dec.

Other stations at present active in the West include 3ZER and 3ZDM at Ballarat, 3ZEA at Rainbow, 3AGV at Colac, and 3ZFD at Horsham. Incidentally the Ballarat stations are all operating between 145.0 and 145.2 Mc. and are looking for 2 mx contacts most nights of the week.

Activity in the Melbourne area has been rather low. Ian 3ALZ has made a return to the band and has made a number of c.w. contacts with VK7 stations. The roll up for the Dec. 2 mx scramble did not approach that for the previous month. The winners with seven contacts each were Ivan 3ZDI and John 3ZAI.

1 Metre.—Ron 3ZER has been operating portable from Mt. Buninyong using a QQE03/20 tripler with 20w. input on 289.2 Mc. Ron puts a good signal into Melbourne and should be able to make it to Moe, thus breaking the present VK3 1 mx record. Peter 3ZDO is now xtal controlled on 1 mx and is running about 10w. to a QQE03/12 tripler. Peter has been heard by a number of local stations on 289.2 Mc. David 3ZAT is sprucing up his 1 mx gear and has been running 50w. to a QQE06/40 final on 289.5 Mc.

V.h.f. Meeting.—Allan 3AEL was the speaker at the Dec. v.h.f. meeting and gave a talk on his recent overseas trip. Allan, whose hobbies include photography as well as radio, brought along over 150 colour transparencies of subjects ranging from the A.R.R.L. Headquarters in West Hartford to replicas of the three Sputniks on show at the Brussels Fair. An interest in Ham Radio as well as a keen knowledge of things in other unrelated fields enabled Allan to give a very interesting two-hour talk. The Group were disappointed to hear that Allan's thriftiness with dollars on his stay in America which had enabled him to buy an American rx has been rewarded by the local authorities by refusing to grant an import licence and impounding the rx.

Little business was conducted at the meeting but a motion was passed instructing the Secretary to draft a letter to the Contest Committee expressing the Group's views regarding the sudden change in Ross Hull Contest Rules.—3ZAI.

SOUTH AUSTRALIA

Well the DX party is on, break throughs almost any day or night and some good scores coming up in the Ross Hull Contest.

Dec. 28 was a red-letter day for ZLs. Up to 30 different ZLs heard here and most of them worked by Col 5RD and Bill 5ZAX, also other VK districts at the same time.

Main DX worked locally was Russ 9XK on the 28th, 5 x 8 signals both ways, with Col

5RO working him three times over a half hour period; understand that quite a few boys heard him, but were unable to make contact.

Locals heard amongst the DX and new to the band this season are Ron 5ZR, Clem 5GL (who blew the dust out of his gear and just threw the switch), 5ME who has returned from Sydney to work for NWS9, Bill 5HD who has finished playing around with his one-eyed monster, Malcolm 5ZBH with 20w. to a long wire, Brian 5TN—his first DX being a VK7 and running only 7w., and Ray 5BT, overtone to a QQE03/12 to a dipole.

Some good openings to Hughie 5BC and 5ZAB on extended ground wave signals 6 to 9 with very slow QSB. This is very good considering that we have to work 6BC and 5ZAB across the ranges.

Rollo 6BO has automatic tuning in operation during his holidays. Takes approximately 2 mins. to tune the first meg. It has paid dividends and I suggest that a few VK3 boys give it serious thought. It has been very useful in working Wally 6WG again this season, he can be heard most evenings 5 to 8 off the back of the beams and I have made many contacts this way with VK6s in the middle of working VK2s.

Col 3RO kindly made his QTH available for a preliminary v.h.f. meeting and arrangements were made for a proposal to be placed before the next W.I.A. (S.A. Div.) meeting for the formation of a v.h.f. group within this Division. There are approximately 35 stations in VK5 operating at the present time on 50 Mc. and quite a few using 288 Mc. This, together with the listeners and others, are sufficient in numbers to form a very active group. Time has come for all v.h.f. operators to co-ordinate their activities for the benefit of one and all, emphasis being placed on the retention of our bands, organised listening for DX break throughs, the passing on of all information of benefit to all, and the promotion of good fellowship amongst fellow Hams. Those attending the meeting were 5MK, 5MT, 5TN, 5KC, 5ZBA, 5ZBL, 5ZCA, 5ZCR, 5ZBX, 5ZBZ, 5ZBD and yours truly. Refreshments were taken at the conclusion of the meeting and thoroughly enjoyed.

Moves are afoot for a fox hunt in Feb. This will be the first organised to my knowledge in VK5. There are enough mobile tx's available for the fox, so I suggest that those interested get cracking on a 50 Mc. converter for their car rx's. Cheers 5ZAW.

WESTERN AUSTRALIA

The Christmas meeting of the W.A. V.h.f. Group was held at the home of 6SJ, taking the form of fox hunt, films, ragchew, and barbecue. Unfortunately the fox expired before the hounds could get their hastily constructed "sniffers" going. Serves 'em right for running a 6J6 on the umptieth harmonic.

Plans are under way to construct and operate a 50 Mc. beacon in VK6. This should be invaluable in aiding our attempts to work Africa on this band. Present indications are that 10 watts input will be run into stacked haloes on 50.5 or thereabouts. Plans are still nebulous at this date as official sanction has still to be obtained. By the time this is printed something will have been finalised one way or the other.

6 metre DX has been fairly good this sporadic E season with openings to all areas except VK9. A lone ZL1 created quite a deal of excitement on Sunday, 29th Dec., as also did a lone VK7 on 30th. The 30th saw the best opening in VK6 for years with VK2, 3, 5, 7, and ZL contacted. Some very interesting diversity effects are being noted, e.g. Bob 6ZBY did not hear a single VK3 on 30th but worked a ZL, 6BE and Perth gang heard no ZLs but worked 12 or more VK3s. For the benefit of the VK5 boys, by far the most consistent and/or strong sigs heard here came from 5ZAX, 5MK and 5QR. What is it boys? Locations, gear or antennae?

6ZBT actually worked a JA during Dec., but was unable to wrest a number from the uncomprehending JA, although HLKA was heard for two or three consecutive days, no other JAs were heard.

144 Mc.—6BO and 6WG are at it again working in early morning over the 240 mile path Perth-Albany. 6ZAA (Manjimup) is also active on 2 when the opportunity arises. Some of the other siders have checked 2 with Rolo during 50 Mc. DX openings, but without any luck so far.

6ZBO has been putting strong signals into Perth with a 12AT7 tripler, from Rottnest Island over the last week. Apart from 6GB and 6ZBU's nightly wacker, 2 mx activity is in the doldrums, owing to the 50 Mc. DX currently appearing. Several of the boys are designing or building 2 mx gear at present though.—6BE.

NOTES

NEW SOUTH WALES

HUNTER BRANCH

The last Branch meeting for 1958 was held at the University, Tighes Hill, on Dec. 12, when the following were present to hear and see Joe 2JR perform: 2CS, 2ZDL, 2RJ, 2AQR, 2ZDF, 2SF, 2AOR, 2ADS, 2XT, 2ANA, 2QB, 2ZL, 2AFA, 2ALA, 2RU, 2ZCA, Messrs. Sutherland, Bailey, Hall, Rugg, Roberts, Grey, Stobbs, Jackson, MacLaughlan and Brooks. The writer was disappointed at the brief discourse by Joe as he fully expected Bob Winch's record to be broken, but apparently Joe was hungry and heard of the excellent supper that was to be served later. Anyway, the bits and pieces expounded included hints and kinks on the BC221; how to pin-point piccolo pete; and excellent slides of the Brussels Exposition were well received.

Bill 2ZL was about to protest when Joe said that there was hum on the signals broadcast by many English butcher-shops, but with all his Aldermanic guile he put on slides of traction engines and all was forgiven.

Was surprised by the absence of Gordon 2CI, thought he would be there to see his old partner in photographic crime, but maybe he was away peddling pills or perhaps printing snaps he took at Blacklacks two years ago. Must get Gordon and Joe to give a lecture on how to keep the road accident rate down. My spy tells me that Bill 2XT wasn't satisfied with the gear he got from the East so has commissioned Alan 2FH to journey forth to Fiji to see what he can pick up in that direction (kimono to grass-skirt).

Wal 2AXH will be home long before this appears in print and all his friends are anxious to hear all about his trip to the shakely isles. My spy also tells me that Rodney 2CN is still testing, but didn't say what, why or when. Congrats to John 2JU on his appointment as our I.T.U. Rep., so now you laggards your last excuse has disappeared, or has it. Don't be a Yid—give a Quid (quotation by kind permission of Pop 2AHL).

Well chaps, your next meeting at the University is on Friday, Feb. 13, at 8 p.m. Make a point to be with the regulars as an excellent programme has been mapped out for this year with quite a few southern importations. See you all also at the social gathering at 2XT, Bill's haven, on the 25th.

BLUE MOUNTAINS SECTION

The Dec. meeting was held on 19th at Springwood R.S.L. Hall and was a rather special meeting as the festive season drew near. Present were 2MZ, 2QA, 2ASZ, 2AVK, 2ADF, 2RM, 2NK, 2ART, Messrs. Pidding, Millar, Boyd, Gunning, Snell and Russell. Business was held to a minimum and consisted mainly of discussing plans for moving the Section meeting place to new quarters in the Lawson Council Chambers. The Jan. meeting will be held there and we should have 80 and 40 mx equipment operating that night followed by 5 and 2 mx equipment at an early date to tie in with W.I.C.E.N. Plans are afoot to hold more classes and lectures for those intending holders of the A.O.C.P. in the Group.

Construction is well under way on 2 mx converters for those members who do not already possess one, by Wal 2MZ and his willing assistants and samples were on display which were studied by all.

A very appetising pre-Xmas spread was turned on by Syd 2AVK and Norm 2QA and the Section funds suffered a large blow at the local hostelry which provided adequate liquid refreshment. It was pleasing to note that at the wind-up of proceedings all 807s had been fully neutralised and no splatter was left for the mice.

Activities of the members have been a little hard to trace this month due to the festive season disrupting consistent QSOs. Bill 2HZ and several other members have been away on holidays and have not been heard on the bands. Wal 2MZ has been very active on 6 mx during the Ross Hull Contest with a 3 el. beam and 522. He thumps a very solid signal

into this QTH on that band and is knocking ZLs over right and left. Don't need a mast on top of your mountain, eh Wal?

Syd 2AVK has been heard actively on this band also but battling the Tennessee Valley Indians a little on the extreme fringe area. Yours truly is slowly getting started also and if this new 4 el. yagi works out like I hope, it will be heard Interstate shortly.

Dave 2NK and Keith 2ADK have been busy installing gear at Lawson for the clubrooms and that is possibly why I haven't heard them much this month. Don 2ART appears to have temporarily deserted c.w. on 40 now and is putting out some nice phone there. Norm 2QA has been heard on 2 mx regularly and must be deciding that a xtal on 40 is hard yakka indeed.

Jack 2ADF is constructing a very nice rack tx with Geloso and 807 final at Penrith. On-the-air tests believed successful so after a long absence should be active soon. 2 mx equipment also under way at his QTH. Heard Wal and John Ferris discussing plans for a fishing trip northwards with Horrie 2HL so wish them all the best. Should know by next month's meeting if any results. John Snell, having acquired a new car, is busy building mobile 40 and 2 mx rx's into it so should be a good starter for fox hunts soon.

Would like to advise all members that a visitor at the Feb. meeting will be the Blue Mountains C.D.E.N. Officer, Colonel Strachan, to advise how we can assist in emergency communication, so I would ask all possible to attend this important meeting at Lawson on 20th Feb. 73 2ASZ.

VICTORIA

During this time of the year when people are away on leave and there is no general meeting, news is rather hard to come by, so please excuse the brevity of these notes.

I don't know whether I am suffering from imagination or not, but it seems to me that there is a lot more portable and mobile activity on the bands these holidays than there has been of recent years. Perhaps we can expect a renewed interest in this type of operation in the future. Surprisingly enough a large proportion of the stations heard were using quite low power, mostly between 5 and 10 watts and one or two were even lower than this. Despite the QRP and whip antennae and the like, signal strengths and quality were generally very good so it is hoped that the operators will be encouraged to enter the National Field Day which will be over by the time these notes are in print. Incidentally, at this stage, the Publications Committee intends to enter a station in the field day this year and it is hoped that present plans will bear fruit.

No doubt the thought uppermost in most of our minds at the moment is the state of progress with regard to occupation of the new building. As some of you will have heard via

the broadcasts and grape vine, the formalities of the purchase are now well and truly complete and the plans for our occupation of the building are well advanced. There is more to this shifting in business, of course, than meets the eye and it may be late February before any semblance of order will start to emerge from the dust of battle. The first of the jobs associated with the shift started in mid January and it is hoped to retain the Queen Street premises until everything is ready at the new abode to avoid the inevitable pile ups that result from a hurried shift.

President Fred has the organisation of the shift well in hand and intends to give us a full report of progress at the February meeting. Members will also be given the opportunity for a general discussion on the building project and members of the Building Committee will be on deck to answer questions. By the date of the meeting the arrangements for financing our building should be pretty well in shape and members will be given details of the proposals.

Our President has been busy getting the new transmitters into shape for the new location and has run into a bit of bother with "talk back" from the modulation transformers. Apparently this was a characteristic of the BC810 and was built in to afford a rough type of monitoring under service conditions. The feature is not particularly suitable for our purposes so Fred has arranged for the transformers to be tightened and potted to see if they can be quietened down somewhat. Because of this and the necessity to build up ancillary equipment, the new transmitters may not be ready for a week or so in the meantime it may be necessary to set up the old tx in the new building as a temporary measure to fill the gap. However, it is hoped to avoid this if possible to save the extra work. As there will be no further Sunday morning broadcasts from Queen Street, it is probable that these will be carried on from members' homes until the Victoria Street address is in operation.

In addition to the above the agenda for the February meeting includes an address from Alan Swindon, ex-VS9AS, who will give us the inside story on his sojourn in Aden, including a look-see at his equipment, so all told it promises to be a very interesting meeting.

Congratulations are offered to Bill Butement (VK3AD), a member of the Victorian Division W.I.A., who was shown in the recent hours list as being promoted from O.B.E. to C.B.E. He is chief scientist with the Dept. of Supply.

WESTERN ZONE

We had a nice gathering at our Annual Convention held in the Gardens at Horsham on Dec. 14. It was a very informal gathering of the clan. There were about 20 members present, together with KYLs and harmonics, also some members of the Radio Section of the local Rural Fire Brigades.

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After enjoying a picnic lunch, we held our meeting while the women folk made a tour of the gardens. Before the meeting commenced, members stood for one minute's silence in respect of our late member, Mr. Jim Farrer, VKSDP.

New office-bearers elected were: President, Herb 3NN; Vice-Presidents, Gordon 3GW and Bert 3EF; Scribe is still Secretary & Treasurer.

NORTH EASTERN ZONE

Xmas Day in VK2 land way out west, sunburnt country, hills and flowing plains, rugged mountain ranges and no radio (ham) within miles. Bruce 3AGG on holiday with XYL and harmonics with very strict instructions from XYL about ham gear, all to be exact. Never mind Bruce, I had a similar set of instructions and I am sorry I did not obey them. Wonderful location here for DX. 3ALE has at last the official word to migrate to VK4. The zone wishes you all the best Les and we do hope to QSO occasionally.

3KR's XYL in car accident recently. We hope that XYL and car did not suffer very much damage and that both have been repaired. Would like to welcome to the zone 3APL of Shepparton and 3ZGR via Benalla. 3ABX is in new QTH at Mt. Beauty, while 3AEU of Smoko has a 20 mx rig unmodulated. Hope you find the wog Arthur and get amongst that DX. Looking through the R.D. Contest results, I notice a disappointing number of logs from this zone, three to be exact. Not exactly a good representation. Let's do better next time fellows. Only thing from Wang, 3YV and 3JK, is that these boys are selling quite a bit of equipment. I hope this doesn't mean you fellows are going QRT.

3CI getting a fair share of Interstate DX on 6 mx during recent openings. Sid welcomes any contacts on 2 and 6 mx; Z calls take note. 0LJ, late of our zone, will be home early in the new year after a sojourn at Mawson. Doug. will have quite a lot to tell for those interested.

Jim Harrington now ready for the Bushfire Net at Euroa Country Fire Authority, not to be confused with the Ham net of which I haven't heard a thing, what goes on Henry 3HP? A line or two from you would help a little. The Xmas spirit has caught up and I am afraid I am unable to write coherently, so see you in the new year.

MOORABBIN AND DISTRICT RADIO CLUB

The annual general meeting last November resulted in the following being elected to the committee: Jack Hudson (President), Bob Hall (Vice-President), Laurie Walters (Secretary), Peter Downie (Treasurer), Ian Caporn (Assist. Sec.), Ed Manifold, Arthur Oakes and Ron Hildebrand (committee members).

It was decided not to hold a picnic this year and it was hoped that members would participate in the National Field Day instead.

We have received the very good news that the Moorabbin Council hope to make a meeting room available to us again at the Council Chambers in the near future.

A visit to the Melbourne Observatory is planned shortly and members will be notified in due course.

Our first honorary membership certificate to go to a New Zealand station was awarded to ZLZLJ. The rules for the award of the honorary membership certificate have been amended and brought up to date. It is hoped that the new rules will be published in "A.R." shortly.

Our last meeting for the year took the form of a Xmas Get-together at the shack of Ed. Manifold in McKinnon. Many a glass of amber and other coloured liquids was consumed and many a tall story swapped! Once again our heartfelt thanks to Ed. for making his shack available.

The club extends wishes to all readers for a happy and prosperous new year, with loads of DX!

QUEENSLAND

TOWNSVILLE

The wind-up of the year's activities by the local club was a get-together at the rose garden of local corner shop, where many 80's were broken. A good time was had by all with the exception of a few who stayed at home to work DX on 10 mx while the top notchers for this band were busily snopping tall yarns about countries that got away.

I wonder has anyone got down to analysing the response to the I.T.U. Appeal. I for one took out the following figures: Townsville alone, 30 call signs, 11 contributed. Queensland, approx. 500 call signs listed, 113 did the right thing. No excuse as all call signs had received a card through the post. Was amazed to find some old timers who are very active fell by the wayside. This includes all contributions up to "A.R." Jan. '59.

A recent visitor to Townsville from Woomera was Jim Frost on holidays. While here, he organised a moon-watch group and invited all Radio Amateurs along. Quite a large roll up and resulted in Mr. Tweedie, of local astronomy group as Chairman, Allan 4PS as Secretary, and Bob 4CR as Communications Officer. All other Amateurs to help out as required. Nothing being heard on 20 mc. at time of writing of the Russian moon rocket.

Rex 4LR, who passed his entrance exams to the University, has disposed of most of his gear. The boys wish you all the luck in your studies, Rex. Allan 4BE holidaying in Sydney and promises to do the shops and disposal yards over and bring back much gear. Hope the necessary db's. hold out. Vern 4LK called

in during his visit to T'ville today after calling on the local Z call signs. Quite thrilled to have at last established a link on 50 Mc. between T'ville and Charters Towers. Ted 4EJ holidaying at Magnetic Island, was not allowed to take any rig over there. Len 4GD and Eric 4EL ganging up on the DX on 28 Mc. Jack 4DD bobbed up on 14 Mc. What a surprise! Some of the locals up in arms at the audacity of a pirate in using their call signs. He will be made walk the plank if caught. Bazam 4ZW busying amongst the far northern boys in arranging a trophy to perpetuate the memory of Andy 4BW.

I was glad when the local radio inspector called on Friday for annual inspection, as the noise level was at it worst on all bands, it being 9 plus which ever band he tuned. Have been promised a visit very shortly with the van in an attempt to locate my bug bear. Here's hoping it is found and cleared up, then my far northern boys will hear me again on 7 Mc.

Ron 9RO, ex-5RG, unable to get permission to again visit VK0, went to the other extreme and went for the heat in Port Moresby, doing a good job there helping out on the Sunday mornings with the VK9 net. Must get down to a rag-chew one of these days. Don 4FW also on holidays. While John 4FP also holidaying in N.Z. using a mobile call, ZL2AZU called in and established a four-way between Frank VP6KL, VK4DO and VK4RW. John quite pleased with mobile gear working so well on 21 Mc. Wally 4RU almost finished re-building and should be on the air ere these notes appear. Anyone help with the circuit of a Kingsley R8er or KF/C610 Converter for 50 Mc.? Please contact 4RW.

SOUTH AUSTRALIA

The fellowship available resulting from W.I.A. membership was clearly shown at our Christmas meeting, when a record attendance of members came along to "talk-it-out" in a very pleasant atmosphere.

Many visitors were welcomed including Mr. Trainer and Merv. Brown who met many of the gang who before were perhaps but call signs to them.

The proceedings opened with three excellent films arranged by Vice-President Lloyd and Jack Watts, which were very well received. Subjects covered being the paper pulping and manufacture industry, the newspaper publishing business, a trip to the Antarctic with a scientific expedition, and a highlight showing the effect of insect pest life on world food production. Some of the finest photography viewed for many a long day was seen in that film, the close-ups and magnification of the insects and their antics were spectacular to say the least.

The class was not run that night so all class members got along to meet the gang and hear how the old timers (and some not so old) talk. We were pleased to see them, too.

Joe 5JT was present. It was a pleasure to see him mixing with the young-uns, we don't often see him at the meetings but of course most of you know he does a lot of behind-scene work in handling all the official communications.

Tom 5AQ was down from Leigh Creek, a bit irksome in collar and tie, but for all that enjoying the party in the cold south. Harvey 5HQ and Les 5LC were also seen mixing around so you see they all came out of hiding for the Christmas "Do". One thing Council will have to consider some time is a large meeting room for the present quarters were taxed that night, and with ever growing membership, it will crop up before long.

Supper provision was by basket. Doc 5MD and his gang supervising distribution, whilst Jim 5FO with attendant waiters dispensed coke by the gallon. The head waiter and table cloth layer, Jim Paris, was, as usual, bedecked in his regular paper apron, but it was noticeable this year that the table cloth finished up with no outstanding circuits to add to the knowledge of passers-by.

Last year you might recall that Les 5AX designed his pre-amp. between a plate of buns and a bottle or two of coke.

The three musketeers, Athol 5LQ, Lionel 5LB and Jack 6LN, were as noisy as usual, but Athol a little worse than usual, for arriving without any cigarettes, put the nips into your scribe (not Pansy this time) and smoked heavily of Gawler brand all night. Athol's G4ZU beam is slowly taking shape, it was at the pre-drawing board stage two years ago and has now reached the stage when the



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pencils are being sharpened. In the interim a rusty trusty dipole feeds the air from his way.

Many thanks to Warwick SPS for helping me out last month—at this stage do not know what he put in the notes—but by the look on his Fabian countenance when I asked him, think the thanks might have to be withdrawn.

VK5 adds its congrats to F.C. for being able to and selecting John ZJU to represent us at I.T.U., it's hard to think of that conference without some misgivings, so we are lucky to have someone with John's background, both commercial and amateur, to push our barrows for us.

Had an interesting contact on 21 with Rob 9RO (ex-5RG) recently and pleased to advise all that he has settled down up in N.G. and looks for VK5 contacts. By the way, anyone heard of G3HC on 21 c.w.? He is on the lookout, but to date nothing heard of him here.

A few members have enquired about membership certificates not coming to hand. If you haven't received yours, then enquire from Secretary John 5JC and he will bring the matter right. A change over of Secretaries upset the smooth flow of these things.

Burnie 5WC advises the new shack in the old place or the old shack in the new place, most likely the latter, and that operation therein is to be resumed very soon. A busy bee wiring up changing over antennae, etc., all at the hottest time of the year, the cause of the slow down.

Growing interest in s.s.b. evident in VK5, a couple of newcomers in Bram 5AB and George 5GD who have been bowling them over with this method. The Magazine Committee have a proposition before them of an excellent series of articles on s.b. that may appear soon, and shows just how it can be done without too many headaches.

Every now and then the post session call-back produces a new call sign; recently Brian 5EM announced his entry (Ardrossan) and using a Type 22 does a good job this way. Cess 5BZ similarly popped up one Sunday, and then finally Joe 5JT although not a newcomer to the bands, fed 40 mx into a 20 mx folded dipole and made a real hole in the ether. Slumming it a bit isn't it Joe to come on 40 mx?

Joe 5JO on the bands again, very good to hear you Joe, don't overdo it, but bob up now and again, we like your brand of humour, of course the QSO he was in included Athol SLQ and John 5QL and Les 5AX. Who wouldn't get a bit mixed up with a mouthful like that?

And then that character Frank 5MZ, who, en route for VK3, dropped in at some unearthly hour and awakened Jack 5AM at Murray Bridge. Somewhere about 10.30 a.m. I think it was, anyway by 10.31 a.m. Jack had the rig on the air to show Frank how it sounds away from the city. How is the physical culture Frank?

Graeme 5XV now has a rig of his own, well, nearly. The final was donated by Pansy SPS (hurray that puts him off the air—me, not Ed.), sorry it should read 5WC, whilst Pansy donated the modulator. Gordon supplied (unknowingly) an r.f. choke for the final, a resonant one too if you please, which has now joined the box where all resonant chokes finish up. Anyway, this charity tx uses 6AG7, 6AU6, 6V6, 6V6, 6V6 (forget how many) into an 813. Modulator 807s in some class or another, but knowing where they came from think no class at all. Poor Pansy now on c.w., hi! (That bunion will make it bard.—Ed.)

An excellent signal from Leith 5LG recently with his new gated screen modulation in action. He has promised an article on it soon, must be easy to get going from all accounts, for it contains three low-level tubes only and on his 8146 final does not need screen protection. This is quite a feature for any of you who have used this fiery tube know how it needs holding down in ordinary circuitry.

Have just received Jan. "A.R." and what a Pal Pansy has turned out to be. Said I might have to withdraw thanks! Withdraw is right. Never again, or nearly never again, why? Have six duels to fight, weapons most likely sideband filters or derelict c.w. keys, and a bucket full of libel cases coming up.

For a long time now have been trying, and I think nearly succeeded, in eliminating from the printed word from my scribble, the little extras that some bloke called Ed. in brackets pokes in, and now in one splash Pansy undoes all my efforts. Why, you model for Berle! Wait till you call CQ next Easter, I'll answer you with suppressed carrier double suppressed sidebands, that will trick him.

Council doesn't have to wear sack cloth now anyway, that was dealt with years ago when we sacked the only one who made it necessary to use the stuff. Never going near a race-course now has improved the prosperity no end. Mr. Pincott, Sir, have nothing to do with you know who, hope Doc feeds him sometimes.

WESTERN AUSTRALIA

The Christmas meeting was held in the annexe on the third Tuesday in December. A very large attendance was noted, including quite a few of our old timers. Much chewing of the rag was indulged in by those present. The occasion was unique in that two of our three life members were present—Wally 6AG and Skipper 6WS. Skipper, who gave up operating because of blindness, is hoping to become active again. He is 86 years of age. 6AG is working on plans for a xtal controlled 40 and 80 mx rig. During the evening, Wally 6AG showed slides of wild flowers and wall flowers. Both were much appreciated.

Activity on 80 and 40 mx is very low at present, not an unusual state of affairs during the summer time. Sunday morning usually sees quite a bit of 40 mx activity. From the experience of the writer who did the "News" for two Sundays, the session appears to be very popular, reports coming from quite a number of stations. The last Sunday in December saw the News Service broadcast to the Eastern States as six mx was wide open at the time.

During December, Alex 6AD and Wally 6AG had the opportunity of meeting at the boat G3IGN (Neil Campbell) whose migration to Australia was aided by this Division. Alex entertained Neil and family for the day, taking them back to the boat at night to continue their journey to VK3. News has since been received that Neil lost his second son in a tragic accident soon after landing in Melbourne. We are very sorry to hear this and pass our sincere sympathy on to Neil and his family.

Christmas day saw a great deal of activity on 40 mx, when, apparently, most VK6 stations who can operate the band, took the opportunity of wishing the compliments of the season to fellow Amateurs. I did not log the number of stations active, but the band was reminiscent of the 40 mx scramble.

The 6 mx boys continue to have a good time on 50 Mc. Several very good openings have eventuated into VK2, 3, 4, 5, 7 and ZL. Most of the boys have worked in these openings. 6 continues to be the most active band in VK6 with about 30 active stations. About 22 of these are limited licensees.

I have heard from Allan 6MA, who is now resident in Childlows. Unfortunately Allan has no power and transmitters cannot be run on kerosene, so the Amateur operating is impossible at present.

That's the lot for now fellers, so I will close, belatedly wishing you a happy and prosperous year in 1959.

TASMANIA

NORTHERN ZONE

The last meeting for 1958 was held at the home of our President Geoff on Friday, 12th Dec. This was our Xmas Party and meeting combined and about nine members turned up to make it a very good meeting. A vote of thanks for the excellent spread provided was passed to Mrs. Crompton.

Good wishes were also handed to Henry who sits for his A.O.C.P. this month and by the time this is in print we should have another VK7 to our credit. All the best, Henry.

I must let you into my new year resolution to get my ticket this year (I hope). So what about the other associates having a go too? (Commandable thought.—Ed.)

Our January meeting is to be held at George Town where we are to be the guests of George 7GC and I will report on that evening next month.

I have been having a very lazy time enjoying a holiday at Ulverstone, so if news seems a bit scarce I'm afraid that we will have to blame the holiday "atmosphere". Last night I visited my North Western Zone counterpart, Terry Tongs, and found him very busy with sheets of aluminium aerial poles and TU6B tuning units scattered all over the place, so I don't think it will be too long before Terry is calling CQ.

Tonight I am travelling to Burnie where I hope to visit some of the chaps and meet them for the first time.

Well chaps, I guess that will be all for this month so cheerio for now and all the best in '59 for our hobby, Amateur Radio.

NORTH WESTERN ZONE

Well chaps here we are well on the way into the new year; trust all have survived the Xmas and New Year break and are once more safely back at the grindstone.

Our last zone meeting was held in December but the attendance was down on the usual run. Let's make a new year resolution chaps 'to attend all meetings if at all possible'. We have a large number of associate members and

it's up to licensed members to do their utmost to keep them both interested and keen with a view to their gaining their license.

At the meeting (the last for the old year) it was decided to hold a tx hunt on 14th Dec. The hunt to be in two sections; the first a short run to enable all participants to turn up at the hiding place more or less together and in reasonable time for dinner. During dinner the tx to be re-hidden in preparation for a second hunt in the afternoon.

It was decided not to hold the instruction night in January owing to so many members being away from their usual QTH. Next meeting being a general meeting (on Feb. 3) with perhaps another tx hunt beforehand. There was a good article on radio direction finding in the Jan. issue "A.R." so perhaps we will see some improved gear at future hunts.

Visitors, and I hope eventually members, in Geoff Sharp and Winston Nicholls, were welcomed. A much appreciated supper was served by KYLs and Max 7MX officiated as auctioneer, there not being quite the usual quantity of "junk" to be disposed of.

The tx hunt was duly held on Dec. 14, Les 7KC being the fox with his miniature 4w. rig which nevertheless put quite a healthy signal on the air. Yours truly was lucky enough to be first to locate hiding place while a couple of others (no names) had to be talked in through the agency of Dennis 7DR operating from his home QTH. For the second run, 7MF got to the finishing line first hotly pressed by all other entrants in a string. Really a lovely spot on the eastern bank of the Forth River, Fulton Park.

Lee 7KC is in the throes of re-building and is having some fun with a v.f.o. which develops grave instability on the 40 mx band; humorous I don't think.

Had a visit from associate David Waldon last night who brought along his brother Ray (Northern Zone scribe). David's Morse is showing great promise. Hope to see some of the doings of the Northern Zone in print soon too, Ray.

Adjust your social calendar chaps and keep those first Tuesdays in each month free. Do your best to attend all meetings, please.

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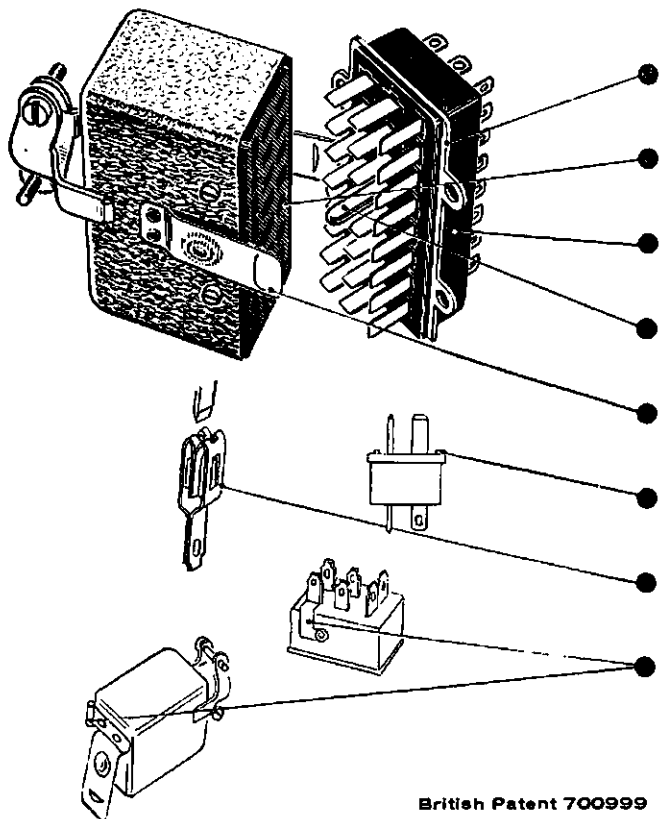
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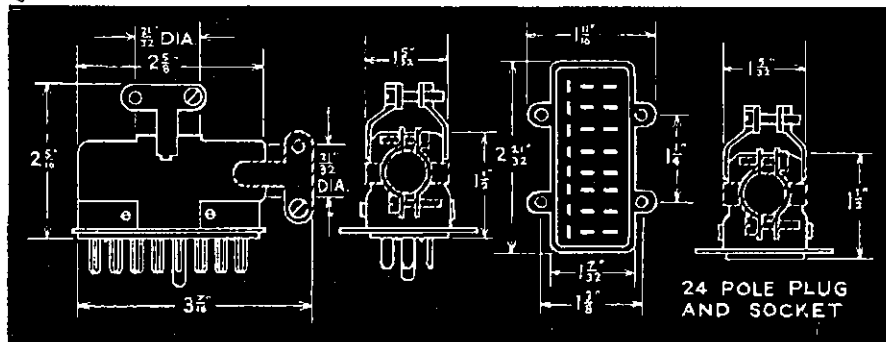
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AMATEUR RADIO

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EDITORIAL



SILVER ANNIVERSARY CONVENTION

Once again it is Federal Convention time, and the 25th Federal Convention will be held over the Easter week-end from March 27 to 30. The coming weeks will see the culmination of two years of effort since the last Convention in preparations for the Extraordinary Meeting of the Radio Conference of the International Telecommunication Union.

It is more than 25 years since the first Federal Convention was held and it is certain that our early delegates and the Federal Headquarters of that time would agree that the coming meeting was the most important of those held during the long history of the Institute. The issues that are at stake are big and the future of the Institute and Amateur Radio in general may well depend on the deliberations at the Convention.

Although there will no doubt be matters of a general and domestic nature to be discussed also, the main work of the Twenty-fifth Federal Convention will be to prepare the brief for our delegate and to detail the policy to be adopted on various matters which are likely to be argued by delegates from all countries participating in the discussions at Geneva. Liaison has already been taking place between the Institute and the other major radio societies of the world so that a common pol-

icy for the Amateur Service may be achieved.

It is this liaison and that which will take place at Geneva itself between Amateur delegates that made it imperative to have our own delegate in attendance, and the reason for the Federal Executive's campaign for funds to finance the venture. Our finances, are now such that we are confident of our delegate going to the Conference, but we must still reach our target to help to make his stay in Geneva comparable with other representatives who will be present for the complete duration of the Conference.

It is to be hoped that all Divisions knowing the importance of the coming Convention will brief their delegates accordingly and give them such powers as necessary to make decisions "on the spot", and to present in the main only those matters that are significantly policy and regulatory ones.

Our official delegate to the I.T.U. Conference will be present at the Convention, and it is our duty at this "Silver Anniversary" of Federal Conventions, by the unanimity of discussions and singleness of policy, to give him our brief for Australian Amateurs in general and our confidence in particular. Help us to help you make this a momentous occasion for the Wireless Institute of Australia.

FEDERAL EXECUTIVE.

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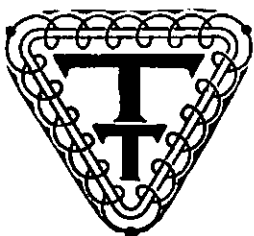
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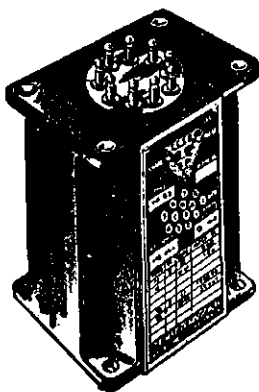
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A.C. Power Supply for the No. 22 Set

C. S. RANN,* VK3AAK

AS No. 22 and No. 122 sets are being released from disposal sources and are appearing on the Amateur bands in increasing numbers, it was thought that a description of an a.c. power supply for these units may be of interest.

The units are designed for use with a 12v. accumulator, and the construction of an a.c. power supply to run the unit is complicated by the two following difficulties: (1) There are battery tubes in the unit which require a low d.c. filament supply; (2) The battery power supply that goes with the unit contains vital parts of the circuit, such as switching relays, therefore it is difficult to do without this unit.

On considering these two difficulties, it was decided to construct a 12v. d.c. power supply, to replace the 12v. accumulator, rather than to try and replace the d.c. power supply of the unit with a normal mains power supply. Another attraction of constructing the 12v. power supply was that it could be used as a battery charger—an item that has long been required at this QTH.

Once having decided in principle that a smoothed-out battery charger was the most convenient means of powering the rig, a little reflection on the currents involved showed that it was not going to be easy to obtain adequate voltage regulation between transmit and receive. The most likely solution is probably to float an old accumulator between the battery charger and the unit, however I did not want an accumulator in the house so I set about trying to design a power supply that would stay at 12v. when the load varied from approx. 2-6 amps., i.e. 300%. This is such a large variation that the task appeared impossible. Indeed it did prove so using several conventional methods of improving regulation.

In these tests a bridge rectifier (STC B112-1-1C) was used to give full wave rectification and a heavy choke from an old-time movie projector (d.c. source for the sound lamp) with two 5,000 μ F. smoothing condensers was available to smooth out the supply. The main item of the unit was a variable gap battery charger transformer supplying voltage from 3-40 volts at up to 10 amps., and was very attractive from the battery charger angle. Unfortunately, it is believed that these are no longer available. However, multi-taps on a high current transformer could be substituted providing a reasonably close control of voltage can be obtained.

With this basic equipment, a normally smoothed circuit was tried and the regulation was so bad that there was a voltage drop of over 5 volts between receive and transmit. Re-arranging components and introducing more inductance or capacitance all gave much the same result, with no apparent hope of a satisfactory solution by this means.

Next a battery regulator from an I.F.F. unit was tried. In this unit the load is taken through a carbon pile, the resistance of which can be changed by

MODIFICATIONS TO THE NO. 22 OR 122 SETS

As this magazine is desirous of publishing details of any alterations to improve these sets, members can assist other Amateurs by forwarding details of their work for inclusion in a series of articles on the modifications to these sets. —Editor.

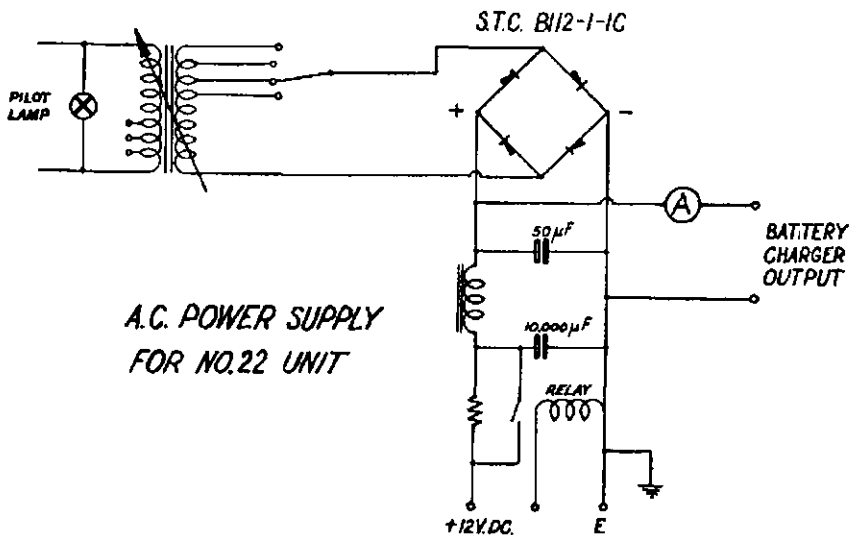
a solenoid compressing the tablets of the pile. The current through the solenoid can then be adjusted in direction and magnitude to give the desired regulation.

Connections in series, parallel and combinations of both were tried with the solenoid coil, carbon pile and power supply. A variable resistor was connected in series with the solenoid to vary the current in these tests. Of all the tests tried no combination gave a satisfactory result although better regulation was obtained than without the pile. If a pile designed for 12v. use

activating the shorting relay. I finally decided to use relay RL2 contacts 1 and 2 in the power supply. Contacts 1 and 2 switch the 12v. input from the battery into the second vibrator unit when the unit goes over to transmit. By taking a lead out from contact 1 on RL2, 12 volts is supplied to the shorting relay whenever the unit goes to transmit. This voltage is brought out through the power plug which is a four-pin connector. In the original wiring two pins are wired in parallel, one of these pins was disconnected for carrying the voltage back to the shorting relay. Using this system does not upset the No. 22 wiring, and the unit can still be used in the conventional way with an accumulator.

The series resistor used was obtained from the junk box. It has two ohms resistance and can take up to 20 amps. It was made variable with a slider and adjusted to give perfect regulation in practice. The shorting relay was an ordinary 12v. disposals relay also from the junk box.

For battery charging use, a separate output with a meter is taken from the



A.C. POWER SUPPLY FOR NO.22 UNIT

could have been obtained the result may have been different.

After further thought on the problem it became apparent that continuous voltage regulation was not really required, but regulation at two specific loads was actually the requirement. Once this was fully appreciated the solution became apparent. A resistor could be put in series with the load; this resistor could then be shorted out with a relay on transmit. This idea was successful on the first try. The only difficulty was to short out the resistor automatically when the unit went over to transmit.

As the No. 22 has a large number of relays built in, and as they are all very busy flopping one way or the other on transmit, I decided to look around for one that could provide 12v. d.c. for

output of the rectifier before the main smoothing unit. An external switch (T.U. unit switch) is also provided to select different taps of the battery charging transformer, also the variable gap control of the transformer has been brought out to the front panel. As a battery charger the unit is very versatile and can charge at up to at least 10 amps.

The unit described above has been working perfectly on the air for many months. It has also been working as a battery charger over the same period, and on no occasion has it given any trouble. There may be other ways of putting the No. 22 on the air with an a.c. supply, and if so, I hope they will be described. However, this method certainly works well and can be recommended for reliability.

* 2 Georgiana St., Sandringham, Vic.

PREDICTION CHART, MAR. '59

Mo.	E. AUSTRALIA — W. EUROPE S.E.	Mo.
0	2 4 8 8 10 12 14 16 18 20 22 24	45
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E. AUSTRALIA — MEDITERRANEAN		
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E. AUSTRALIA — N.W. U.S.A.		
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E. AUSTRALIA — S. AFRICA		
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W. AUSTRALIA — W. EUROPE		
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W. AUSTRALIA — N.W. U.S.A.		
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W. AUSTRALIA — FAR EAST		
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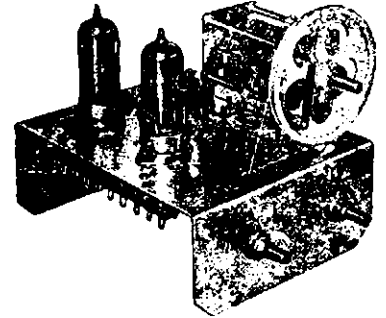
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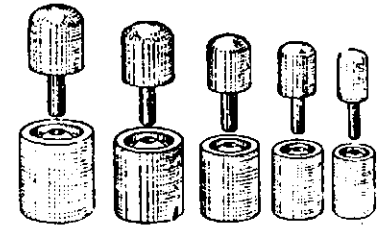
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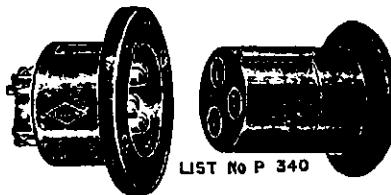
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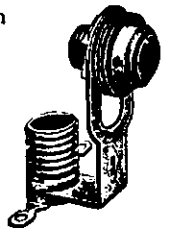
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A Noise Limiter for Mobile Work

LES JENKINS,* VK3ZCN

VERY few mobile operators have not suffered at some time the problems of Ignition QRM. This would be by far the greatest problem which faces the designer of mobile receiving equipment, whether for v.h.f. or the lower bands.

Most of the better known systems of noise limiting give, at best, a poor performance and usually introduce more than a tolerable amount of distortion.

When a new mobile rig was built recently for use on the two metre band, it was decided to try and overcome this problem once and for all. The results were so much an improvement that it was decided to put pen to paper and share this one with all interested parties.

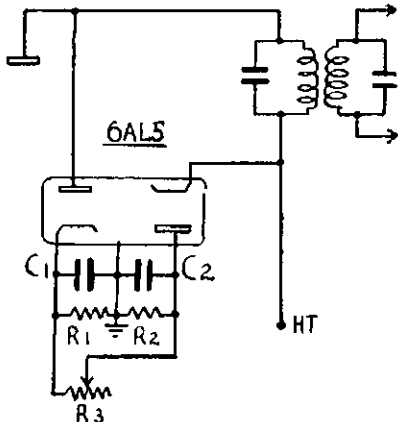


Fig. 1.—Mobile Noise Limiter.

C1, C2—0.1 μ F.
R1, R2—0.5 megohm.
R3—1 megohm.

The circuit is very simple and, if room is available in the rig, its inclusion is recommended to those troubled by ignition noise, both from their own or passing cars.

The principle of operation is quite novel, and a few words on that subject seem in order. Referring to the circuit (Fig. 1), the dual diode is connected across the primary of the last i.f. transformer. When a signal is impressed across this tuned circuit, the capacitors C1 and C2 will charge, and if we neglect voltage drop across the tube resistance, the charge will equal the signal voltage. This will bias the diodes off, so if no discharge path (R1, R2, R3) was present, no further conduction would take place. Due to the presence of these resistors, the charge on the capacitors follows normal amplitude changes.

When impulse noise is present, the tuned circuits in the receiver tend to "ring", producing high amplitude wave-trains at the i.f. This effect is overcome in the limiter, as the diodes will conduct heavily if the instantaneous value of voltage applied to the diodes is in excess of the bias level (EC1—EC2). This heavy current damps the ring, at

the same time lowering the Q of the tuned circuit, reducing the response of the receiver for the duration of the pulse. This effect is assisted if the core of the transformer tends to saturate at the same time, lowering the transfer of energy from primary to secondary for the pulse duration.

To be effective in the elimination of a succession of pulses, the capacitors must be able to discharge toward the average bias level in time to operate on the following pulse. This is taken care of by the control R3, which provides a variable time constant for the discharge path. This control is best located in an accessible position for the operator, and is varied to achieve best suppression. It has been found in practice that this position in no way alters the normal receiver performance. No noticeable distortion is introduced on normal signals, but some overloading occurs on extremely strong ones. Under such conditions, the control is used at its maximum resistance position. It will also be found that normal thermal noise can be suppressed under weak signal conditions, although in this respect the limiter is not as effective as more conventional types. On ignition noise, however, its effectiveness is akin to magic!

As an example, a recent contact from Ballarat to VK3AGV at Colac was carried out whilst mobile. Although Gordon's signal varied from S2 to S7, no difficulty was experienced in copy. At no time was any trace of ignition noise present. Prior to this limiter being fitted, a conventional one was used and signals below S5 were impossible to copy.

The use of this limiter is recommended to v.h.f. operators who are troubled by auto QRM at the home QTH. There is no reduction of receiver sensitivity in any way, so it offers a solution to the age-old problem of the city bound v.h.f. enthusiast, particularly on six metres.

The receiver to which this limiter was fitted is a well known commercial car radio, which is fed from a crystal locked 2 metre receiver. The antenna is a "halo" mounted on the sun visor with co-ax feed. This circuit solved the problem, when the only solution seemed to be to buy a diesel!

So good mobile DX, chaps!

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A SIMULTANEOUS R.F. BRIDGE INDICATOR*

BOB FORMAN, W9RJH

The writer was given a dual scale aircraft oil temperature gauge by a generous friend (W9LTI) some time ago and, like any red-blooded Ham, refused to throw it away.

Months later, in search of a lower standing wave ratio, a Micro-Match coupler was purchased with the idea of using it with an existing multi-meter, as an indicator. After changing the test leads back and forth a few times, the light came on and the dual scale meter was carefully removed from the junk box.

After removal of unnecessary parts, the movements were connected to a two contact mike jack on the rear and the coupler unit was fitted with a mating connector.

Since the interest here is in low power, it was unnecessary to add a scale multiplying arrangement of any kind. Above this figure it will be necessary to provide attenuation for higher power readings.

A new scale was constructed and calibrated in the standard unit of Amateur power measurement, the Gob. Since the meter originally contained quite a number of correcting chokes, presumably made up to match the sensing elements in the original installation, it was found that the meter movements were neither linear nor logarithmic, so no attempt was made to calibrate the scale accurately.

The indicating needles were originally painted with luminous paint. In the conversion, the pointer indicating reflected power was painted red and the other black. Every fifth line was inscribed in red to aid in counting and to avoid the necessity of numbering or worry about figure placement, on the small scale. Photo fans could, of course, have a field day in scale design with such a unit.

The convenience of being able to read both powers at the same time repays the efforts of construction many times over.

[There are many similar meters going cheaply in disposals and twin 100 μ A. direction indicators should be ideal. —Editor "A.R."]

* Reprinted from "CQ", Dec. 1958.

W.I.A. SOUTH WEST. ZONE CONVENTION

will be held at
GEELONG

on

11th and 12th APRIL, 1959

A welcome is extended to all those interested to attend. Activity mainly will be centred on 3.5 and 7 mc. and v.h.f. Hotel and dinner bookings must be made not later than one week prior to Convention—10/- deposit for hotel booking.

Further information is available from Geelong Amateur Radio Club members and Sunday morning VK3WI Broadcast.

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MAGNAVOX STANDARD RANGE SPEAKERS

	MODEL 12P1	12P2	10P1	10P2	8P1
Overall Diameter	12 $\frac{1}{4}$ "	12 $\frac{3}{4}$ "	10 $\frac{1}{2}$ "	10 $\frac{1}{2}$ "	8-3/16"
Baffle Opening	11"	11"	8 $\frac{7}{8}$ "	8 $\frac{7}{8}$ "	7 $\frac{1}{8}$ "
Voice Coil Diameter	1"	1"	1"	1"	1"
Voice Coil Impedance ohms at 400 c.p.s.	2.7	2.7	2.7	2.7	2.7
Cone Resonance Range c.p.s.	15-75	45-75	80	80	95-130
Power Handling Cap.—Watts	10	10	8	8	7
RETAIL PRICE	81/-	66/-	75/6	64/1	63/-
POST VIC.	2/11	2/11	2/11	2/11	2/3
INT.	4/4	4/4	4/4	4/4	3/8

	MODEL 8P2	6P1	6P2	5P1
Overall Diameter	8-3/16"	6 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	5 $\frac{1}{4}$ "
Baffle Opening	7 $\frac{1}{2}$ "	5-9/16"	5-9/16"	4-13/16"
Voice Coil Diameter	1"	1"	1"	$\frac{3}{4}$ "
Voice Coil Impedance ohms at 400 c.p.s.	2.7	2.7	2.7	2.7
Cone Resonance Range c.p.s.	95-130	80-120	80-120	135
Power Handling Cap.—Watts	7	6	6	4
RETAIL PRICE	52/6	58/6	51/5	42/6
POST VIC.	2/3	1/10	1/10	1/10
INT.	3/8	3/-	3/-	3/-

MAGNAVOX WIDE-RANGE SPEAKERS

	MODEL HF5	6WR	8WR	12WR
Overall Diameter	5 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	8-3/16"	12 $\frac{1}{4}$ "
Baffle Opening	4-13/16"	5-9/16"	7 $\frac{1}{8}$ "	11"
Voice Coil Diameter	$\frac{3}{4}$ "	1"	1"	1"
Voice Coil Imped., ohms	2.7	2.7	2.7	2.7
Cone Resonance, c.p.s.	130	45	45	45
Frequency Range	130-10K	30-15K	30-15K	40-15K
Power Hand. Cap., watts	4	6	7	10
RETAIL PRICE	55/11	£6/10/0	£6/0/0	£7/9/7
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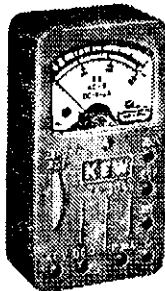
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A.C. Volts: 15/150/750V. (1,000 ohms/V.)

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Resistance: 100K ohm (by 1.5v. internal bat.).
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Size 4 $\frac{1}{4}$ " x 3 $\frac{1}{2}$ " x 1 $\frac{1}{4}$ ".

Model TK-50 is a pocket size individual jack-type circuit tester with an insulated panel and steel cabinet.

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A.C. Volts: 10/250/500/1000 (1000 ohm/V.)

D.C. Current: 1/250 mA.

Resistance: 10/100K ohm (by 1.5v. int. bat.)

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"KEW" MODEL TK-70

Size 5" x 3 $\frac{1}{2}$ " x 1 $\frac{1}{4}$ ".

Model TK-70 is a pocket size rotary switch type circuit tester with an insulated panel and steel cabinet.

D.C. Volts: 10/50/250/500/1000V. (2000 ohm/V.)

A.C. Volts: 10/50/250/500/1000V. (2000 ohm/V.)

D.C. Current: 500 uA./25/500 mA.

Resistance: 10K ohm/1 megohm (by 3v. internal battery).

Decibels: -20 to +22db., and +20 to +36db.

£9/1/4 + 12 $\frac{1}{2}$ % Tax. Post: Vic. 1/10, Int. 3/-.

"KEW" MODEL TK-90

Size 6" x 4" x 2 $\frac{1}{4}$ ".

Model TK-90 is a handy size rotary switch type circuit tester with a black bakelite panel and cabinet, having a high sensitivity 45 uA. meter 20,000 ohms per volt on D.C. and 8,000 ohms per volt on A.C.

D.C. Volts: 10/50/250/500/1000V.

A.C. Volts: 10/50/250/500/1000V.

D.C. Current: 50 uA./2.5/25/250 mA.

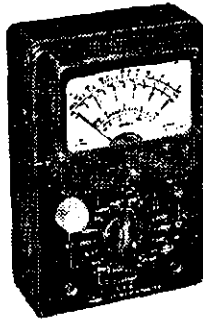
Resistance: 5/50/500K ohm/5Megohm (by 3v. internal battery).

Decibels: -20 to +5db. (0db.—0.775V.

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- ADF**—U.S. Navy Receiver. 15 to 1750 Kc. in six bands. Tubes: 6D6 (3), 76 (2), 6C6 (2), 41.
- AM-26/21-O**—Interphone Amplifier. Tubes: 12J5 (2), 12A6 (2). Designed for use from 28v. dynamotor.
- APA10**—Pan-oscillo. Receiver. 115v. a.c. operated and contains panoramic adaptor with i.f. of 405-505 Kc., 4.75 to 5.75 Mc. and 29-31 Mc.
- APN-1**—Altimeter: 418-462 Mc. Tx and Rx which measures 3 to 4000 ft. altitude. Size 18" x 9" x 7". Operates from 28v. d.c. and contains 12SH7 (4), 12SJ7 (3), 12H6 (2), VR150, 955 (2), 9004 (2).
- APN-4**—Radar Oscilloscope. 25 tubes measures 18" x 9" x 12", weighs 50 lb.
- APQ-9**—V.h.f. Radar.
- APS-15**—Radar set, 45 tubes, 3 meters, 4 x 115v. 400 cycle supplies, multi-vibrators, 5" and 2" scopes.
- APT-5**—Tx 1500 Mc. uses 115v. a.c. filaments, no plate supply. Tubes: 6AC7 (2), 6L6, 829 (2), 931A, 522, 6AG7.
- ARB**—Navy Receiver, 195 Kc. to 9050 Kc. Tubes: 12SA7, 12SF7 (4), 12A6. Weighs 28 lbs. Two i.f. 935 or 135 Kc.
- ARC-4**—Tx and Rx using four xtal channels in 140 Mc. range. 24 or 12v. d.c. Tx 7 tubes, Rx 13 tubes.
- ARC-5**—Navy aircraft equipment: Receivers: 190-550 Kc., 1.5-3.0 Mc., 3.0-6.0 Mc., 6.0-9.1 Mc. Transmitters: 500-800 Kc., 800-1300 Kc., 1.3-2.1 Mc., 3.0-4.0 Mc., 4.0-5.3 Mc., 5.3-7.0 Mc., 7.0-9.1 Mc., 100-156 Mc. Modulator MD-7/ARC5: two 1625 tubes.
- ARC-429**—Two-band Rx, 201-400 Kc. and 2500-4700 Kc.
- ARC-429A**—Two-band Rx, 201-400 Kc. and 4150-7700 Kc.
- ART13/ATC**—Collins Auto-tune Tx, 2.0-18.1 Mc. in 11 channels, 70 lbs. 150 watts r.t. or c.w. 813 final, p.p. 811 mod. V.f.o. and xtal calibrator.
- ASP**—Radar equipment, 515 Mc.
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- AVT-112A**—Tx, 2500-6500 Kc. phone. 6, 12, or 24v. d.c. Siz tubes, 6 lbs.
- B-19 Mark II**—Tx-Rx, 80 and 40 mx.
- BC191**—Same as BC375E except operates from 12 or 24 volts.
- BC221**—Frequency Meter. Up to 125th harmonic. Basic frequency 125-250 Kc. and 2-4 Mc. Accuracy 0.005%.
- BC222**—Rx and Tx, 28-38 Mc. and 38-52 Mc.
- BC223-AK**—Medium Frequency Tx. 801 osc., 801 p.a., 46 (2) mod., 46 speech amp., 10 to 30 watts r.t., c.w. or m.c.w. 4 xtal frequencies and v.f.o. on switch. 2000-5250 Kc.
- BC224**—Rx, 200-500 Kc. and 1500 to 18,000 Kc. 14v. d.c. dynamotor. Identical with BC348 except input volts.
- BC306A**—Antenna Tuning Unit for BC375 Tx. 150-800 Kc.
- BC312**—Rx, 1.5-18 Mc., 9 tubes, two r.f. stages. Tubes: 6K7 (4), 6L7, 6C5 (2), 6R7, 6F6.
- BC314**—Same as BC312 but covers 150-1500 Kc.
- BC322**—Tx-Rx, 52-65 Mc.
- BC342**—Same as BC312 but operates 115v. a.c.
- BC344**—Same as BC314 but operates 115v. a.c.
- BC348**—Rx, 200-500 Kc. and 1.5-18 Mc. Automatic noise compensator (neon), o.p. 300 or 4000 ohms, xtal filter, a.v.c., m.v.c., b.f.o. 6K7 (2) r.f., 6C5 osc., 6J7 mixer, 6K7 1st i.f., 6F7 2nd i.f. and b.f.o., 6B8 3rd i.f. and 2nd det., 41 output. Operates from 28v. d.c.
- BC357**—Beacon Rec., superregen., 75 Mc.
- BC375**—Tx, 150 watts, 200-12,000 Kc. less 550-1500 Kc. 211 osc., 211 r.f. amp., 10 speech amp., 211 (2) p.p. modulators, 5 tuning units: TU5B 1.5-3.0 Mc., TU6B 3.0-4.5 Mc., TU7B 4.5-6.2 Mc., TU8B 6.2-7.7 Mc., TU10B 10.0-12.5 Mc.
- BC403**—Radar Oscilloscope, 5" tube, 115v. 60 cycle operation. Part of SCR270 and 271.
- BC404**—Radar Rx for SCR270 and 271, covers 102-110 Mc., 12 tubes. 115v. a.c. 60 cycles.
- BC406**—Rx from SCR268, covers 201-210 Mc. 15 tubes. 115v. a.c.
- BC412**—Oscilloscope from SCR268 Radar.
- BC433**—Compass Rx, 200-1500 Kc., 112 Kc. i.f.
- BC450A**—Control box for BC453, etc., Receivers.
- BC453A**—Rx. This unit is one of series of aircraft Receivers. Weight 6 lbs. Size 5" x 8" x 12". Requires 250v. 50 mA. h.t., and 25.2v. at 0.45a. for fil. All have 300 or 4000 ohms o.p. and are for r.t. or c.w. Tubes: 12SK7 (3), 12SR7, 12A6, 12K8. BC453A covers 190-550 Kc., BC454A 3-6 Mc., BC-455A 6-9-1 Mc.
- BC456A**—Is Screen Modulator for the BC457A Tx.
- BC457A Series Tx's**. Designed for use with BC453A series Rx's, 30-40 watts. Tubes: 1625 (2) p.a., 1626 osc., 1629 magic eye. BC457A covers 4.0-5.3 Mc. xtal check on 4600 Kc. with 1629 eye.
- BC458A**—Same as BC457A. Covers 5.3-7 Mc., xtal check on 6.2 Mc.
- BC459A**—Same as BC457A. Covers 7.0-9.1 Mc. with xtal check on 8.0 Mc.
- BC603**—Receiver. 10 channel f.m., uses push buttons or manual. 20-30 Mc. 10 tube superhet, b.f.o., 12 volt operation.
- BC604**—10 channel f.m. Tx, push button or v.f.o., 20-30 Mc., using 1625 final, 20 watts. 12v. operation. 8 tubes.
- BC620A**—Tx-Rx covering 20-27.9 Mc. xtal controlled, f.m. 13 tubes: 1LN5 (4), 1299 (4), 6LC8, 1294, 1291 (2), 1LH4. Weighs 38 lbs.
- BC624**—Receiver section of SCR522.
- BC625**—I.F.F. Tx and Rx, 435-500 Mc. Weight 25 lbs. 400v. at 135 mA., plus 9v. at 1.2a. required. Tubes: 7F7 (4), 7H7 (4), 7E6 (2), 6F6 (2), 955, 316A.
- BC653**—Tx 100w. c.w., 22w. phone. 2.0 to 4.5 Mc. 814 (2) final, 807 buffer, 1613 m.o. and mod.
- BC654A**—Tx and Rx, 3.8-5.8 Mc. 12 watts phone, 25 watts c.w. 7 tube Rx using 1N5 (3), 1A7, 3Q5 (2), 1H5. 6 tube Tx uses 307A (2) in final. Requires 1.5v., 45v. and 90v. for Rx, requires 1.5v., 6v., 84v., and 500v. for Tx. Uses PE103A dynamotor.
- BC659**—Tx-Rx, f.m. r.t. only. 27.0-38.9 Mc. Xtal controlled, 2w., battery operation.
- BC684-683**—Tx and Rx f.m. 27-38.9 Mc. Rx 9 tubes, 10 channels, push buttons. 35w. Tx uses 8 tubes, 10 channels, push buttons.
- BC696**—Same as BC457A. Covers 3-4 Mc. xtal check on 3500 Kc.
- BC701**—V.h.f. Rx 170-180 Mc. Lf. 30.5 Mc. 11 tubes.
- BC704A**—Radar Indicator. Part of the SCR521. Tubes: 5BP1, 6AC7 (4), 6H6 (3).
- BC728**—Push button Rx. 2 or 6v. 2-5 Mc. 6 tubes.
- BC788**—Rx, 420-450 Mc. Six i.f. stages using 6AG5s. 30 Mc. broad-width.
- BC929**—Radar Oscilloscope, 110v. 400 cycles.
- BC939**—Antenna Tuning Unit for the BC610 Tx.
- BC946B**—Same as BC453A. Covers 520-1500 Kc.
- BC947A**—U.h.f. Tx, 3,000 Mc. 115v. a.c. with blower.
- BC966A**—I.F.F. approx. 150 Mc., 14 tubes.
- BC1023A**—Marker Beacon Rx, 75 Mc., uses 6S07, 6U6G, 6SC7, 12SH7. 12 or 24v. d.c.
- BC1068A**—Rx. See BC1161A.
- BC1072A**—150-200 Mc. Tx. 11 tubes, 115v. a.c.
- BC1161A**—Rx used with BC1072A, 150 to 200 Mc., 115v. a.c. Component of RC150 I.F.F. Tubes: 6SN7, 6H6, 6SH7 (3), 6AC7 (3), 6AB7 (2), 9006, 6J5, 5U4, 6E5. Same as BC1068A.
- BC1206C**—Sethell-Carlson Beacon Rx 195-420 Kc. Size: 4" x 4" x 6 1/2". Tubes 25L6 (2), 6SK7, 6SF7, 6SA7, 6K7. 28v. d.c. is high and low tension.
- BC1267**—Tx and Rx, 154-186 Mc. 1 kw. pulse osc. Superhet Rx, 2 r.f. stages, 5 staggered i.f.s.
- BD77-KM**—Dynamotor, 14 volt input, 1000 volts output, for BC191.
- C-1**—Auto Pilot Amplifier for Radio Models, etc. Tubes: 7F7 (3) amp., 7N7 (3) signal discriminators, 7L4 rectifier.
- CCT46077**—Tx, 2-20 Mc., 12v. operation. 30 lb. weight. Unit of RBM-2 equipment.
- CR746151**—Rx, 195-9050 Kc. See ARB.
- DAG33A**—Dynamotor. 18v. d.c. input, 450v. output at 60 mA.
- DM21**—Dynamotor, 14v. input, output 235v. at 90 mA.
- DM33A**—Dynamotor, 28v. input, 540v. at 250 mA. output. Power supply for BC457 Tx and Mod.
- EES**—Field Telephone.
- GO-9**—Tx, 200-18100 Kc., 150 watt, 803 final, v.f.o., 115v. 800 cycles.

* Wick Street, Dentilquin, N.S.W.

GF11.—Equipment consists of CW-52063A Tx, CW52014 Tx base, CW-23097 Tx base control box, CW23098 extension control box, CW23049 relay unit, CW47092 coil set.

GP-7.—Tx, 125 watts. 350-9050 Kc. Plug-in tuning units.

MIN-26.—Compass Rx. Models "A" to "G" cover 150 to 1500 Kc. two r.f. stages, i.f. 110 Kc. Model "H" top limit 9 Mc.

PC-77.—Dynamotor, input 12v., output 175v. 100 mA., 500v. 50 mA..

PE73-CM.—Dynamotor, input 28v., output 1000v. for BC375.

PE86.—Dynamotor, 28v. input, 250v. 60 mA. output.

PE101C.—Dynamotor, 12 or 24v. input, output 800v. 20 mA., and 400v. 135 mA., plus 9v. a.c. 1.1a. for BC645.

PE103A.—Dynamotor, 6 or 12v. input, 500v. 160 mA. output.

PE104.—6 or 12v. input, 90v. 50 mA. output, dynamotor.

PE109.—D.c. power plant. Petrol engine and generator, has 32v. output at 2 kw.

PRS-1.—Mine detector.

R5/ARN-7.—Radio Compass Rx, 17 tubes. Range: 200-1750 Kc.

R65/APN-9.—Loran Indicator and Receiver, 35 tubes and 3" scope. 110v. 400 cycles supply.

R/89/ARN-5A.—Glide Path Rx. 11-tube superhet. 332-335 Mc. Tubes: 6AG5 (7), 12SR7, 12SN7 (2), 28D7.

R115.—Rx, covers 75-200 Kc., 250-500 Kc., 600-1500 Kc., 3-7.5 Mc., 7.5-18 Mc. I.f. is 560 Kc. B.f.o. 280 Kc., 2nd harmonic used.

RA-1B24.—Bendix Rx, 150-315 Kc., 315-680 Kc., 680-1500 Kc., 1.5-3.7 Mc., 3.7-7.5 Mc., 7.5-15 Mc. 6.3v. i.t., 250v. h.t. Tubes: 6K7 (5), 6L7, 6R7, 6K6G.

RA-20.—115v. 60 cycle supply for the BC312 and BC342.

RA38.—Rectifier, 15kva. Output is 15,000v. at 500 mA., variable. Weight 2040 lbs.

RA-58A.—High voltage supply, 500-1,500 volts at 35 mA., variable for breakdown tests.

RA63A.—Rectifier, 115v. 60 cycle. Output 12v. 8 amps.

RA105.—Rectifier, 117v. 60 cycle input. Output 2,000v., 610v., 415v., 300v., 200v., all d.c., plus 6.3v. a.c.

RAK-7.—Navy Rx, 9 tubes, 115v., 15 Kc. to 600 Kc.

RAX1.—Rx, 4 bands, 200-1500 Kc.

RAX2.—Rx, 4 bands, 1500-9000 Kc.

RAX3.—Rx, 5 bands, 7-27 Mc. (2.25 Mc. i.f.). All operate from 24v. dynamotor.

RC150.—I.F.F. equipment used with SCR270 and 271.

RC188A.—I.F.F. 157-185 Mc., Tx-Rx-Indicator. 62 tubes, 110v. a.c. 60 cycle.

RL-9.—Interphone amplifier, 24v. d.c. dynamotor.

RT34/APS-13.—Transmitter and Receiver, 410-420 Mc. I.f. of 30 Mc., contains 6J6 (5), 6AG5 (9), VR150, 2D21 (2) thyatrons.

RT1248.—G.E. Tx and Rx. 435 to 500 Mc. Tx 20w. output, 5 tubes. Rx 10 tubes.

RU-16/GF-11.—Tx-Rx, 3000 to 4525 Kc. and 6000 to 9050 Kc. Tx and 195-13375 Kc. Rx. 12w. r.t./c.w.

SCR195.—Walkie Talkie Transceiver, 52.8-65.8 Mc. 27 lbs. 25 miles range, with handset.

SCR269F.—Radio Compass, 17 tubes, 200-1750 Kc.

SCR274N.—Command Set. BC453 Rx's and BC457A Tx's, etc.

SCR474.—Portable Tx-Rx, covers 40 and 80 mx. 1.4v. tubes in Rx. Tx has 6V6 v.f.o., 6V6 p.a., 6V6 mod.

SCR522.—Tx-Rx, 100-156 Mc. 12 watts r.t., 4 xtal frequencies. Tx alone is

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BC625, Rx is BC624. Tubes: 832 (2), 12A6 (3), 6G6, 6SS7 (2), 12J5, 12C8, 9002, 9003 (3), 12AH7, 12SG7 (3). Remote control box is BC602A.

SCR536.—Walkie Talkie. Tubes: 1R5, 1T4, 1S5, 3S4 (2).

SCR578.—Gibson Girl Tx. Auto SOS for sea rescue.

SCR625.—Mine Detector, balanced inductance bridge with 1,000 cycle osc., 2 tube amp. with 1G6, 1N5. Two flashlight batts. with 100v. B bat. 15 lbs.

SPR2A.—Rx, 1000-3100 Mc. 2C40 u.h.f. osc., 15 tubes, 115v. a.c. operation.

T-17B.—Carbon mike (hand), 200 ohm s.b.

TA-2J.—Tx, 100 watt c.w., 75 watt r.t. 300-600 Kc. and 2.9-15 Mc., v.f.o. Tubes: 807 (2), 803, 646, 801A, 830B (2).

TA-12B.—Tx, 100w. V.f.o., p.p. 807s p.a., 300-600 Kc., 3.0-4.8 Mc., 4.0-6.4 Mc., and 4.3-7.0 Mc. Model "C" includes 4.8-7.68 Mc. and 7.68-12.0 Mc.

TBW.—Tx, similar to GO-9, 3-18.1 Mc., 150w.

TBY.—Tx-Rx, 28-80 Mc., $\frac{1}{2}$ w. output, portable.

TCS-9.—Rx and 25w. Tx, 1500-12000 Kc. Xtal, v.f.o.

TU5B-6B. etc.—Tuning Units, BC191. See BC375.

VC733D.—Localiser Rx, 10 tubes. 108-120 Mc. I.f. 6.9 Mc. Tubes: 717A (3), 12AH7, 12SG7 (2), 12SR7, 12SQ7, 12A6. Six xtal channels. Operates left-right indicator in blind-landing equipment.

I-122A.—Signal Generator, 115v. 60 cycles. 8-15 Mc. and 150-230 Mc., with harmonics covers 8-308 Mc.

I-233.—Range Calibrator. Tubes: 6SN7 (2), 6L6 (2), 6V6 (2), 6SJ7, 5Y3.

I-152AM.—Radio Altimeter, three each 6AG5, 2X2, 3DP1, operates from 100v. 400 cycles.

602A-41.—Amplifier, two stage, r.f., for u.h.f.

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The Versatile Standing-Wave Ratio Indicator*

BECOME A BRIDGE EXPERT IN ONE EASY LESSON

BYRON GOODMAN, W1DX

JUDGING by some of the letters received at Headquarters and by remarks heard over the air, not everyone who owns a standing-wave indicator knows the several different jobs it can do around the shack. If there weren't a strict taboo against it, this article would have been called "Getting the Most Out of the S.W.R. Indicator". (There aren't any editorial objections to getting the most out of anything; the objections are to the overworked cliché.)

To make sure that we're all talking about the same thing, let's review a little. Back in the days before co-axial feed lines were available, very few Hams worried about the "standing-wave ratios" on their open-wire lines. A few studious types knew that such things existed on transmission lines, and a very few (non-operator types probably could even make primitive approximations of the s.w.r. if their hands were forced. These primitive measurements consisted of trotting up and down the transmission line with a suitable indicator and finding the values of maximum and minimum voltage (or current). The ratio of the maximum voltage to the minimum voltage was called the "standing-wave ratio," and the hot shots called it the "v.s.w.r.", for "voltage standing-wave ratio". The resultant number turned out to be the same as the ratio of maximum current to minimum current. It meant very little to anybody but engineers.

When W.W.II. came along it brought, among other things, the rapid development of microwaves and waveguide and solid-dielectric co-axial-line techniques. One thing you don't do on microwaves is to get yourself mixed up with high standing-wave ratios, because the losses mount up and components like magnetrons and such don't remain on their best behavior. First efforts at measuring the s.w.r. in waveguides and co-axial lines involved the old trotting-up-and-down-the-line technique (using probes and slotted lines) and, frankly, it was very slow and a pain in the notebook. The slotted line is useful for measuring some other things but if all you want is a number called the "s.w.r." then something direct reading is more desirable.

The direct-reading instrument showed up after a while, in the form of a device called the "directional coupler". The standing waves on a line are formed when all of the energy isn't absorbed at the load; some of it is reflected back and, with the later energy headed for the load, sets up the standing-wave pattern of maximum and minimum voltage (and current) points along the line. (The mechanics of all this is explained in many books, if you care to dig into it.) The directional coupler makes it possible to measure independently the energy in a line going from the generator to the load and also that reflected from the load back toward the genera-

● The s.w.r. indicator is a magical little instrument that is taken for granted nowadays, although slightly more than a decade ago you would have been burned at the stake (or at least roasted on the podium) for even suggesting that such a thing was feasible. Commonplace as it is today, however, the sad fact is that many owners don't know how to use s.w.r. information except in the most elementary ways. Read this article and you will see what we mean.

tor. A high s.w.r. occurs when much of the energy is reflected, a lower s.w.r. is obtained when little energy is reflected, and the s.w.r. = 1:1 when no energy is reflected.

The value of the directional coupler should be obvious. If for some reason we want to know the s.w.r. in a line, we don't have to trot up and down it (which gets to be difficult in most practical antenna installations); we can make our observations at the transmitter end of the line. With more and more solid-dielectric co-axial line in use by Amateurs, the directional coupler was a real boon. First one to appear was the Micromatch,¹ followed by the Twin-Lamp² and then the Monimatch³ with its several versions. There is an allied device called the "s.w.r. bridge" that will measure the s.w.r.,⁴ but it cannot be left in the line at all times the way the other devices can. It does, however, have an excellent place in the scheme of things.⁵

necessarily so, but it's a popular misconception.) Phooey! Low-impedance output has been used for many years (ever hear of "link coupling"?), and we have been able to load transmitters, and properly, too. Suppose you have a Monimatch and a coax-fed dipole, and the indicated s.w.r. is 2.2; what do you do about it? (You tune up in the usual fashion, say you have "a fairly low s.w.r." and continue to operate, that's what you do!)

What we're driving at here is simply this: Many of the owners of s.w.r. indicators are merely using them as expensive output indicators and conversion pieces. They aren't beginning to make use of the capabilities of the instruments.

WHAT THE S.W.R. INDICATOR CAN DO

The Micromatches and Monimatches consist of (1) an instrument that you connect in the line, (2) a two-position switch, and (3) a meter. The switch points are labelled "Forward" and "Reflected," meaning that in the Forward position the meter reading is proportional to the power going toward the load, and in the Reflected position the meter reading is proportional to the power reflected (not absorbed) by the load. Whenever any reflected power is indicated it means that some of the power present is "reactive" or "apparent"; this may foul up your thinking and confuse your arithmetic if you aren't familiar with real versus apparent power, or power factor, but don't let it throw you; the reflected power isn't dissipated in your transmitter, and all it ever does is run up your line losses some.⁶

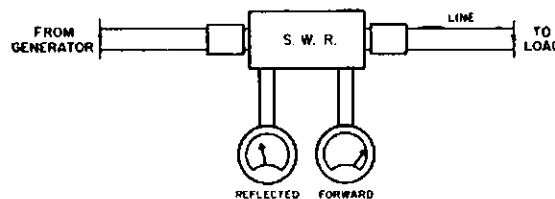


Fig. 1.—Standing-wave indicators exist in several different forms and are identified by as many different names. The directional couplers discussed in this article all have three points in common. They are used in the line, they can handle the full transmitter power, and they measure the s.w.r. by comparing the Forward and Reflected powers.

WHY KNOW THE S.W.R.?

But what good are these devices? Smart Hams could always tell when they had power going out the feed line; they used r.f. meters (thermocouple or hot-wire type, depending on the era) when they were in the chips, and they used flashlight bulbs or neon lamps when the groceries came first. But, you say, these modern transmitters with low impedance output have to work into a line that has a low s.w.r. (Not

Sometimes the meters are calibrated in watts, but more often you merely use the relative readings. The meter can be calibrated to indicate the s.w.r., because the s.w.r. can be found from a comparison of the Forward and Reflected readings. A Ham with two meters could dispense with the switch and use a dual indicator like that pictured in Fig. 1. Don't let those fancy titles like "generator" and "load" scare you off; these are merely to show that the power source is at the left and the thing you're delivering the power to is at the right. The "generator" is usually your transmitter but it could be a driver stage or a signal generator; the "load" is usually the antenna but

1 Jones and Sonthelmer, "The Micromatch," "QST," April, July, 1947.
2 Wright, "The Twin-Lamp," "QST," Oct. 1947.
3 McCoy, "The Monimatch," "QST," Oct. 1956; "QST," Feb. 1957.
4 Pattison, Morris, Smith, "S.W.R. Meter for Co-axial Lines," "QST," July 1947.
5 Corderman, "A Composite Test Set," "QST," Dec. 1955.

6 Goodman, "Losses in Feed Lines," "QST," Dec. 1956.

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Model 12 3/16" (Push-on)	6, 12, 24-27½	12	0.5 oz.	6.25"	Radio, Television, and Telecommunications assemblies.
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it could be the input circuit of a driven amplifier or a dummy load. Any of the power-handling instruments (Micro-match, reflectometer, Monimatch) have a negligible effect on the s.w.r. in the line to the left, but this isn't necessarily true of the resistive s.w.r. bridge referred to earlier.

In this enlightened age practically everyone knows what the meter readings will be when the load has a resistance equal to the impedance of the line. (The "impedance" of the line is determined by the physical and electrical characteristics of the line; you know RG-8/U to be 52 ohm line, RG-11/U to be 75 ohm line, and so on.) If the line is RG-8/U or some other 52 ohm line and the load is 52 ohms, when we turn on the generator the Forward meter will show something but the Reflected one will show nothing, as in Fig. 2a. The directional coupler is labelled "52 ohm S.W.R." to remind you that if it were designed for another low-impedance value we wouldn't get the same results (the Reflected meter wouldn't read 0).

This case with the load equal to the line impedance is of course a familiar

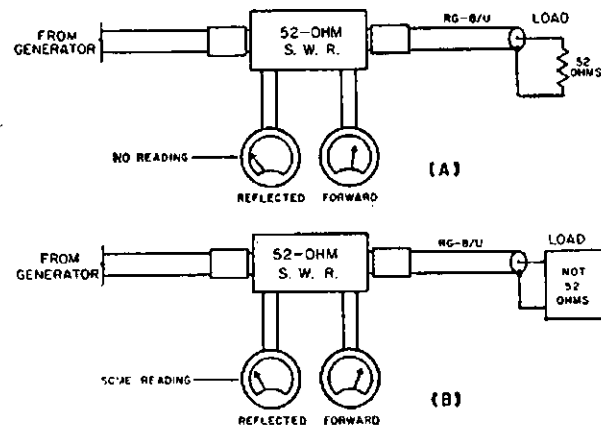


Fig. 2.—(a) When the line is terminated in a load equal to the impedance of the line, the Reflected power is zero and the s.w.r. is 1:1.

(b) Any other termination will result in some Reflected power.

thing to anyone who has used an s.w.r. indicator. The load doesn't have to have an ohmic resistor as shown in Fig. 2a; it can be, and more often is, the radiation (plus ohmic) resistance of an antenna. A standing-wave ratio of 1:1 means that there is zero reflected power, and the losses in the line are a minimum when the reflected power is zero. The length of the line should have no effect on the s.w.r.; the s.w.r. is determined solely by the relationship between the line impedance and the load.

When the load is anything other than a resistance equal to the line impedance, some reflected power will be indicated, as represented in Fig. 2b.

USING THE DIRECTIONAL COUPLER

Getting down to cases, here are some of the ways you can use the directional coupler:

(1) To indicate resonance and proper coupling in the transmitter when no antenna coupler is used.

The way many Hams use the things, by tuning the output amplifier for the highest indication of Forward power without burning up the transmitter. Manufacturers of s.w.r. indicators certainly don't object to this application, but a less-expensive indicator will serve just as well.

(2) In the line between transmitter and antenna coupler.

Permits adjusting the antenna coupler to give an s.w.r. of 1:1 in the line between transmitter and coupler, desirable with pi-network output and when a low-pass filter is used. The low s.w.r. also minimises losses in this length of line, although this is usually of minor importance in what is normally a short length. Remember that your adjustments do not affect the s.w.r. in the line between coupler and antenna. However, you can use the s.w.r. indicator in the line between coupler and transmitter to measure the s.w.r. on the line between coupler and antenna.⁷

(3) To adjust coupling at input circuit of final amplifier, when amplifier is coupled to driver through coaxial line.

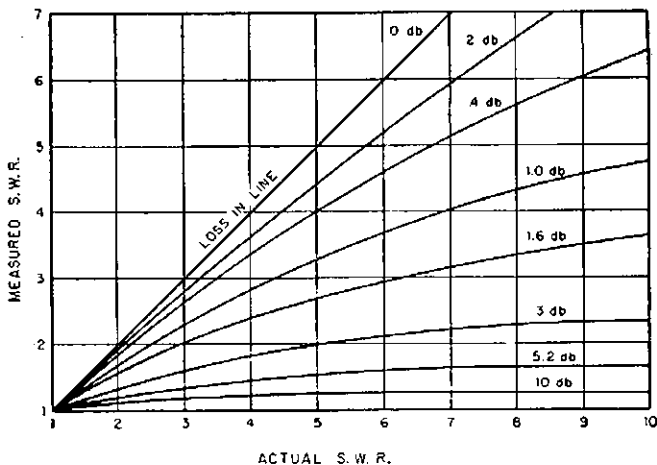
When this is done with driver and amplifier running at normal power, the resultant coupling condition for a mid-band s.w.r. of 1:1 on the short coupling line also gives the best band width, which means you don't have to retune as often when changing frequency within a band.

the s.w.r. indicator up at the antenna; if you have a light mast or tilt-over job that won't support you, rig up a string drive to adjust the capacitor with the antenna up in the air. The length of line usually isn't very important below 30 Mc., but above 50 Mc. the s.w.r. indicator is best used no more than a few wavelengths from the antenna. When the losses in the line begin to mount up, as they will in long lines at v.h.f., you will get indications of a match at the transmitter end of the line that aren't true at the antenna end. The extent of this effect is shown in Fig. 3. We've seen a coil of cable a few hundred feet long used as a dummy load for a v.h.f. transmitter; it made very little difference in the s.w.r. if the line was terminated or not.

(5) To check antenna resonance.

Another of the more useful applications. If an antenna is used as the termination for a line, the frequency of minimum (not necessarily 1:1) s.w.r. is the frequency at which the antenna is a pure resistance (no reactance), and this is the resonant frequency of the antenna. Thus to find the resonant frequency of an antenna fed directly by coaxial line, it is only necessary to vary the frequency of the transmitter until the frequency of minimum s.w.r. is found. (Don't just look for minimum Reflected power; you have to make sure that the Forward power is still there, and this will probably require a few coupling adjustments at the transmitter as you run over the band.) If the minimum s.w.r. occurs at the high frequency of the band and you prefer to be peaked at lower frequency, lengthen the antenna. If the minimum s.w.r. occurs at the low frequency end and you have your heart set on the high, make with the cutters.

Fig. 3.—Indicated s.w.r. as a function of true s.w.r. This clearly demonstrates the need for measuring the s.w.r. near the load when making adjustments at an antenna, if a long (lossy) line is used. (From an article by John Lory, by courtesy of Electronics magazine.)



(4) To adjust matching section between antenna and line.

One of the very useful applications. The adjustment of a gamma match is a cinch with an s.w.r. indicator, and sheer guesswork without. With the antenna resonant (formula length) merely vary the gamma until a 1:1 or very low s.w.r. is indicated. The gamma match with an adjustable capacitor is the most convenient to use. If you can climb the tower you can use

You might be tuning a dipole made of No. 12 wire, or one of the new XTC4U specials (the one made from 14 beer cans and a piece of wet string); you can still use the technique. Just remember to make the resonance check with no matching section between the antenna and the line,⁸ and be sure you find the minimum s.w.r. and not just the minimum Reflected power with some fixed transmitter coupling.

⁷ Grammer, "Universal S.W.R. Measurements with a Coaxial Bridge," "QST," Dec. 1950.

⁸ The line should be connected in the centre of a halfwave antenna or in a current loop (point of maximum current) in a long wire.

The above is based on the fact that near resonance the radiation resistance of an antenna changes slowly. Considering it to remain constant about the resonant frequency, any reactance added to the resistance will increase the s.w.r. when this antenna is used as a load for a line.

If you have any curiosity about your antenna, you can even get a fair idea of what the antenna impedance is, just by measuring the s.w.r. at resonance and then making an educated guess. For example, suppose the s.w.r. turns out to be 1.6 at the resonant frequency, and you are using 52 ohm line. You

know that the antenna impedance must be either 83.2 ohms (52×1.6) or 32.5 ohms ($52 \div 1.6$), from the relation

$$Z_0 = R_1 (\text{s.w.r.}) = R_2 \div (\text{s.w.r.})$$

where

Z_0 = Line impedance.

R_1 = Resistive termination smaller than Z_0 .

R_2 = Resistive termination larger than Z_0 .

Your educated guess would probably be the 32.5 ohms, in the case of a multi-element beam.

If your meter reads Forward and Reflected power, the s.w.r. can be determined by the use of Fig. 4.

EFFECT OF HARMONICS

There may be occasions when the Reflected reading will run higher than the Forward. This doesn't necessarily mean that the unit has gone haywire; in most cases it will be an indication of a serious u.h.f. or v.h.f. parasitic oscillation in the transmitter. In the case of a c.w. transmitter, the Reflected reading may jump up to a high value as the key is closed and then drop down to a more normal value; this means that there is a momentary v.h.f. or u.h.f. parasitic oscillation as the key is closed.

When you are getting down to very low readings of reflected power, you have to avoid any appreciable spurious content in the transmitter if the load you are adjusting is frequency sensitive. In other words, if you are adjusting something that tunes, like a gamma match or an antenna coupler, it will give a proper termination for the line at only one relatively narrow band of frequencies. You will tune and tune and never get the s.w.r. down to 1:1 if there are a few watts of harmonics or overtones in the transmitter output.⁹ These days most transmitters are fairly clean, but the point is mentioned on the off chance that one or two readers may beat their brains out trying to match up something that is matched all the time. Most Hams don't try to match this close, but there are a few persnickety ones and we want them to be happy, too.

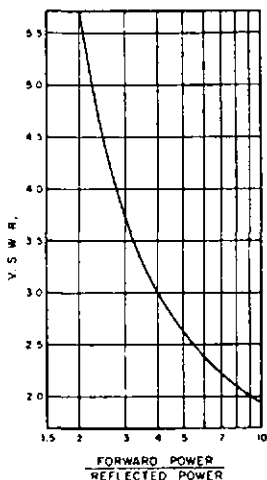
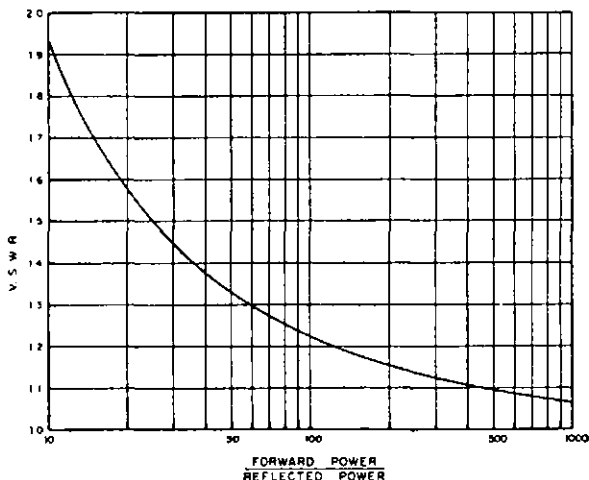
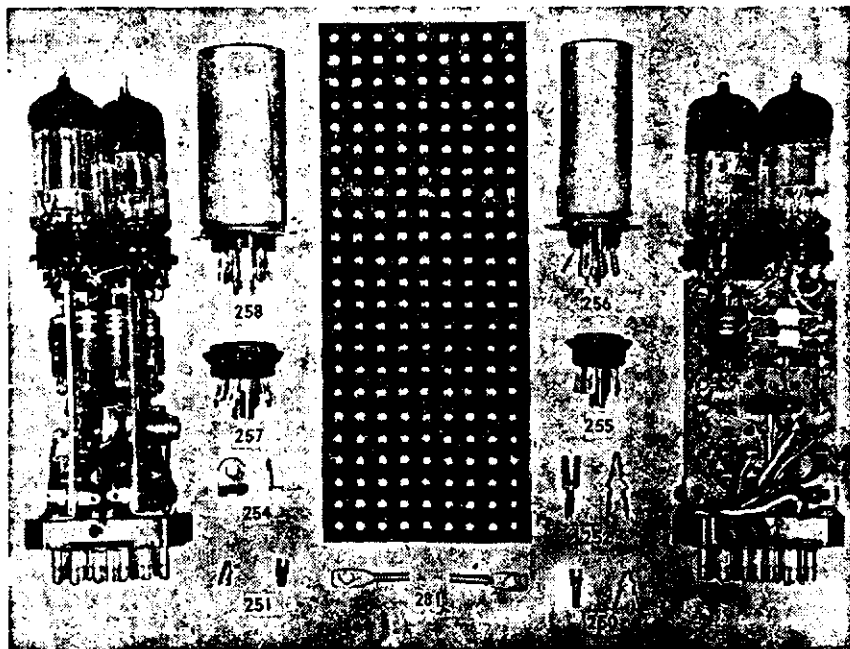


Fig. 4.—Graph of s.w.r. versus ratio of Forward to Reflected power. Use the chart on the right for low power ratios.

⁹ Grammer, "Notes on S.W.R. Measurement," (Technical Topic), "QST," May 1952.

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MEET THE OTHER AMATEUR AND HIS STATION

ALAN BROWN* VK3CX

INTEREST in Amateur Radio commenced in 1923 with a home-made crystal set, but Alan had to wait until he reached the age of 18 in 1928 before he gained his A.O.C.P. and commenced operation as VK3CX on the old 32 metre band.

Amongst his early memories of those days, one is outstanding. He was QSO-ing VK3RX (now VK3ARX), who lived about three quarters of a mile away. Both operators criticised the other's signal to such an extent that they agreed they should hear their own signals; so, leaving all switches in the appropriate positions, VK3CX went to VK3RX, and VK3RX went to VK3CX and again made QSO, each then listening to his own signal. The result was that each of them re-built immediately.

Many transmitters have been built since that first rig which used a UX201A in a split Hartley circuit—the power supply being four "slop" jars with the 230 volt a.c. mains on them.

The present transmitter is a Geloso v.f.o. driving straight into a pair of 6146s in parallel, running cool at 100 watts. Incidentally, the Geloso is also underloaded—it is rated at 425 volts, but only 325v. is used. The circuit is a modified version of the pi-coupled all-band affair which is well known. The antenna is a short "longwire" type, being 1½ waves long and fed at ¼ wave with 150 ohm pair. It is about 20 feet high.

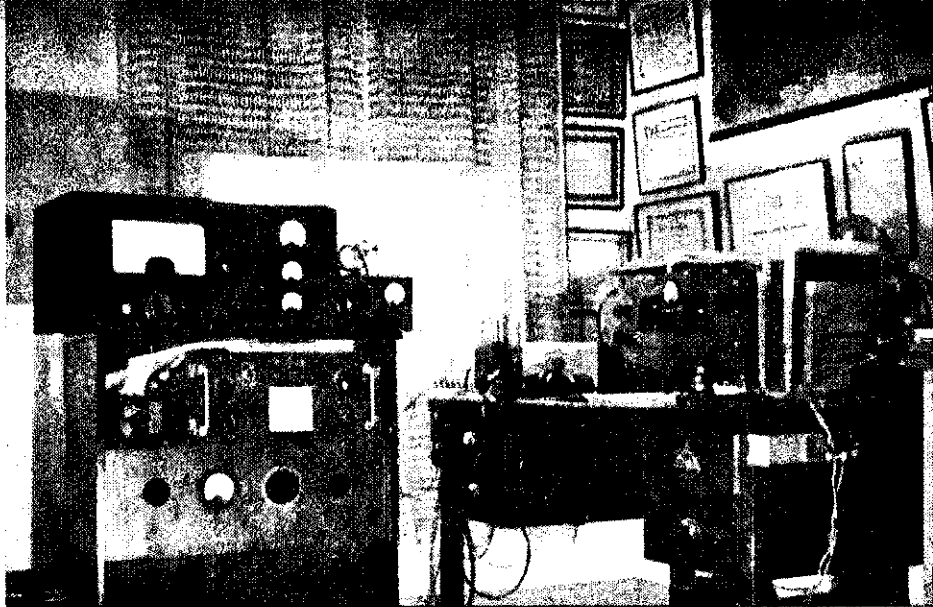
The receiver was once an AMR200 (a modified version of the Super-Pro), but this has been considerably modified—seven stages have been replaced with modern tubes.

Additional equipment is a Heath Kit "Q" Multiplier, a Barker & Williamson electronic transmit-receive switch, a Class "C" wavemeter, a multimeter and the usual gadgets that make for successful operation of a Ham Station.

Many certificates decorate the walls, and amidst awards for overseas contest placings, are awards for D.X.C.C., W.A.C., W.A.S., W.B.E., B.E.R.T.A., R.C.C., O.T.C., W.A.P., W.F.E., W.A.N.E., W.J.D.X.R.C., W.F.J.S., D.U.F., W.A.-S.M., KZ5-25, W.A.J.A.D., 50P-50W, W.A.N.A.C.A., D.P.F., C.A.A., W.A.C.-Y.L., O.H.A., KP4-25, W.A.Z., and it is understood that he is eligible for many others. He is also a member of the First Class Operators' Club (F.O.C.) and the A1 Ops. Club. It was noticed that in several of these Awards mention was made of the fact that he was the first VK to achieve them.

Although present operation is mainly on 14 Mc. c.w., VK3CX has worked on all bands from 5 to 80 metres, but he says that at present he is sticking to 14 Mc. as it offers the best opportunity for DX ragchewing.

* 8 Mangarra Road, Canterbury, E.7, Vic.



We asked why he didn't use telephony and were told that although he had made W.A.C. on phone pre-war, he preferred c.w. which, he says, "he reads more easily than phone".

VK3CX, during the day, is Secretary to the Minister of Transport, and we accidentally discovered that Ham Radio is only a sideline as his main interest is philately—he is a member of the Executive Council of the Royal Philatelic Society of Victoria.

The 1939-45 war did not curtail his operating to any great extent as he was

a member of the R.A.A.F. Wireless Reserve and with many other Hams was called up early in September 1939. After service as a W/T operator, he gained a commission as a Signals Officer and was eventually promoted to the rank of Squadron Leader.

DX worked is 260 countries, with over 250 confirmed post-war, and Alan denies that it was in respect of him that the famous quotation was made recently—"Oh him. He's worked more countries than he can get cards from!"

RUSSIAN PHONE CONTEST

The U.S.S.R. Central Radio Club is organising an International Radio Telephony Contest of Radio Amateurs to be held on March 14-15, 1959, in honour of the Centenary of A. S. Popov, the great Russian scientist, and invites Radio Amateurs to take part in this event.

A Radio Amateur of any country may score as many points as he can for contacts with Radio Amateurs from different countries participating in the Contest. Time of the Contest is 2400 GMT on March 14 to 0900 GMT on March 15, 1959.

Bands to be used are: 28, 21, 14 and 7 Mc.; on telephony only. All participants should exchange five-digit control numbers made up of RS and the ordinal number of the contact, e.g. 59001.

General call during the Contest will be "CQ Test". The list of countries will be that internationally used by Radio Amateurs.

During the Contest only one Radio contact with the same Radio Station will be taken into consideration.

Each contact with stations of different continents, irrespective of the band, will yield two points.

Each contact between stations of the same continent, but not within the same country, will yield one point.

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All manuscripts, notes and correspondence to "Amateur Radio" should be forwarded to:—

P.O. BOX 36,
EAST MELBOURNE, C.2,
VICTORIA.

Each contact between stations within the same country will be disregarded; it will be taken into consideration only for the country as a multiplier.

The total number of points gained by a participant will be multiplied by the number of countries with which he established contacts.

Diplomas will be issued to the first ten placings in each country. Memorable cards will be sent to all participants of the Contest.

Each participant, irrespective of the number of points scored, should make a report which should be sent to the Chief Judging Board not later than five days after the end of the Contest. Address: The U.S.S.R. Central Radio Club, P.O. Box 101, Moscow, U.S.S.R.

The report shall contain: Call sign of station, christian and surname, town, transmitter input, the total number of points scored in the contest. The log to be made up of seven columns: Date, band, time (GMT), correspondent's call sign, control number received, control number sent, points. Also to appear are the number of points for the contact number of countries, and total number of points. Sign your name and date.

U.S.S.R. DIPLOMA "W-100-U"

The Diploma "W-100-U", issued by the U.S.S.R. Central Radio Club, is given to Radio Amateurs who have established two-way radio contact with 100 different Amateur Radio Stations of the Sverdlovsk Region, A. S. Popov's birth-place, in the period of January 1 to December 31, 1959.

Both telephone and telegraph radio contacts established in one or several Amateur bands: 3.5, 7, 14, 21 and 28 Mc. are taken into consideration.

377 and 335 are minimum RST and RSM for being awarded the Diploma.

To be awarded the Diploma it is necessary to send to the U.S.S.R. Central Radio Club 100 QSLs confirming the establishment of radio contact. A list of the contacts, indicating date, time, band and technical data of the QSO, the correctness of which is certified by a central radio club or the W.I.A., may be forwarded in lieu of QSLs.

Forwarding address: U.S.S.R. Central Radio Club, P.O. Box 88, Moscow, U.S.S.R.

W.I.A. Victorian Division's New Premises

IT is November 19, 1958. A group of people stand on the footpath in the shade of a tree outside a two-storey house, No. 478 Victoria Parade, East Melbourne. An auctioneer is extolling the virtues of the place and calling for bids. The group include Divisional President VK3YS and Hon. Secretary VK3JL. VK3NJ is bidding on behalf of the Victorian Division. They already are well aware of the virtues, but have to think too of all the members. A tense and exciting moment—and success for the W.I.A. History in the making. The bidding ceases at £5,125. Some head-shaking in the negative, they want more. VK3NJ negotiates, it is all over in a matter of minutes. We obtained the property for £5,500—a bargain.

Thus ended a long and difficult search for a home for the Victorian Division Headquarters, we have obtained our own premises. No more threats of ejection or increasing rent charges. Away from the city noise, but still easily accessible to all members.

Where had all this started? In searching for information about the occupation of the old rooms at 191 Queen St., some interesting facts concerning rooms and meeting places came to light. Victorian wireless experimenters first got together as an organised body in 1910. One meeting place was in the Oxford Buildings in Bourke St. After W.W.1, meetings were held in the old A.W.A. building, Little Collins St., then in 1920 they moved to a room in Arcade Hall, Chapel St., Prahran. Later a shift was made to Kelvin Hall, Collins Place. Incidentally, during the 1920's a block of land in Burwood was purchased by the Division and a brick building erected thereon. VK3BQ built and installed the transmitters. However, due to its remoteness (at that time), members would not travel to the site and little use was made of the building. The property was eventually sold.

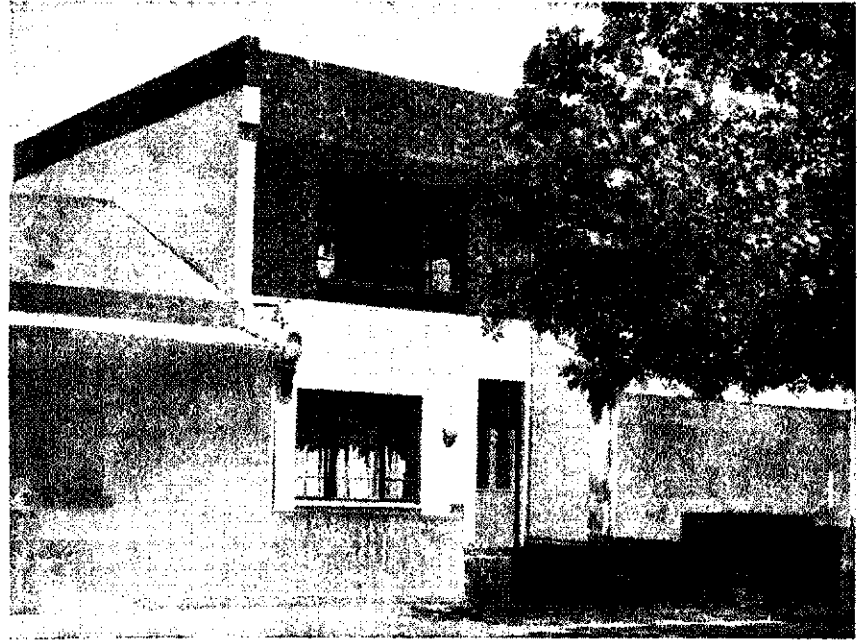
In 1934, after some years at Kelvin Hall, the rooms at 191 Queen St. were acquired on a rental basis. "Amateur Radio" for September of that year contains quite a few expressions of pleasure in reporting this acquisition. (Of passing interest, an advertisement in the same issue indicates that the full member's subscription was £1 per year. A substantial sum in those days.) The Division now had its own office, transmitter, library, A.O.C.P. classroom and meeting place under one roof.

Shortly after W.W.2, an Administrative Secretary was installed. The only Division to have its own rooms complete, located in a central spot and which now were open during the day. There was only one logical improvement to this, purchase our own rooms. In any case it was known that sooner or later a move would have to be made. The owners wanted 191 for their full use. And there was the disquieting news that rent controls were to be lifted in August 1959. Rental charges would have soared beyond our means.

Over recent years the search for a suitable place has been going on, with East Melbourne the favoured spot although a difficult one—places scarce and prices high. Buildings were inspected in South Melbourne, Carlton, etc. Suggestions from VK3OM checking newspaper adverts, revived our interest in East Melbourne. The property at 478 Victoria Parade (amongst others) was

discovered and members of the Building Committee and Council inspected it. All were impressed with the good condition and general layout. Time was short, this was only a few weeks prior to the auction date. Hurried meetings, legal enquiries, the final decision.

And here it is—on this page you will see a photograph and on the opposite page plan drawings of the two floors.



Victorian Division's new premises at 478 Victoria Parade, East Melbourne.

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The building is an old brick house, recently renovated and largely rebuilt. All rooms had been decorated in modern bright colors and wallpapers. The large room on the second floor meant no further alteration necessary, just right for A.O.C.P. class and lecture room. Other rooms will serve as xmtr. room, library, reading room, etc. There is a bathroom; a kitchen with electric stove, stainless steel sink and cupboard. Internal and external toilets.

As has been mentioned before in our Divisional notes in "A.R." and over VK3WI, working "bees" got on the job in early January to prepare the place for initial occupation. Floors were punched and sanded. Lino laid, sealed, and polished in all rooms except bathroom and kitchen. These have concrete floors. Heavy power cable installed to xmtr. room. Curtains hung on all windows. Equipment at 191 dismantled and transported to the new address—a hectic few weeks.

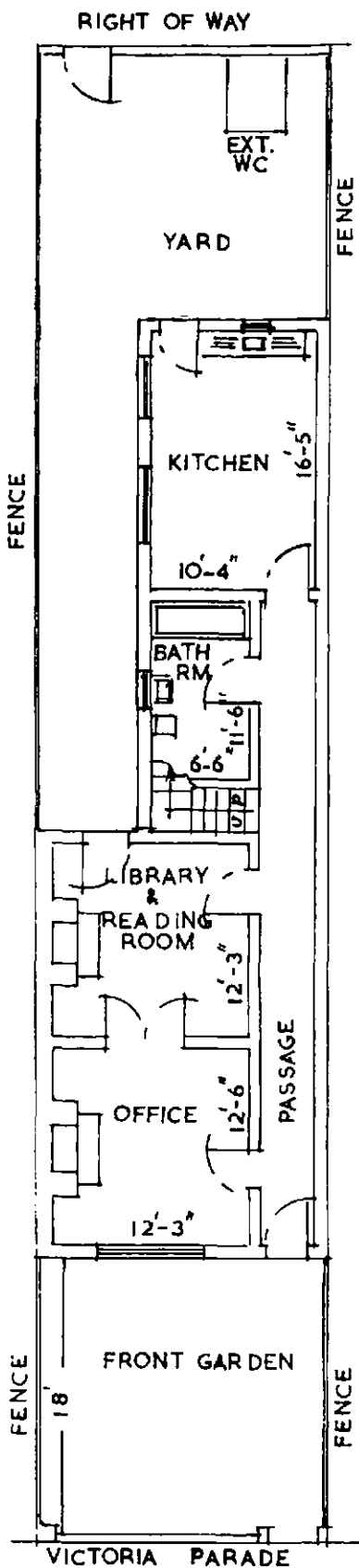
V.H.F., S.W.L. and A.O.C.P. instructional groups commenced their use of the lecture room late in January. The shifting of equipment and removal of aerials from 191 completed by the middle of February. Mrs. May installed as librarian, etc., on Monday, Feb. 18. Follows the sorting out, planning of VK3WI, etc., and ideas for the future.

Country members should find the new premises of value. A place to meet your Amateur friends, read through the latest overseas magazines, even take a shave and clean up whilst waiting for the XYL to do her shopping. The location is on the south side of Victoria Parade, approx. midway between Simpson and Powlett Sts., a few hundred yards west from Punt Rd. If you are coming from the city, take a tram in Collins St., or Latrobe St., heading for Kew, North Balwyn, Balwyn, or Mont Albert. Get off at Stop No. 20 opposite Powlett St. Victoria Parade is the continuation of Victoria St. where there is a double lane roadway, with the trams running through the plantations in the centre. The Eastman Reserve is opposite our block. Farther south, across Albert St. there is a children's playing park and tennis courts. Preliminary receiving tests seem to indicate a very low electrical noise level. All in all, quite a pleasant location.

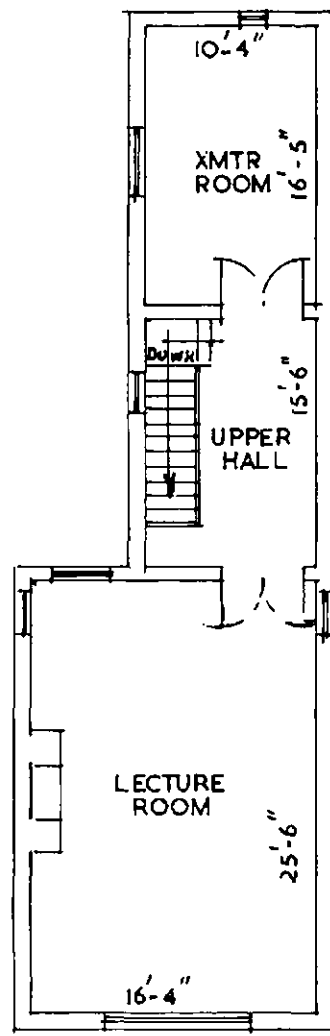
Appreciation is recorded here to all those members who have so far assisted with this project and to those who have so willingly given their time in the preparatory work. Much yet remains to be done, aeralis and equipment to be installed, cupboards and shelving for library, etc. And there is the important matter of finance. A deposit of £2,750 has been paid. Our long established building fund came in very handy here. The balance and legal expenses remain. Let's get it paid off and avoid high interest charges. To cover this, a debenture scheme is being prepared and members are urged to support it to the full.

By the way, check "A.R." for last January, page 21—we have residential neighbours, so cut the noise, especially late at night; do not park cars at any time in the adjoining laneways; keep the place clean and tidy. It is your property—take an interest in it.

Note.—In future, please address all mail to P.O. Box 36, East Melbourne, C.2. New phone number is JA 3535.



GROUND FLOOR PLAN



1ST FLOOR PLAN

AMATEUR CALL SIGNS

SEPTEMBER-DECEMBER, 1958

NEW CALL SIGNS

- VK— New South Wales
 2STV—K. J. Ledsam, 2 Ivor St., Lidcombe.
 2TV—W. G. Welss, 27 Linthorne Ave., Croydon Park.
 2UL—J. D. Ewing, 19 The Crescent, Dee Why.
 2XS—K. G. Scott, 17 Thompson Cres., Sth. Tamworth.
 2ZV—O. C. Winterton, 7 Cross St., Balgowlah.
 2AAF—A. J. Fisher, 35 Carters Lane, Wollongong.
 2ACQ—F. A. Pearson, Frederica St., Narrandera.
 2ADA—R. F. Daniel, 27 Broughton St., Camden.
 2AEZ—E. A. Marstella, 34 Gallipoli St., Lidcombe.
 2AHV—W. E. Mill, 61 Elwin St., Narrandera.
 2ALA—F. T. Adams, 36 Brougham St., East Gosford.
 2ALR—R. K. Richardson, 12 Bowden St., Parramatta.
 2ALV—L. Jordan, 195 Church St., Wollongong.
 2AMA—C. J. Maloof, 54 Mecks St., Kingsford.
 2ANB—R. J. Baty, 11 Hawkins St., Artarmon.
 2ASB—A. J. Bowman, 107 Cronulla St., Cronulla.
 2ASI—J. J. Sullivan, Newcastle Sun, Bolton St., Newcastle.
 2ASV—K. J. Smith, 23 Excelsior Parade.
 2AWF—B. J. Foster, Avoca, "Biala," via Gunning.
 2AXI—I. M. McCosker, 122 Warialda St., East Moree.
 2AXK—D. A. Kinsella, Christian Bros. College, Crown Lane, Wollongong.
 2ZAL—A. A. Williams, 23 Queen St., Croydon.
 2ZCB—E. Berlage, 10 Trelawny St., Woolahra.
 2ZCL—R. F. A. Lopez, Davies Rd., Padstow.
 2ZCN—N. McNabb, 12 Baringa Rd., Griffith.
 2ZCT—J. C. Grant-Thompson, R.A.A.F., Wihiamtown.
 2ZEF—R. J. Flynn, Experiment Farm, Yanco.
 2ZEJ—B. J. Mason, 85 Carrington Rd., Wahroonga.
 2ZEL—R. W. Luther, 525 Blaxland Rd., Eastwood.
 2ZEW—A. B. Walker, 6 Taylor Close, Miranda.
 2ZFC—K. J. Collins, 1 Melrose St., Epping.
 2ZFL—J. Lak, Lot 22, Douglas Rd., Doonside.
 2ZJP—J. P. Butcher, 56 Roslyn St., Ashbury.
 2ZMK—K. M. McKay, 44 Milner Cres., Wollstonecraft.
 2ZMO—M. J. O'Brien, 28 Irawang St., Raymond Terrace.
 2ZMP—M. F. Potts, 28 View St., Waverley.
 2ZRW—R. Weaver, 43 Rose St., Grenfell.
 2ZWN—W. Nicholl, 1 Rex Ave., New Lambton.
- Victoria
 3BX—P. E. Linden, 1 Bishop Court, Mt. Waverley.
 3DF—M. Dalton, 90 Collins St., Mentone.
 3EG—G. D. P. Clarke, 41 Alwyn St., Mitcham.
 3FN—B. M. Ferguson, No. 2 Second Court, McGowan Ave., West Preston.
 3HU—J. A. Hunt, 19 The Boulevard, Eildon.
 3JF—J. F. Heine, 24 Deauville St., Beaumaris.
 3JW—C. T. Biggs, Inglewood St., Raywood.
 3OK—J. Craddy, Fishermen's Bend Hostel, Lorimer St., Port Melbourne.
 3UW—R. E. Wallace, Station: Amphitheatre; Postal Area Workshops, Bandiana.
 3VC—G. D. Robinson, 24 Warrandyte Rd., Ringwood.
 3ZW—D. J. Anderson, 153 Mackle Rd., East Bentleigh.
 3AAC—J. P. Crooks, 148 Queen St., Colac.
 3ACP—C. C. Pratt, 20 Waratah Ave., Tullamarine, via West Broadmeadows.
 3ACW—G. A. Welsh, 19 Alan St., Highbett.
 3AHZ—W. H. Henson, 14 Cavalier St., Oakleigh South.
 3AIJ—J. I. Kelleher, 3 Paine St., Newport.
 3AIQ—A. J. E. Robertson, C/o. Herald-Sun TV Station, Ollinda.
 3AJD—J. W. Gadsden, 11 Ford St., Ringwood.
 3AKK—A. Kassimates, 34 Rowen St., Bendigo.
 3AOA—K. F. Alcock, "East Wood", Barina Cres., Croydon.
 3ARC—R.A.A.F. Laverton Radio Club, R.A.A.F. Base, Laverton.
 3ASE—D. G. Anderson, Blackburn St., Stratford.
 3ASH—J. L. C. Hart, 30 Charles St., Burwood.
 3ASZ—E. J. Rasmussen, 541 St. Kilda Rd., Melbourne.
 3AUM—C. P. L. Minns, Wilson St., Berwick.
 3AYH—J. M. Hamilton, 37 Byfield St., Reservoir.
 3AYR—F. H. A. McClymont, 95 Arthur St., Fairfield.
 3AZJ—D. G. Johns, 345 Liberty Pde., West Heidelberg.
 3ZAC—W. L. Rils, 163 Derby St., Kew.
 3ZBA—M. W. T. Cherry, 11 Nelson St., Foster.

- 3ZBB—R. O. Griffin, 14 Emily St., Murrumbidgee.
 3ZBE—J. A. Retchford, 9 Summit Rd., Burwood.
 3ZBO—C. P. O'Brien, 704 Peel St., N. Ballarat.
 3ZEQ—M. A. Robinson, 43 Marina Rd., Mentone.
 3ZPQ—K. M. Cocking, 9 Inverness Way, North Balwyn.
 3ZFS—A. J. Stewart, 11 Woodstock Rd., Mt. Waverley.
 3ZFT—R. G. Terrill, 67 Croydon Rd., Surrey Hills.
 3ZFV—R. H. Baker, 84 Lilly St., Bendigo.
 3ZFX—G. S. Begg, 157 Banksia St., Heidelberg.
 3ZGD—A. C. Stebbing, 31 Rupert St., West Footscray.
 3ZGG—J. R. Goding, 24 Prospect Hill Rd., Camberwell.
 3ZGH—N. J. Helmond, 374 Dorset Rd., Boronia.
 3ZGI—O. W. Guy, 22 Williams Rd., Shepparton.
 3ZGO—J. E. Orre, 19 Maribyrnong Rd., Ascot Vale.
 3ZGP—L. H. Poynter, 17 Perth St., West Heidelberg.
 3ZHW—A. M. Horwood, 114 Grange Rd., Alphington.
 3ZIE—D. L. Seedsman, 49 Cookson St., Camberwell.
 3ZIJ—I. R. Johnston, A.R.D.U., R.A.A.F. Base, Laverton.
- Queensland
 4BQ—C. G. Bohr, Station: 177 Bowden Rd., Townsville; Postal: 187 Bowden Rd., Townsville.
 4CR—R. J. Conway, 31 Anne St., Aitkenvale, Townsville.
 4LW—G. W. Haughton, 149 Station Rd., Oxley.
 4NO—O. J. Natrass, 60 Duke St., Toowong, S.W.I.
 4OL—A. J. Hansen, 161 Raymond Rd., Alderley.
 4OM—M. N. O'Brien, 27 Humphrey St., West End, Townsville.
 4VM—K. N. Long, 12 Rillat St., Wavell Heights.
 4WW—N. B. Walden, Dolby & Rankins Bldg., Pacific Highway, Surfers Paradise.
 4ZBX—M. J. Palmer, 25 Glenrich St., Corinda.
 4ZBY—L. Guralnek, 120 Hardgrave Rd., West End, Brisbane.
 4ZBZ—R. M. Feanaghy, Station: 27 Charlotte St., Wynnum; Postal: 145 Braun St., Deagon.
 4ZCA—D. C. Price, Scoria St., Biloela.
 4ZCB—M. J. Lightbody, 22 White St., Wavell Heights.
 4ZCH—R. E. Hunt, Millora, via Munbilla, Fassfern Lne.
 4ZED—K. B. Steel, 57 Ernest St., Manly.
- South Australia
 5EM—B. R. Meldrum, Ardrossan.
 5EQ—A. B. Holleben, 26 Nelson St., Port Pirie.
 5GO—D. A. Pnge, No. 1 A.T.U./T.A.S., R.A.A.F., Woomeera.
 5JB—J. W. Battiye, 4th St., Leigh Creek.
 5KI—K. Postler, 53 Ascot Ave., Dulwich.
 5KK—D. A. McArthur, 4 Francis Ave., Fullarton.
 5ME—S. G. McLean, 22 Celtic Ave., South Road Park.
 5RY—R. C. Henry, 44 Hampton St., Goodwood.
 5TN—B. G. Tildeman, 33 Ningana Ave., King's Park.
 5ZBZ—B. C. Cleworth, 4 Dunstan Ave., Kensington Park.
 5ZCC—R. V. Lapidge, 102 Angus Rd., Cottonville.
 5ZCE—K. E. Savage, "Gumlea," Stanley St., Leabrook.
 5ZCF—P. E. Rostan, 30 Hawkesbury Ave., Kilburn.
 5ZDB—C. J. McCarthy, 92 David Ter., Kilkenny.
 5ZDI—B. J. Burns, 16 Bernard St., Flindon.
 5ZDL—J. M. Shaw, 8 Birdwood St., Netherby.
- Western Australia
 6CS—C. E. J. Sangster, Windsor Hotel, Mends St., South Perth.
 6KH—W. K. Holey, Gardner St., Moora.
 6LS—L. S. Eddington, 18 Fletcher St., Applecross.
 6ZAL—I. G. Stimson, 70 St. Leonards Ave., West Leederville.
 6ZBZ—R. Chamberlain, 108 Cleopatra St., Palmyra.
 6ZCB—K. C. Bicknell, 115 Grand Promenade, Inglewood.
- Tasmania
 7DK—D. H. Kelly, Cottage No. 10, Tarraleah.
 7GT—Georgetown Amateur Radio Club, C/o. G. H. Cranby, 6 Barrack St., Georgetown.
 7KS—K. Spiegel, 59a Red Chapel Ave., Sandy Bay.
 7MX—M. W. Ives, Wesley Vale Rd., East Devonport.
- Territory of Papua and New Guinea
 9GK—G. S. Kiernan, C/o. O.T.C. (Aust.), Port Moresby, Papua.
 9GW—G. K. Williamson, Telegraph Office, Mt. Hagen, N.G.
 9JW—J. H. Williams, C/o. Telegraph Office, Dept. of Posts & Telegraphs, Goroka, N.G.

- 9RO—R. S. Gurr, Station: Gere Gere Ave., Boroko, Papua; Postal: C/o. Dept. of Posts & Telegraphs, Radio Inspection Section, Port Moresby, Papua.
 9ZBF—D. H. Francis, C/o. Boroko Radio & Sound System Service, Tabari Place, Boroko, Port Moresby, Papua.
- Antarctica
 0AF—A. S. Flett, Wilkes.
 0CC—C. J. Croke, Macquarie Island.
 0MC—M. J. Cosgrove, Mawson.
 0RH—R. L. Harvey, Wilkes.
 0RT—R. M. Torckler, Davis.
 0TF—H. P. Fuller, Davis.
- ## CHANGES OF ADDRESS
- VK— New South Wales
 2BQ—G. C. Page, 20 Marshall Ave., Warrabee.
 2CC—C. M. Carter, 4 Albert St., Kempsey.
 2JV—J. R. Carr, 2 Belgrave St., Kogarah.
 2NT—J. W. O'Neill, 33 Gilda Ave., Nth. Ryde.
 2RC—R. W. G. Chalmers, "Glencairn," Merriwala Rd., Denman.
 2ACV—A. G. Mulcahy, 67 Marco Av., Reversby.
 2AGL—W. G. Lumb, 206 Old Northern Rd., Castle Hill.
 2AGW—A. E. Hay, 1635 Pittwater Rd., Mona Vale.
 2AHE—A. C. Pearce, Lot 3, Washington Ave., Dee Why.
 2ALC—C. Allen, 29 Avon Rd., North Ryde.
 2ALI—C. J. Boyton, 56 Chamberlaid Rd., Bexley.
 2AOL—M. S. Latham, Lot 8, Anderson Rd., Mt. Pritchard.
 2ASQ—N. C. Scott, 181 Michael St., Jesmond.
 2AQS—N. F. Taylor, 17 Margaret St., Strathfield.
 2ATW—T. E. Whitfield, 10 River Rd., Oatley.
 2ZAP—F. H. Wagner, 32 Ruskin St., Beresfield.
 2ZBO—R. F. V. Crewe, 88 Wycombe Rd., Neutral Bay.
 2ZBY—J. T. Jarrott, 50 Workshop Rd., Cardiff.
 2ZDP—E. A. Phipps, 62 Scyalla Rd., Oyster Bay.
 2ZEB—R. E. Birley, 11 Musgrove St., Mosman.
 2ZJA—N. H. Stanley, 5 William St., New Lambton.
 2ZMB—B. J. O'Sullivan, 8 Springfield Ave., Potts Point.
- Victoria
 3AP—A. H. Bowley, 49 Haros Av., Nunawading.
 3BC—B. D. Cooper, 10 Mary St., Coburg.
 3EY—D. N. Freckleton, 8 Firebrace St., Horsham.
 3FV—K. F. Chick, 2 Eurythmic St., Mordialloc.
 3LZ—C. A. Ellis, 3 Ivy Court, Moorabbin.
 3NW—F. K. McTaggart, 37 Ryeburne Ave., Hawthorn East.
 3OY—W. D. Iliffe, 9 Commercial Rd., Mentone.
 3PN—D. B. Schroder, Station: Mangalore Airport, Mangalore; Postal: P.O. Box 11, Avenel.
 3RU—R. F. Havnes, 6 Loloma St., Burwood.
 3SU—S. G. Edwards, C/o. 299 Richardson St., Middle Park.
 3SW—J. M. McConnell, 2 Adelaide St., High-ton, Geelong.
 3TF—G. W. Dennis, 315 Francis St., Yarraville West.
 3TM—W. H. Helliar, Lot 151, Elizabeth St., Clayton.
 3US—G. M. Churchward (Mrs.), 26 Barbara St., Vermont.
 3VL—R. M. Churchward, 26 Barbara St., Vermont.
 3XH—C. A. Hyatt, Lot 29, Roncliffe Rd., High-ton, Geelong.
 3YL—M. A. Henry (Mrs.), 1377 Dandenong Rd., East Malvern.
 3YU—R. C. Smith, 43 Williams Rd., Blackburn.
 3AAV—A. I. Dunclich, 17 King St., Moe.
 3AFL—S. L. Skinner, Lot 316, Aurum Cres., Ringwood.
 3AKQ—A. E. H. Swindon, 87 Brighton Rd., Elwood.
 3ALH—L. H. Allen, 8 Kalang St., Blackburn.
 3AMG—W. M. Meech, 54a Kemp Ave., Mount Waverley.
 3APL—L. J. Loughton, 43 Metherall St., Sunshine.
 3APX—P. X. Davies, 30 Wynnstay Rd., East Prahran.
 3AWD—W. D. Mather, 1 Pasadena Ave., Beaumaris.
 3AWH—W. Hampson, 27 Bayne St., Bendigo.
 3AWR—W. E. Knapp, 23 Cartwright St., Glenroy.
 3AXX—N. E. T. Turnbull, 11 Higham St., Cheltenham.
 3AYM—G. A. MacFarlane, Riverview Guest House, Riverine St., Bairsdale.
 3AZA—A. V. Macey, Station: Block 557, Red Cliffs; Postal: P.O. Box 34, Red Cliffs.
 3AZK—J. L. Thomson, 1 De Blonay Cres., Greensborough.
 3ZAF—P. E. Linden, 1 Bishop Court, Mount Waverley.
 3ZAS—C. R. Stilwell, 9 Cobden St., Bendigo.
 3ZAW—M. J. Williams, 43 Mercy St., Bendigo.

3ZBG—J. G. Goodall, 14 Gresford St., North Sunshine.
 3ZDK—K. J. McLachlan, Station: "Whispering Trees", 157 Mt. Dandenong Rd., Croydon; Postal: P.O. Box 90, Croydon.
 3ZEK—D. D. Watson, 64 Newcastle St., Preston.
 3ZEW—L. T. White, 50 Baker Pde., Ashburton.
 3ZGK—D. J. Knox, 5 Rotherwood Rd., Ivanhoe.
 3ZGT—L. N. Tate, 5 Rotherwood Rd., Ivanhoe.

Queensland

4AG—A. J. Greenham, The Crescent, Kallangur.
 4AX—H. R. Denby, 301 Severin St., Cairns.
 4BI—J. Bermingham, Station: Ilcombe Rd., Longreach; Postal: C/o. Dept. of Civil Aviation, Longreach.
 4DK—A. J. Kelly, (Dr.) 89 Wickham St., Ayr.
 4EF—E. P. Feil, 97 Jubilee Ter., Bardonia.
 4EP—E. J. Farow, Station: C/o. Mr. Ross, Mt. Kynock, Toowoomba; Postal: Box 21, P.O. City North, Toowoomba.
 4FE—A. R. Burton, 65 Rosecliff St., Highgate Hill.
 4GT—W. G. Heaton, 8 Gibbon St., East Ipswich.
 4ND—N. G. Dangerfield, Station: Cr. 14a and Ninth Ave., Home Hill; Postal: P.O. Box 82, Home Hill.
 4OC—E. B. Connor, Ronnoc Downs, Fernless.
 4OH—H. T. Overend, Station: Johnstone Rd., Mossman; Postal P.O. Box 264, Mossman.

4PW—D. W. Presland, Garrick St., Collinsville.
 4RR—K. W. Beale, Gregory St., Cloncurry.
 4SG—S. R. Grantham, 24 Deloraine St., Wavell Heights.
 4SW—W. W. Stacey, 18 Hunter St., Maryborough.
 4TD—T. A. Dale, London Rd., Eight Mile Plains.
 4XM—W. A. McDivitt, 223 Lake St., Cairns.
 4ZAB—T. E. Meredith, Davidson St., East Ipswich.
 4ZBD—D. B. Hughes, Station: No. 3 Gothic Court Flats, Clontarf Beach; Postal: C/o. P.O. Clontarf Beach.
 4ZBM—D. Moller, Station: R.A.A.F. Transmitting Station, Belgian Gardens, Townsville; Postal: Base Squadron R.A.A.F., Garbutt, Townsville.
 4ZBP—T. F. Pool, Station: Employees' Quarters, Johnston Motors Ltd., Oondooroo St., Winton; Postal: C/o. Johnston Motors Ltd., Elderslie St., Winton.
 4ZBS—L. J. Street, Cr. Fleming and Farrett Sts., Yandina.

South Australia

5BN—G. F. Barton, 62 Marlborough St., Malvern.
 5CX—C. E. Moule, 68 Sussex Ter., Westbourne Park.
 5DM—R. P. Mills, 13 Taylor Ter., Rosslyn Park.
 5DS—D. Scott, 33 Albert St., Windsor Gardens.
 5EZ—L. E. Hauber, 230 Glen Osmond Rd., Fullarton East.
 5LL—G. F. Lucas, 3 Seventh Ave., Trinity Gardens.
 5QW—B. G. Waight, 27 Robert St., Brighton.
 5RL—R. L. Larsson, 20 Justin Ave., Northfield.
 5TL—T. Laidler, P.O. Residence, Renmark.

5UX—L. Wallbridge, Hawker.
 5WM—W. J. C. Bayly, 90 Halsey Rd., Henley South.
 5ZBI—B. J. Warman, 2 Yaralin Ave., Klemzig.
 5ZBE—B. C. Cleworth, Flat 5, Trammere House, King's Grove, Trammere.

Western Australia

6AJ—A. J. Jeffrey, 8 Darlot Cres., Sth. Perth.
 6AK—G. H. Lee, Marian Ave., Armsdale.
 6DW—A. D. Hawksworth, 12 James St., Basseaden.
 6GA—G. W. R. Ashley, 31 Flinders St., Mount Yokine.
 6LS—L. S. Eddington, 95 Normanby St., Inglewood.
 6LU—L. Stagg, 58 Esperance St., Victoria Park.
 6MA—A. M. Austin, Chidous.
 6PC—C. A. Pinkus, 29 Eric St., Como.
 6SK—A. A. Skinner, 146 Boulder Rd., Kalgoorlie.
 6TR—T. W. Reed, 30 Ada St., Watermans Bay.
 6ZAH—L. E. Gooding, Darkan.
 6ZAN—R. J. Skevington, 194 Laboushere Rd., Como.
 6ZBJ—B. J. Clarke, 115 Carr St., West Perth.
 6ZBV—B. R. Fryer, C/o. R. Whitting, Gooseberry Hill Rd., Maida Vale.

Tasmania

TEJ—E. J. Cruise, 46 Colville St., Battery Point, Hobart.
 TFM—T. F. Moore, 23 McGuinness St., Lenah Valley.
 TPF—P. D. Frith, Uppr. Nicholas St., Devonport.

Territory of Papua and New Guinea

9AA—R. H. Harrison, C/o. Dept. of Posts & Telegraphs, Goroko, N.G.
 9AU—R. A. J. Taylor, C/o. Dept. of Posts & Telegraphs, Fort Moresby, Papua.
 9TC—T. M. Cole, C/o. Dept. of Posts & Telegraphs, Kavieng, New Ireland.
 9WL—J. Widdup, C/o. Dept. of Posts & Telegraphs, Sohano, N.G.

CANCELLED CALL SIGNS

Victoria
 VK—New South Wales
 2AP—A. P. Reynolds.
 2CN—N. McNabb.
 2PB—M. T. Smith.
 2PO—R. B. Reeks.
 2WB—R. W. Bishop.
 2ZV—D. A. Hands.
 2AKL—A. Fairhall.
 2ALD—R. Smith.
 2AOA—K. F. Alcock.
 2AQC—P. R. Ladd.
 2AQZ—B. K. Brown.
 2AUF—K. Postler.
 2AVT—V. E. Tierney.
 2ZCK—I. M. McCosker. (Now VK2AXI).
 2ZDB—A. J. Bowman. (Now VK2ASB).
 2ZJF—B. J. Foster. (Now VK2AWF).
 2ZJS—K. G. Scott. (Now VK2KXS).
Victoria
 3EO—R. A. H. Russell.
 3WE—A. R. Williams.
 3ADC—D. Charlton.

3AGA—M. N. Russell-Clarke.
 3ALF—L. R. Fowler.
 3ASK—J. W. Smith.
 3ZAF—P. E. Linden. (Now VK3BX).
 3ZAJ—J. I. Kelleher. (Now VK3AJJ).
 3ZCJ—J. M. Hamilton. (Now VK3AYH).
 3ZDJ—D. G. Johns (Now VK3AZJ).
 3ZDT—P. G. Thorne.
 3ZDZ—W. H. Henson. (Now VK3AHZ).

Queensland

4HG—H. G. Brown.
 4HM—H. J. Murphy.
 4WA—W. J. Barker.
 4WR—R. F. Woolley.
 4ZAM—K. N. Long. (Now VK4VM).
 4ZAY—R. J. Conway. (Now VK4CR).

South Australia

5HI—J. H. Clifton.
 5ZBQ—A. B. Hollebon. (Now VK3EQ).
 5ZGT—B. G. Tideman. (Now VK3STN).

Western Australia

6RE—E. F. Robins.
 6ZBD—W. K. Hobley. (Now VK6KH).

BOOK REVIEW

"RACE FOR LIFE"

By Jacques Remy

Many readers will already have seen and enjoyed the unusual French film "Race for Life", in which the crew of a French fishing trawler at sea was smitten by a deadly food poisoning. Their call for help was heard by a Radio Amateur in Central Africa and medical aid finally arrived through a tortuous maze of contacts via channels ranging from official to highly unofficial.

A translation of the original novel is now available. One sees immediately that a considerable amount of "revision" went into its preparation for the cinema. The original trawler was Swedish and the name of the disease with which the crew was afflicted is never mentioned. Characters were largely altered for the film, some being omitted and others substituted.

Many anomalies are evident to the technical reader. Skip distances are puzzling, call signs are incorrect (perhaps deliberately), operating procedures are unfamiliar. One "Amateur" finally decides that his rig might operate better if he erects an antenna! One is amazed at the thought of Italian smugglers using the Amateur bands for open speech communication between base and field party. Even more amazement is felt that the smugglers' base operator is sufficiently compassionate (and foolhardy) to act as a relay for the distress message, leading to his own discovery by police and postal officials.

The author, in perhaps typical French fashion, uses the whole episode of the distress relay as a background for a chain of sexual intrigues, reminiscent of "La Ronde". This mixture of sex and Amateur Radio seems peculiar to the Australian viewpoint, since in this country "Ham Radio" appears to have a somewhat opposite effect on the senses. There is a strong parallel with Koestler's "This Age of Longing", where East-West politics act as a puzzling basis for a textbook on erotic psychology.

Nevertheless, the plot moves steadily from scene to scene and the tension is well built up. Despite the apparent anomalies, or possibly because of them, the book makes very good reading.

"Race for Life", by Jacques Remy, Four Square Books, 3/6.

—Reviewed by Laurie Walters, VK3CN.



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DX

John C. Pinnell, VK2ZR
15 Summit Avenue,
Earlwood, N.S.W.

In thinking over the news for the DX Page it has become clear to me that in the art of DXing a wide range of requirements must be catered for. The DX bug is a very funny little creature, he bites some very hard early after going on the air, and others seem to be missed for a long time; in my own case for about 27 years. Now, thinking in terms of good DX contacts it just depends on how long ago and how deeply the bug has bored in. Some fellows may be striving to chalk up 100 countries, or perhaps complete the 40 zones and will go after anything, in the early stages, that will bring them one point nearer their goal. To them any new country or zone, wherever it may be, is good DX. On the other hand the hardened DX'er has worked them all, or at least almost, and to him good DX is the fellow who goes on a DXpedition to some out-of-the-way rock in the ocean or other difficult spot and sets up his gear and uses a call sign that is different to anyone else in the world. Perhaps the call sign is used for only a few hours or may be for a few days, but while he is there the "Top-DX" boys come out in full force and the scramble is on.

When you first start chasing DX you wonder how any contacts are made through this wild scramble of QRM. In some cases, two and even three contacts a minute are rattled off, so you steer clear of them and look for easier ones to conquer. As time goes on the easier ones become scarcer and you now become attracted more and more by the "rarer ones" and finally you are competing with others to get the most difficult DX.

Now, I think these notes should try and cater for everybody's need, whether he be the beginner climbing up the first few rungs of the DX ladder or away off the top looking for something that does not exist except for perhaps those organised DXpeditions which do add a new rung or two to mount. So fellows, let me have your ideas and help by writing any news, information or suggestions you may have. Don't hang back, please write each month.

NEWS AND NOTES

Malaya.—On Jan. 1 the VS2 prefix was changed to 9M2. The new prefix caused quite a bit of excitement on the bands for the first few days but the majority now know of the change. 9M2FO, ex-VS2FO, is operating regularly on the 14 Mc. c.w. band, and 9M2DE (VS2DE) should be on s.s.b. by the time these notes reach you.

Tanna Tuva.—Mike UA0OM will be going to Tanna Tuva in May next. He has already given many VKs their first Mongolian contact.

Swaziland.—ZS5RP/7 will be permanently located in Swaziland and is now awaiting his permanent ZS7 call. He is currently active on 14 Mc. c.w., but should be on phone any time now. He uses about 25 watts and usually operates between 1800 and 2100z.

Macquarie Island.—Clive Cooke will be operating from Macquarie Island during the year 1959 on c.w., a.m., and s.s.b. QSLs will be handled by VK4FJ on a card-for-card basis. To facilitate rapid checking of log books, give the time of QSO in GMT.

Trucial Oman.—Andy MP4DAA, on Das Island, counts as Trucial Oman. He listens for stations on 14 Mc. phone at their request, but apparently at present he transmits on c.w. only. He is changing his gear to get going on 28 Mc. phone. MP4TAC is active from Sharjah on 14 Mc. phone and a "new one" is about to open up from Qatar as MP4QA.

Sultanate of Oman.—Brian VS9AS will be on duty in Oman for about six months. His little 8w. rig will be xtal controlled on 14000 and 14050 Kc. and his call will be VS9OM. WBSY is being acting as Brian's QSL manager and will continue for the VS9OM operation.

Faeroes Islands.—OY1J is active on 7 and 14 Mc. c.w. with a 10w. rig.

* Call signs and prefixes worked. z zero time—GMT.

Malta.—ZBIUSA (ex-VPSUS) is using cubical quads on 14, 21, and 28 Mc. His mailing address: H. H. Wheeler, Faron Special 201, Navy 240, Box 4, F.P.O., New York City.

Percy ZSSRO will be in Swaziland (ZS7) for three days over the Easter week-end.

The big Czech DXpedition should be on its way this month. They expect to visit about 60 countries. Their operator, George OK1HZ, should be out of hospital with his broken leg mended and ready to operate.

UI8KAA, UI8KAE, UI8AG and UI8IM are all active on 14 Mc. c.w. around 0900 and 2000z.

UJ8AG and UA8KAA are supplying contacts for those in need of Tadzhik. Time, early morning.

At the present time most European countries are easy to contact between 1800 and 2100z. There should be no trouble in landing three or four before breakfast.

FB8CD will be back on the Comoro Islands this month after a stay in Paris.

Reports say AC4AX will be on the air any time now. He has been QRL with his work.

Ex-VR3A, now VK2ANB, wishes it to be known to his fellow Hams in VK-land that he is active again, for the moment principally on 7 Mc., but will be operating other bands as time goes on. Another rather important piece of news is that he has completed his arrears in QSL cards, and these have been sent to the Bureau for passing on. According to his records, all QSLs are now finished, as far as VR3A is concerned, and any Ham who feels that he has been overlooked should communicate with Ray direct at 41 Lawson Pde., St. Ives, N.S.W.

Japanese scientists moving into Antarctica this year will use new prefixes for their Antarctic Radiotele station. The familiar JA1JG of last year at Showa Base will probably be 7J1AA or 8J1AA.

The lower edge of the 7 Mc. band is worth watching, as occasionally a choice one slips through without any takers. There are only two known legit Albanian stations, ZT1KB and ZA1KC, and both work the low edge of 7 Mc. exclusively.

LU2DFY is on 21 Mc. s.s.b. He is a member of the U.S. Air Force stationed at Buenos Aires. He will be active from there until the end of April.

Svalbard.—SM5/LA/P has been worked by many VKs. My contact was on 14 Mc. at 0945z. Two others known to be active are LA2JE/P on 28 Mc. and LA2TD/P on 14 Mc.

ZD2JM has changed his QTH from Kaduna to Kano, Nigeria. He operates on 28 Mc. from 0800 to 1300z and 14 Mc. around 1800 and 2300z.

CR10AA, Portuguese Timor, was reported heard on 14 Mc. at 1400z.

QTH OF POSSIBLE VALUE

ZD2JM—John MacIntyre, C/o Post and Telegraphs, Airport Kanu, Nigeria.

VS8AQ, VS8AP or ex-VS1HC—Dave Parr, G3MIR, "Exeligh Lodge," Eleleigh, Starcross, South Down, England.

ZA1AB—Box 385, Tirana, Albania.

SV0WAE—H. Y. Cogburn HM/1, USCGC Courier, WAGR 410, APO 223, New York, N.Y., U.S.A.

OY8RJ—Ployeengsoeta Nr. 5, Thorshavn, Faeroes Islands.

PZ1AM—Arno Meubelman, P.O. Box 12, Coronie, Surinam.

EA0AC—Juan Medem San Juan, Apt 195, Box 12, Santa Isabel de Fernando Poo, Spanish Guinea.

SA3TQ—Box 325, Tripoli, Libya.

YNIARM—Jim, U.S. Army Mission, C/o, U.S. Embassy, Managua, Nicaragua.

ZC5SF—Jino, Sandakan, Borneo.

ACTIVITIES

7 Mc. C.w.—2ZR: Ws*, VE*. WIA-L2022: VE3BLU, WNs, KNs.

14 Mc. C.w.—2AGH: EA8CP*, ET2US*, EI9Y*, CEOZA*, HB9PF*, HK7AB*, KC6TM*, JZ0DA*, MP4TAC*, SL3AG*, SM5WN/LA/P*, UA0KAR*, UD6AM*, UO5AA*, UR2AK*, VE8MX*, VP2SW*, VPR6G*, VP2LV, VS5JA*, VS9AQ*, VS9MA*, VS9MI*, VU2GE*, 9M2FR, 2AMB: ET2VB*, FB8CJ*, FO8AC*, FQ8HA*, HC4IE*, JT1AA*, OQ5HU*, VQ3HD*, VS8AT*, ZP5AY*, FA8UO, CR7CK, KC4UXS, KC6SF, KM6BL, OX3RS, VQ4GT, VU2BK, VU2CR, VU2GE, VS9MI, 3A2FB, ZB8JJ, 2ZR: EA1EG*, EA3GF*, EA5BD*, EA5PI*, EA8AQ*, FF8B*, FQ8AP*, FQ8HA*, G13MOO*, HLI4U*, KC6JC*, KC6KR*, LU401*, SM5WN/LA/P*, ST2KO*, VP9EP*, VQ3HD*, VQ5EK*, ZC4AM*, ZC4IP*, ZS5SL*, 4X4DR*, 4X4JR*, 4X4JU*, 5A2CU*, 5A3TQ*, and 57 Europeans. 2QL: ZL1PP*, ZB8JJ*, VS5JA*, VP2SW*, VP9EP*, PZ1AP*,

OA6PY*, FB8XX*, 9M2FO*, 9G1CF, 3A0M: HK4HW*, HR1MM*, JA4AF*, KR6SS*, PZ2AQ*, VE1E1*, XW8AL*, WDO: CX1BO*, FA6RJ*, CR6AR*, CR6BX*, DL5*, Gs*, KP4AIO*, KW6CO*, OK1KJS*, OX5UD*, UA1KAE*, UA0CN*, UA0KAR*, UA0KKD*, UA0OM*, VS1HU*, VS5JA*, VE8MX*, ET2VB*, EA8CF, EA8BC, EA8AQ, CR5AR, IT1AI, FT8AJ, KC4USG, PA1BRD, PZ1AP, OQ5JR, ST2AR, VP9OX, OQ5JR, VQ4AO, VQ3HL, ZS5RF/7, ZC5SF, 4X4CJ, 5RK: JAs*, Ws*. L2022: CE4AB, HC1LE, HL1AU, KZ5RD, MP4BBE, OH8OB, VP9EO, VQ6LQ, VS5JA.

21 Mc. C.w.—2AGH: Gs*, Ws*, DLs*. 2ZR: EI9Q*, FBVQ*, G3HIW*, FA0VB*, SM7AHT*, SM5BIR*, UA1KUA*, VS1GZ*, ZEGJE*, 2QL VQ3HD*, ZEGJE, 40D: ZL, W, KH6, JA5FT, L2022: GM3EST, UA1CJ.

14 Mc. Phone.—4DO: Ws*, KH6s*, VE*s, VS5JA*, YV5BV, 5WP: SV1AE*, ZC4AM*, ZC4AG*, ZC4AG, EAs, Gs. L2001: EA3JE, F3BI, HL9KS, FK9AJ, VE1E1, VK9RL, L2022: XW8AL, L2048: HP1CC, CM9AA, FB8BP, 11HP, JA4AF, K6MXG, VK9YT, VK9DB, VQ8AD, VS2HC, XW8AL, ZESJU, ZETJR, ZK1BS, 4X4HA, L3065: Many KH6s and Ws, DU6IV, HC1FJ, HR1MM, HR9KZ, FUA8K, 11ZVD.

21 Mc. Phone.—4DO: ZLs*, Ws*. KP4ADR, L2001: G3HKQ, CT1PK, HL8KT, JA6BG, KR6BG, KR6QB, KR6RK, KR6RP, KH6BPF, VK9BS, VR2DZ, VS1GZ, W6SSJ, 4X4KJ, L2022: FU8NS, OH2MQ, SM5CO, FU8NS, XZ2SY, L2048: JA2ACB, JZ0PB.

QSL NEWS

2AGH received F71ZC, FWA8S, KH6MG/ZK1, FJ2ME, UJ8KAA, UQ2EF, VK2FR/LH, VP2KF, ZL3DA (Chatham Is.), 2AMB: CM8AB, CM8DJ, FF8AC, PA0FX, SP2AR, VS9AT, ZK1AK, 2QL: F9QV/FC, FB8XX, FB8ZZ, KC6SF, KH6MG/ZK1, OY7ML, UD6AK, UD6AM, UF6FB, VPTNE, ZK1AK, 3A0M: KZ5RD, CO2MG.

A note re the Novices from WIA-L2022, Mt. Raven, Holbrook, N.S.W. If any of our listeners would care to send him a list of Novices heard from U.S.A., particularly on 7 Mc., he will forward them on to the States to a colleague of his who will inform the operator concerned. QSLs usually follow in the mail.

I wish to thank all those who sent along their notes this month. The DX Bulletin from W4KVX has again assisted me greatly with much valuable info. 2AGH found 15 Mc. mostly poor; he has now worked 231 countries. 2AMB is still getting some of the good ones. 2QL is always on the ball if there is a bit of good DX around, and his comments with reference to this page appreciated. 3OM has not been so active this month, been holidaying in Sydney, visiting his son, ex-VR3A, now VK-2ANB. His letter contained valuable news items. 4DO was at the beach in a caravan for part of the month, but also found time to hook some good DX. 5RX and thanks Ray for your letter. 6WP is happy with a new country, YN1CJ, that makes him 130 all on phone. WIA-L2001 is doing well on both 14 and 21 Mc. phone reception. WIA-L2022, it is good to know the W.I.A. Course has brought you up to the stage of being ready to sit for the examination, best of luck, Don. WIA-L2048 is doing some good work with phone reception. WIA-L3065 has now heard a total of 49 countries on his home brew 4-tube rx.

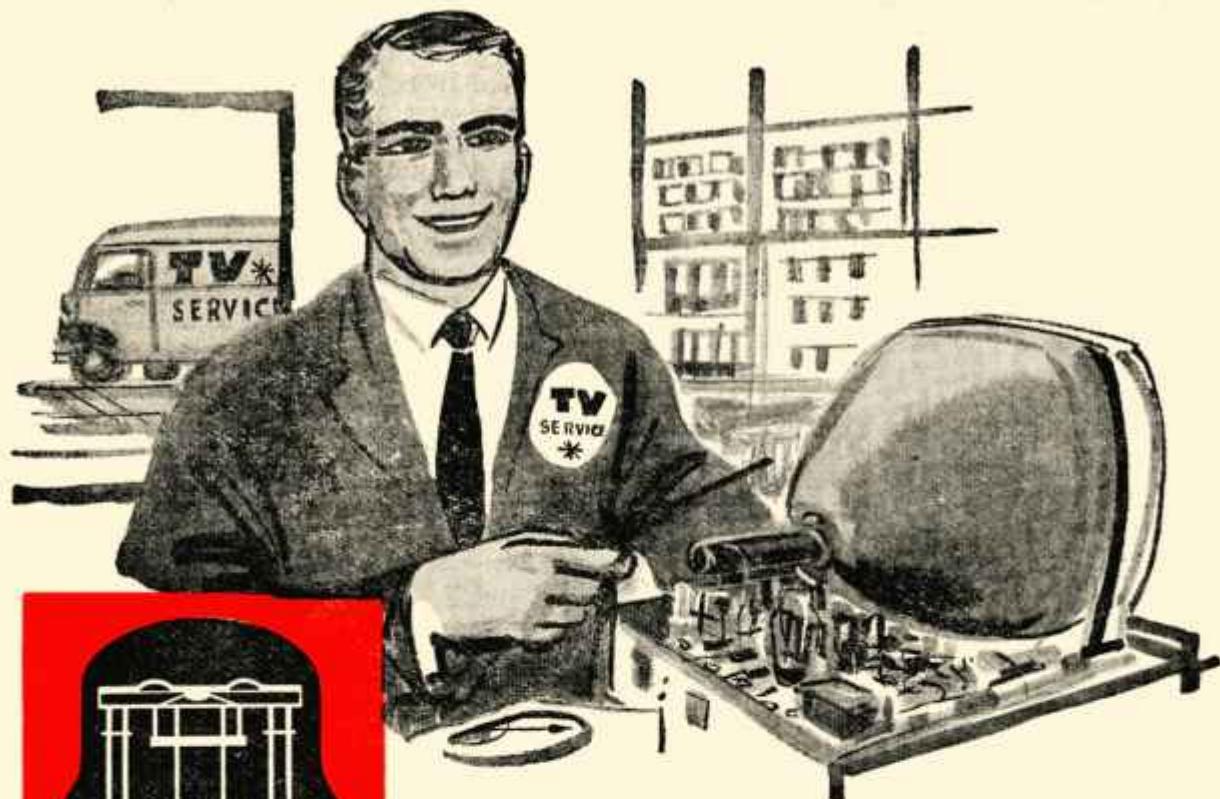
Most agreed that the bands were not so lively this month. It may have been due to the holiday period or perhaps it was Old Sol up to some of his tricks. 14 Mc. took pride of place with 15 metres a very bad second, and 10 metres hardly mentioned. I would like to hear more from the 10 mx gang. It seems to me that we should make better use of the 7 Mc. band and not give it over to the Commercials. Many good pickings are to be had if you wedge yourself in between the Commercials and then carefully manipulate your receiver. 73 until next month.

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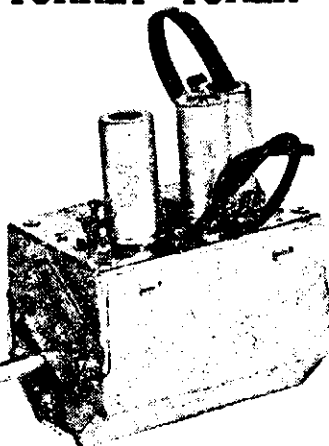
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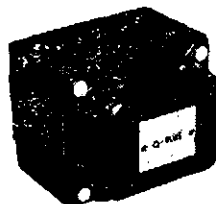
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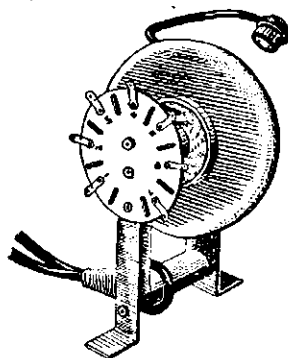


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VHF

Frank P. O'Dwyer, VK3OF
190 Thomas Street,
Hampton, Vic.

Have you sent in your log yet for the Ross Hull Contest. That is a MUST irrespective of your score. Give some return for the fun you had out of this entertainment provided by your F.E. through the Federal Contest Committee. Entertainment that provided endless discussion for the first couple of weeks, then a settling down to solid work as the DX came through. The Contest was a mighty baptism of fire for the newcomers to the band. Most closed their logs on the last day with a quiet determination to have their gear in top notch condition for the start of the next Contest, and mostly satisfied with the way they held their own and made their share of contacts during the hectic periods. Now is the anticipation of repeating many of the "first contacts", the greeting next time of an Interstate operator as an old friend. The last two weeks of the Contest passed quietly, openings not being as frequent as they had been during the preceding month. In the closing hours of the Contest VK6 signals appeared in VK3 and Jock 3ZDG chased them until the small hours of the following morning, finishing with a contact with Mac 3QO around 0300. Both well known members of the unofficial "Night Owls Club", maybe they are trying to start an "Early Hours Club".

DX.—Feb. 1, as an anti-climax, an excellent opening from VK3 to Northern VK2 and VK4 allowed the boys to yarn for a while on 50 mc., a change from the normal short contact of the Contest period. While the VK4s were still rolling in and most of the VK3 gang were at lunch at 1238 E.A.S.T., JA signals boomed in to 9 plus for five minutes and gradually petered out over the next five. By 1258 there was no sign of them. Sunday, Feb. 8, Bob 4NG had a contact with KR6AK. KR6AK later reported hearing weak VK signals on Wed. evening, Feb. 11, and the logging of Bert 3KU a couple of nights earlier. VK5 had a couple of scratchy openings to JA while 2AXI had them crashing in on Feb. 10 and 11, so much so that he nearly became tired of working them.

General.—Taken all round the average 50 mc. operator makes a good contact either local or Interstate, only too willing to swap news, discuss experiences, describe gear and help with technical problems. And there are many smart boys among the rising generation. To offset this is their reluctance to pass on news to the other fellow whom they do not work. We rarely hear of country stations and there are many of them active. Probably Interstate fellows know more of their doings than those in the metropolitan area of their own Division. A VK6 is just as keen to hear what a VK4 or 5 station is doing as he is to know what is going on locally. The same applies to all Divisions. Often items are written into the notes but no details can be given, possibly because the news came by devious channels and through many mouths. Under these conditions occasional minor errors must occur as to what, who, and when. This is an appeal for accurate and up-to-date news. When you hear or work something special, send the information in. Country stations are requested news of their activities. City and country Ham alike, if active you get a lot of fun out of the game. Do not be selfish. Help the other fellow to keep abreast of what is going on. Perhaps writing is a frightful bore, but rise above that for the sake of the other fellow. Even information every 2 or 3 months is better than nothing at all.

No. 2 on the list is the coming advent of t.v. in Divisions apart from VK2 and VK3. Many a wrinkle has been discovered for the t.v.i. proofing of transmitters on 50 mc. and higher frequencies. Those in VK2 and VK3 who are t.v.i. proofed are asked for information on the methods they are using, what they have done, the problems they have encountered. General information is available, but save those who have the 50 mc. t.v.i. problem before them a few headaches and perhaps a lot of trouble. After all, these fellows are your cobs, the chaps you frantically call when the band is open. Help them by giving information before the one-eyed monster curtails their activities and consequently reduces your potential number of contacts. Anything received will be published, with or without your name as you desire.

These two paragraphs apply equally well to those who operate 144 or 288 mc. or higher. Firstly, from the news angle you cannot expect your Divisional scribe to be all seeing and all hearing especially if you are outside the metropolitan area or not active in the local v.h.f. group. Secondly, although you do not work them yet on those bands except in isolated cases, your fellow enthusiast Interstate will have the same problem with t.v.i. to face up to in the future.

NEW SOUTH WALES

At the time of writing the N.S.W. Divisional Convention at Dural has just concluded and makes another successful occasion of the year. The v.h.f. gang were well represented and amongst those noted from the country were VKs 2ZDL, 2ZDF, 2ZR and 2ZMD. It was pleasing that a v.h.f. hand, Phil 2ZBB, won the prize for the best city member built item, which was a very compact 2 mx rig.

Fox Hunt, 21/1/59.—John 2ZAV was Fox on this event and hid the tx beside the Parramatta Road at Rydalmere. Sniffers were to the fore again and although Bob 2ASZ was first into the area, 2AWZ accompanied by 2ZAQ piped Bob at the post. Bob was accompanied by his XYL. The remaining hounds came in as follows: 2ZCF with 2ZAL and family, 2AZC with 2ER. Also out but apparently in difficulty were 2ZBX and 2ZFC. Compliments to John's XYL for the excellent supper. Missing from the scenery were Jim 2PM and Bob 2QA who were on holidays. Jim has been down the south coast and kept in touch via 40 and perhaps it was some loyalist who couldn't bear seeing the v.h.f. chairman using d.c. and stole his 40 mx dipole from the guest house. Did you think of that Jim? By the way, somehow the results of the Nov. Spring Field Day went by without being officially recorded and are as follows: 1st, 2ZCF, 225 points; 2M2, 216; and 2ER, 213. Congrats to Dick again.

50 Mc.—January has been a fairly active month in VK2 with regular contacts to VK3, 4 and 5 and with openings to 6 and 7. The ZLs seem to have evaporated since losing their end of the band and JAs have also passed out. Building activities for the band have been moving and 2ZCF and 2ZRX have built new rigs. 2ZAU, 2JX and 2ZJK have been other stations making an appearance on the band.

144 Mc.—Good Sporadic E break-throughs have occurred and on 12/1/59 and for a week after Sydney stations were able to have good contacts with Ken 2ANU at Mussebrook, a distance of over 100 miles. Also contacts were made with Warwick 2ZMS at Greta, who has recently got going. Back on the band with a big sig. is Bob 2QZ who now has a new 829 rig with l.m. and a grounded-grid converter. Congratulations to Alan 2RX and Yvonne on their first, a boy—Craig Allen. Fred 2ZF is departing permanently for Lismore, and we depart with him the best of his move. Tony 2ZBU is now in his new QTH at Hornsby and surprised the gang when he came up with an S9 sig using an indoor t.v. antenna. Must be a super location Tony. Neville 2DR at Blayney is again making skeds with Sydney and is currently contacting 2ZCF at 7.30 p.m.

Coming Events.—Don't let the dust gather on that mobile equipment as there will be many good events coming up soon and include March 8 a treasure hunt and March 18 a mobile fox hunt. Also keep in mind the monthly meeting held on the 6th March at the Gore Hill Tech. College. Further details on this meeting and all events are given in the Sunday evening v.h.f. broadcast at 7.30 p.m. See you next month.—2AWZ.

VICTORIA

January proved to be a fairly quiet month on 6 mx with only a few openings to VK2 and VK4. A promise of things to come happened on 1st Feb. when Frank 3OF and Peter 3ZDO heard JA2AEE at 1238 at S9. Whilst marking time on 6 mx a number of Melbourne stations have been concentrating on 1 mx with a considerable amount of success. At the present time a good proportion of 1 mx operators are using stabilised tx's and most have converters, both of which appear to be the secret of success on this band. Some outstanding contacts for the month on 1 mx include the two-way contact between Ron 3ZER portable at Avoca and Jock 3ZDG in Melbourne, a distance of about 110 miles (is this a VK3 record?); the hearing of 3ZDG and David 3ZAT in Ballarat by Les 3ZCN over a fairly difficult 70-mile path, and the regular contacts of Bill 3BU from Geelong to Melbourne.

Bill 3BU in a recent letter says that 1 mx activity in the Geelong district is on the increase. He has recently erected a 16-element beam with the assistance of 3ABK and Fred 3ALG. The beam is 70 feet above ground level and should help Bill to put a t.v. picture

into Melbourne when he stokes up his new t.v. camera tube.

Two mx activity in the Melbourne district has been low, but it received a temporary boost on Jan. 16 when Melbourne stations worked 7LZ, 7PF, 7BQ and 7RL at strength up to 9. In contrast the Western and Eastern District gangs have been quite active and Gordon 3ZEL once again sends in the following report of doings in the west. 3ZEJ (West Ballarat) has arranged skeds with Jim 2AJO at Coolamon. Jim transmits on 144.31 mc. each Friday at 2030 for five minutes and then listens. So far they have had no success, but are hoping that a contact will stimulate interest among other local VK3s. Don 3PO has shifted his QTH to a high spot in Ballarat and is back on 2 mx. Interstate DX from Ballarat includes VKTs on four occasions in Jan. with a notable effort by Brian 3ZBS who worked Col 7LZ from Mt. Buninyong using a 6V6 doubler, and contacts with 5GJ. During the VK7 break-through Gordon 3AGV in Colac managed to bag his first VK7. Finally, the Ballarat gang have been working with 3ZDP at Sale and 3ZAB in Traralgon over approx. an 180-mile path.

The Jan. v.h.f. meeting was held in the new rooms in Victoria Parade for the first time and quite a number of members attended. Jock 3ZDG was the first lecturer and gave a theoretical and practical demonstration of a Parametric or Reactance Amplifier for 6 mx. Jock has found that the germanium junction diode OA10 is suitable for the variable reactance and uses half a 6J6 as a pump oscillator on 100 mc. Although he has had considerable success at his home QTH with the amplifier, Jock found it to be temperamental at the rooms (he ought to get a better sprung motor bike), but was able to show that the tuned circuit could be tuned across the band merely by altering the reverse diode bias and also that the circuit could be made to oscillate at 50 mc. with the pump osc. on 100 mc. The second speaker was Bob 3ZAN who gave a description of and brought along one of the new commercially available 2 mx v.f.o.'s. The meeting set the dates of the last two Field Days of the season as Sunday, March 8, and Sunday, April 19.—3ZAI.

NORTH QUEENSLAND

4ZBE, active just under 12 months, has worked 200 stations for 300 contacts with VK2, 3, 4, 5, 7 and 9 and about 150 JA call signs in all JA districts for 250 contacts. He hopes to catch the missing VK6 very soon together with the ZL4 he missed when he worked 10 ZLs in districts 1, 2, and 3. Main event in this area during the past year was the cracking of the 6 mx barrier between Townsville and Charters Towers. Now there is a regular sked at 1730 E.A.S.T. daily and there has not been a single failure since the sked started. Active stations in the area are VKs 4LK, 4ZAK, 4PS, 4ZBE and 4ZBW. One of the surprise contacts of the Ross Hull Contest was the working of Lance 4ZAZ three times during one of which he was mobile at a distance of 300 miles. The band to JA opened on Feb. 8 at 2100 and again the following night. Signal strengths were really good and the boys enjoyed themselves. The advent of the JAs may stir up a bit of activity in this locality. There are some 30 stations in this area but generally the inclination is not to operate 50 mc.

Equipment used by the active stations include 4ZBE, 25w. to an 832A, v.f.o. controlled, to a 7 el. Yagi about 30 ft. high, mods. 807s, xtal converter; 4ZAK has approx. 20w. to an 832A feeding a 2-el. Yagi, 20 ft. high, with a new 4-el job under construction; 4LK has 80w. to p.p. 807s with 4 el. up about 42 ft.; 4PS has 30w. to a single 807 into a folded dipole 20 ft. up, he has a 3-el. under construction; 4ZBW is just getting started with a 2E26 running 15w. and a cubical quad.—4ZBE.

SOUTH AUSTRALIA

The DX season seems to be on the wane at the moment, the 50 mc. band being dead for the last week. A couple of break-throughs to VK6 with intermittent contacts to VK4 and upper VK2. VK3ZCW was portable VK5 on 27th Jan. and worked 4ZAZ. George 5ZGA worked 3ZGL who was portable VK6 on 29th Jan. Reg 5QR had two scratchy contacts with JA3CE on phone. Reg tried to finish the contact on c.w. but no success. David 5AW heard here on back scatter working VK4.

The Ross Hull Contest is over and it is apparent from the numbers heard that Bill 5ZAX is the provisional winner in the State with Reg 5QR a close second. I wish to emphasise the value of all logs to those who are collecting data for the Geophysics year and I request that all logs be forwarded even though the score may be small.

1st Feb. was a complete blackout on 7 mc. and the 50 mc. band was used for relaying the session to the country boys. Even Gordon

SXU called CQ on the band. Gordon's super-regen wasn't going too well and we managed to have half a contact. With a little persuasion I think we could get Gordon to build a xtal controlled converter, hi!

We welcome Malcolm SZBH back on the band after a break of a few months, keep on fellow, the JAs will be through soon. Col 5RO's 50 ft. tower went up on the holiday morning with the help of a 60 ft. mobile crane. The erection went along smoothly and all the concreting was finished by noon. Those in attendance were SZCR, SZBX, SZDL, 5MT and 5ZAW. I understand that the 4-el. went up this last week-end. Whacko, the DX! While on the subject of towers, I understand that some VK3 boys were over here demonstrating 60 ft. collapsible lightweights suitable for attaching to vehicles. It is also rumoured that two were purchased. By whom? Oh! That's a secret, but suggest you keep listening in a northerly direction and you might hear something.

The last week has seen cross-band activities. 50 to 144 and 50 to 288 mc. with talk of building rigs for 144 mc. by those who have not been on this band before. Curl is very enthusiastic about 288 mc., but doesn't know where to stack all his beams, seeing that the tower is still in his mother's backyard.

The fox hunt will be over when this news goes to print, but information is that those participating will be Barry 5ZBZ, Graham 5ZAF, Ken 5KC, Curl 5ZBL, Keith 5MT, Bill 5ZAX and yours truly. I also understand that several associates are building converters and will join in the fun.

Moves are afoot to make available the v.h.f. bands for practice in c.w. by Z calls. It is suggested that practice take place in the second megacycle of the 50, 144 and 288 mc. bands. These frequencies will not interfere with DX working, will help to use the bands to the fullest extent, and provide an easy means of practice for intending candidates for the full licence.

A committee of six has been formed to enquire into and advise on the constitution and rules necessary to bring into being the proposed V.h.f. Group. They are SZCR, 5ZAW, 5PU and three others elected by Council. Give them your support fellows, and bring forward your suggestions to help make this move a success.—5ZAW.

WESTERN AUSTRALIA

Nothing much to report on this month as things have been quiet except for a little DX on 6 mx. During Jan. a good time was had by all, frequent openings being experienced to VK5 and VK2. A few VK3s and 4s occasionally helped add variety. Incidentally, for the benefit of VK3, we would hasten to say that the lack of VK6 sigs into Melbourne was not through lack of activity over here; we just can't hear you. Perhaps some of the theorists can give us some reasons why nearly all the VK3 stations worked in Perth were from country areas. I am, of course, leaving 6WG out of it. Some of you chaps don't seem to realise that Wally is as far from Perth as Canberra is from Melbourne. Work that one out and then remember that 6FM and 6CK are a further 480 miles North of Perth. It's a big State! 3ALZ's beam seems to pay off, since he could be heard by 6BE and 6ZBZ when no other Melbourne stations were audible. Locations come into it here also, since 6BE is 1000 ft. above Perth, and 6ZBZ is the furthest city station from the hills and has a good location.

Beams are now turning north again waiting for the JAs. One reasonable opening was experienced during Jan. Several of the boys attempted to wrest numbers from the puzzled JAs to no avail! We think the longest distance prizes may come this way though for the 6ZBT-JA contacts, this being around 5000 miles. Since that day, however, nothing has been heard, with the exception of "old faithful"—HLKA. This station has been so consistent over the last 12 months that with proper receiving equipment it could have been used as a pretty fair source of entertainment.

News has come through that the W.A. V.h.f. Group has obtained its incorporation papers and has also been granted its station licence. The call sign is VK6VF. A 50 mc. beacon will very soon be sending out this call auto. m.c.w. keyed carrier within the first couple of weeks in Feb. Power will be 20w. Freq. is uncertain at present, but will either be 50.2 or 51 mc. Operation will not be continuous, but as many hours as possible will be put in. Unfortunately the authorities imposed some rather stringent requirements here!

Think that's about it till next month, chaps. Good DX.—6BE.

TASMANIA

Well, the Ross Hull Contest is over again and I think, as others probably do, it's about time some changes were made in the rules. The present rules relate only to a DX Contest and I consider are against the principal and aims of the Contest. The scoring should favour the use of the high bands instead of the 50 and 60 mc. bands which, after all, are only more or less h.f. bands when the m.u.f. goes high enough. We in VK7 know just how many more VK3s there are to work on 2 mx when they require additional points to supplement 50 mc. contacts, but stations are non-existent when 50 mc. opens at the same time. It is suggested that separate rules should exist for 144 mc. and above favouring increase in activity on these higher bands.

144 Mc.—The band has been open to VK3 for 10 days of the month with best days on the 16th and 30th Jan. 7FF, 7BC, 7RL and 7LZ have been active. 7RL worked first DX on the 16th after being caught with a xtal on 147 mc. He was able to later get another going on 144.35. He puts a good signal into Melbourne from his Stanley location. A converter is being finished to improve reception, 7FF caught with his beam down, but managed to work the stronger stations with a temporary 5-el. beam. Five new stations were worked including 3AGV, who for many years has been after a VK7 QSO. The 10-el. Yag1 is now 43 ft. and results so far show an improvement. A Parametric Amplifier is being experimented with for 2 mx. So far have only been able to make up the losses without actual amplification. For information see "CQ" Nov. and Dec. 1958.

Col 7LZ well up on the DX contacts, and the deletion of an r.f. stage from his converter resulted in a marked reduction in local station QRM due to mixer overload. 7BQ contacts unknown but 3BQ was heard in contact with him. 7ZAI was on locally in Devonport but as yet is not prepared for DX contacts.

VK3 stations worked by VK7 during Jan. are as follows: 3ALZ, 3ZD, 3ZCG/P, 3ZDW, 3BQ, 3ZEJ, 3ZCZ, 3ZCN, 3ZQ, 3FO, 3ZBS, 3ZAI, 3ZEL, 3ZBP, 3ZER, 3ZEO, 3NB, 3ZFA, 3ZAT, 3AGV. 7LZ worked 3ZBS/P running 1 watt input to a 6J8.—7FF.

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CORRESPONDENCE

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AUSTRALIAN DXCC AWARD

Editor "A.R." Dear Sir,
I feel that the notice in Feb. "A.R." "Any Ideas Worth £5" raises some misgivings amongst the active VK DXers who have been hoping to see something done about the Australian DXCC Award.

Whilst I was writing the DX notes, from time to time I made comment on the A.R.R.L. thinking in regard to what constitutes a "country" for their DXCC Award and the disparity that exists between their list and the W.I.A. My comments were made with a particular purpose in mind, but now, not having the responsibility of the compilation of the DX page, let me say that in general I have been behind the W.I.A. in not following the A.R.R.L. for their DXCC listing which has become known to many DXers as the "rat race", despite my recent crack regarding the Certificate not being worth the paper on which it is written. Again this particular purpose was in mind. I have an A.R.R.L. list printed July which shows a total of 260 countries, but a very good friend in W land is already claiming 292, whereas the W.I.A. list published in Jan. "A.R." is 275. You see what I mean by disparity.

A farcical situation arose for the 1958 VK-ZL Contest which was run by the N.Z.A.R.T., and they stated the A.R.R.L. countries list would be used for scoring purposes, so we have the W.I.A. a party to a contest, which for scoring purposes, they do not recognise. What happens when the W.I.A. runs the contest; is the A.R.R.L. or the W.I.A. the recognised scoring list?

My reason for writing this letter is that I feel there is no room in the Amateur world for two awards, with similar characteristics and name, being granted by different Amateur organisations, especially when they are as old as the W.I.A. and A.R.R.L. The A.R.R.L. started off the DXCC, so let them retain it as their award, having only one DXCC award irrespective of the sponsoring organisation.

As the W.I.A. now finds it necessary or advisable to redesign the DXCC certificate itself, why not withdraw the Australian DXCC Award and start another award which will not be influenced by DXpeditions to uninhabited rocks, changes in politics or for any other reason that can effect the future requirements or conditions of the award. This may not be easy, but it will certainly remove the feeling of frustration of active Australian DXers in trying to assess their countries worked, submitting a QSL to the Australian Awards Committee, only to find it is not eligible for their DXCC.

Should something logical and/or sensible come out of the Federal Executive submission to the I.A.R.U. for a standard assessment of what constitutes a "country" for DX scoring purposes, I cannot see where there can be room for two DXCC Awards. Has this thought been considered by F.E.?

My suggestion and recommendation is that F.E. themselves should put this subject on the agenda for the forthcoming Federal Convention. If you wish to get some additional angle on the subject, have a look at Alan Brown's (VK3CX) epistle in March 1958 issue of "A.R."
—F. T. Hine, VK2QL.

[F.E. advise that the matter of DXCC countries list and the W.I.A. Certificate have been discussed by many Amateurs and the aforesaid matters will be listed for discussion at the forthcoming Convention.—Ed.]

FROM AN OLD-TIME MEMBER

1495 North Gibbs St.,
Pomona, California.

Editor "A.R." Dear Sir,
This is to wish you and the members of your fine organisation Season's Greetings from one who many years ago was a member. If you still have records prior to World War I, you may find me listed. At that time we met on Bourke St., Melbourne. I believe the place was called Oxford Chambers. It was on the left side as you went up Bourke Street towards Queen Street from Elizabeth Street, and I remember we used to buy our antenna wire from Warburton Frankl across the street.

I wonder how many of the members of that day and age are still around. Of course I was only a kid then. I enlisted at 17 while attending what was then the Melbourne Technical School (Junior).

I still hear from Jim Cuncliff of Preston, although not for some time. Another I remember was Les Dredge of Preston and a Mr. Topping from Thornbury. As these chaps were older than I, quite possibly they have passed on. My first call was XOI. My call for receiving after W.W.I. was V-162.

I am still active in Radio, being Radio Officer on the U.S.S. "Gear ARS-34", a Navy vessel manned by civilians and operating in the salvage and rescue service. Do not get to work the Ham bands except on 75 metres, so not many contacts lately with the VKs.

Oh yes, I got my wireless training at the Amalgamated Wireless School in Melbourne, getting my commercial license in 1921. My Aussie address used to be "Glentworth," Yann Street, Preston, Victoria.

Cliff S. Pugh, W6JXF/MM.

"WHAT'S WRONG WITH 40"

I have read the letter written on the above subject by Ted Cawthron, VK5JE (Feb. "A.R.") and support his plea most wholeheartedly. It is most timely indeed, coming as it does at a time when VK is trying to retain 7 Mc. "in a last ditch stand" so as to speak.

We must be frank, and admit that except during the R.D. Contest, the number of VK Amateurs to be heard on 7 Mc. (c.w. and phone) at any one time can be counted most times on one's pair of hands. (Remember that we have thousands of licensed Amateurs in this country.) Shameful isn't it!

For all of my 30 odd years' activity as an s.w.l., the lower of our frequency bands have been my favorites, with a very particular leaning towards 7 Mc., since we were granted its use. I have been in the position to carefully

—and regretfully—note the gradual drift away from "40", until this very day (4/2/59) when during a listen on the band between 1915z and 2115z, I heard some 30 Europeans, one mobile marine W8 near Bermuda and one solitary VK (VK2ARG).

If further evidence is required to confirm what VK5JE is "trying to drive home" about 40 metres, take a look at the calls listed under "Activities" in the DX notes of each issue of "A.R."—it pains me every time I peer at it, because usually there are less than five reports listed (only one in Feb. issue!), whereas 14 Mc. may contain up to 25/30 reports. Even 21 Mc. usually boasts more VK activity than 7 Mc.!

I ask you to again peruse the letter by VK-5JE in Feb. "A.R." and then, if you really want 7 Mc. retained by VK as an Amateur band, "give it a go" yourself while there is still time. By so doing, you will help provide our Rep. (John Moyle) at the forthcoming I.T.U. Conference with "bullets" which he can "fire" at those who seek to destroy what we already have—to wit, the use of "40" as a Ham band.

—Eric W. Trebilcock (BERS195, WIA-L3042).

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Queensland—Arthur Walz, VK4AW.
South Australia—Rex Richards, VK5DO.
Western Australia—Ron Hugo, VK6KW.
Tasmania—Doug Fisher, VK7AB.
Papua-New Guinea—Russ Coleston, VK9XK.
Fed. Contest Committee: Reg. Harris, VK5RR, Secretary, Box 1234K, G.P.O., Adelaide, S.A.
QSL Bureau: R. E. Jones, VK3RJ, 23 Landale Street, Box Hill, E.11, Vic.
Awards Manager: A. G. Weynton, VK3XU, 5 York Street, Bonbeach, Vic.

NEW SOUTH WALES

President: Perc. Healy, VK2APQ.
Secretary: Norm Beard, VK2ALJ, Box 1734, G.P.O., Sydney.
Meeting Night: Fourth Friday of each month at Science House, Gloucester Street, Sydney.
QSL Bureau: Box 1734, G.P.O., Sydney. Frank Hinc, VK2QL, Manager; assisted by Allan Smith, VK2AIR.
Zone Correspondents: North Coast and Tablelands: Noel Hanson, VK2AHH, Ryan Ave, West Kempsey; Hunter Branch: R. W. Rose, VK2AQR, 17 Brooks St., West Wallsend; Coalfields and Lakes: H. Hawkins, VK-2YL, 9 Comfort Av., Cessnock; Western: W. Sutt, VK2WH, "Cambijowa," Forbes; South Coast & Southern: E. Fisher, VK2DY, 2 Oxlade St., Warrarong; 8th. Western: J. W. S. Edge, VK2AJO, Wallace St., Coolamon; Tamworth: S. Smith, VK2APS, 50 Upper St., Tamworth.

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FEDERAL

CHANGES OF ADDRESS OF LICENSEES

During the collection of donations to the I.T.U. Fund it has been noted that many licensees have apparently overlooked the Regulations requiring notification of change of address to the Postmaster-General's Department. Obviously some of these might have been received too late to tally with the last issue of the Australian Radio Amateur Call Book, but in many instances this is not so. Just to refresh your mind on this, the following are the relevant Regulations. Attention to this will also ensure that the Call Book is right up-to-date at the time of printing each publication.

CONTEST CALENDAR

Compiled by W.I.A. Fed. Contest Com.

★

ROSS HULL MEMORIAL:

Return of Logs: Postmarked not later than Sunday, 1st March, 1959.
Logs from all who took part in Contest would be appreciated. Propagation data derived from Logs is important.

NATIONAL FIELD DAY:

Comments on a change of date and on holding extra field days during the year would be appreciated.

A.R.R.L. DX COMP.: 1959:

Dates: Phone—March 6-8.
C.W.—March 20-22.
All Bands.

RUSSIAN PHONE CONTEST:

Dates: March 14 and 15.
Rules: See page 13 this issue.

REMEMB. DAY CONTEST, 1959:

Dates: Saturday, 15th August, to Sunday, 16th August, 1959.
Duration: 1800 hrs. E.A.S.T. to 1759 hrs.
Rules: As for 1958.

OZ C.C.C.:

Date: May 3-4.
All Bands.

VK-ZL DX CONTEST, 1959:

Dates: Phone—1000 GMT Saturday, 3rd Oct.—1008 GMT, 4th Oct.
C.W.—10th Oct.—11th Oct., 1959.

NOTES

Administrative Secretary: Mrs. May 478 Victoria Parade, East Melbourne, C.2. Postal address: P.O. Box 36, East Melbourne, C.2.
Meeting Night: First Wednesday of each month at the Radio School, Royal Melbourne Technical College.

Divisional Sub-Editor: V. M. Jones, VK3YE, 7 New St., Surrey Hills, E.10.

QSL Bureau: Inwards and Outwards—W.I.A., Vic. Div., P.O. Box 36, East Melbourne, C.2.
Zone Correspondents: Western: W. J. Kinsella, VK3AKW, Magdala, Lubcock; South Western: W. Wines, 48 Cranley St., Warrnambool, and W. Zimmer, VK3AWZ, 70 Skene St., Newtown; Far North Western: M. Folle, VK3GZ, 101 Lemon Ave., Mildura; Midlands: R. Jonsson, VK3ND, Farnsworth St., Castlemaine; North Eastern: L. Eliason, VK3ALE, 72 Orr St., Shepparton; Eastern: J. Spark, VK3AJK, 20 Marshall Ave., Moe.

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President: John Pickles, VK4FP.
Secretary: W. J. Rafter, VK4PR, Box 638J, G.P.O., Brisbane.

Meeting Night: Fourth Friday in each month at the State Service Union Rooms, Elizabeth Street, Brisbane.

Divisional Sub-Editor: A. Simpson, VK4ZAE, Cr. Baden Powell and White Sts., Everton Park.

QSL Bureau: Jack Files, VK4JF, Vanda St., Buranda.

Zone Correspondents: Marybrough: R. J. Glassop, VK4BG, 80 North St., Maryborough; Townsville: R. K. Wilson, VK4RW, Hogan St., Stuart, Townsville.

SOUTH AUSTRALIA

President: B. W. Austin, VK5CA.
Secretary: J. C. Haseldine, VK5JC, Box 1234K, G.P.O., Adelaide. Telephone: M. 7851.
Meeting Night: Second Tuesday of each month at 17 Waymouth St. Adelaide.
Divisional Sub-Editor: E. C. Daw, VK5EF, P.O. Box 44, Gawler, S.A.
QSL Bureau: G. Luxton, VK5RX, 27 Belair Rd., West Mitcham, S.A. (Inwards & Outwards).

WESTERN AUSTRALIA

President: L. Roeger, VK6HR.
Secretary: J. R. Elms, VK6BE, Box N1002, G.P.O., Perth, W.A.
Meeting Night: Third Tuesday of month at Perth Tech. College Annexe, Mounts Bay Rd.
Divisional Sub-Editor: J. R. Elms, VK6BE, 29 Central Road, Kalamunda.
QSL Bureau: Jim Rumble, VK6RU, Box F319, G.P.O., Perth, W.A. (Inwards and Outwards).

TASMANIA

President: P. E. L. Dunne, VK7PD.
Secretary: K. E. Millin, VK7KA, Box 371B, G.P.O., Hobart.
Meeting Night: First Wednesday of each month at W.I.A. Clubroom, 147 Liverpool St., Hobart.
Divisional Sub-Editor: W. W. Watson, VK7YY, 58 Brooker Ave., Moonah.
QSL Bureau: J. Batchler, VK7JB, 39 Willowdene Ave., Lower Sandy Bay, Hobart.
Zone Correspondent: North Western Zone—Terry Tong. Northern Zone—Ray Waldon.

PAPUA-NEW GUINEA

President: F. N. Nolan, VK9FN.
Secretary: G. A. Greville, W1A-L9004.
Divisional Sub-Editor: R. Clark, W1A-L9001, P.O. Box 204, Port Moresby.
QSL Bureau: D. S. Brown, VK9SB.

29. An Amateur station licensee who intends to remove his station to a new address within a State must notify the Superintendent, Radio Branch, or the nearest District Radio Inspector in the State concerned, in writing, of the proposed change prior to the date of removal, so that the necessary authorisation may be issued.

30. Where a change of address is temporary, as in the case of a licensee visiting another district, or in any way changing his place of residence within the State for a short period, with the intention of returning to his original address, the necessary authorisation for change of address may be obtained on application to the Superintendent, Radio Branch, or District Inspector concerned.

31. In the case of an Amateur licensee being forced by circumstances beyond his control to vacate, at short notice, premises in which his station is housed, notification by telephone will be accepted, and verbal permission may be granted for the change of address, providing the request is followed, as early as practicable, by a written notification.

32. Any Amateur Station licensee who desires to remove his station to a new address beyond the borders of the State in which he is resident, whether permanently or temporarily, must make written application, for the necessary approval to the Superintendent, Radio Branch, in the State in which his station is licensed for operation.

33. Authority for installation and operation of an Amateur Station at a new location, which is not the residence of the licensee, will not be granted unless the Department is satisfied that the station will not be accessible to unauthorised persons.

34. Any Amateur Station licensee changing his address must not operate his transmitting equipment at the new address before receiving the necessary approval. Transmissions conducted at an unauthorised address are illegal and may result in the suspension or cancellation of the licence.

NEW SOUTH WALES

The January general and special general meetings were held at Science House, Gloucester St., Sydney, as usual on the 27th and owing to the much publicised Japanese fireworks display, many members were unable to get within parking distance. Due to late arrivals, the meeting scheduled to commence at 7.45 p.m. did not get under way until around 8.40 p.m. However, eventually 55 arrived in dribs and drabs and both meetings were held successfully.

The special general meeting was held after the general monthly meeting, therefore allow-

ing more time for discussions which were bound to arise, concentrated around the figures submitted in this month's Bulletin. The discussions which took place centered around the general financial state of the Institute in N.S.W. and the figures submitted by Council FOR DISCUSSION ONLY were severely criticised by some present. The general feeling among members seems to indicate that an increase in annual subscriptions would not be frowned on, and looking at a report from our Honorary Auditor, this seems most necessary to maintain the high standard of Institute activities that members enjoy today.

A minority were sceptical as to the accuracy of some of the figures quoted in this month's Bulletin, and a motion was moved by Phil 2ER "That Council form a committee to thoroughly investigate and report in detail how these figures quoted were made up." Council hope to have this report to submit to the members at the February meeting. From this detailed statement members will be able to plainly see how much money per annum is required to finance the W.I.A. N.S.W. Division and whether a rise in annual subs. will be necessary for the satisfactory functioning of the Division.

The facilities made available to members should be born in mind, including the very efficient services of our hard-working Secretary and the work done by the QSL officer, Frank 2QL, whose able hands are sorting and dispatching record numbers of QSL cards in and out each month. The efficiency of VK2WI, the Divisional Headquarters Station at Dural, in its Sunday Broadcasts to members and the W.I.C.E.N. activity are beyond reproach.

The Council wish to point out to members once again that there is no recommendation whatsoever for an increase in annual subscriptions, the figures quoted in your Bulletin were merely a basis for discussion.

Recently it was found necessary by one of the major Divisions of the Institute, owing to increased costs, etc., to substantially increase the annual subscriptions to members.

NINTH ANNUAL CONVENTION OF THE

NEW SOUTH WALES DIVISION

Approximately 300 Hams, XYLs, YLs, associates, harmonics and visitors enjoyed themselves on the grounds of 2WI, Dural, on the Saturday of Australia Day week-end. A marquee was erected which comfortably housed the customers. Last year it was two tents, next year probably two marquees will be needed. Knowing that 2AQR was on his way, the official opening was delayed several minutes, however after the Master of Ceremonies, Max 2MP, introduced your Divisional President,

Pierce 2APQ, the aforesaid Pierce welcomed all and sundry and then asked the highly paid engineer of 2WI, Dave 2EO, to expound the whys and wherefores of the improvements at 2WI. However, this was rather superfluous as the set-up is on view for all to see and too much cannot be said in giving credit where it is due, to the painstaking hard work, both mental and physical, that Dave has put into the station. The last time the writer was there the tx was an ATR2B in one corner—the corner is still there, but if the ATR was about, it was lost amidst the rest of the gear.

John 2JU, your Official Observer and A.I.U., was next on the list. You all know John, his knowledge and capabilities, so even those who are either too stingy, too short-sighted or too stubborn to give a few bob to the I.T.U. Fund, realise that there could be none better fitted for the job.

Running behind in time, the lecturers of the lectures were warned to be briefer than brief—a shame as all were interesting and far too short. Joe 2JR orbited with his spunkis, both verbally and diagrammatically. Jack 2ADN told of his experiences of Amateur Radio in W-land when he was there as a delegate to a Lions convention; pertinent points were VK laxity in sending QSL cards to them; luxury setting of the shack and gear; QRM as we never experience here. Jack gave a personal recommendation to Council to inquire into the possibility of Amateurs having their call signs as number plates on their cars. Hope this suggestion is persevered with, as have always thought it an excellent idea. Even tried to obtain AQR22, but was advised that there was no Q in their alphabet.

Max 2ARZ was on borrowed time telling us how to work with sheet metal, so hope to hear more of it at a later date. Graham 2AGH gave details of electronic relay switches. Understand that Bill 2ZL was to give a demonstration on how to conduct a QSO in a foreign language, but time was up. The ballot recorded a win to Joe, but it was hard to determine if he won because he talked the longest, or if he used his Aldermanic voice to persuade the female section. In any case the best man won, so congrats, Joseph.

A small display of Amateur built equipment was on display and the following gave a brief description of their wares: Dave Evans from Gundagai with his g.d.o.: Phil 2ZBB, a 144 meg. tx; Lindsay 2ON, a transistorised power supply; Keith 2AV, test equipment; Laurie Cartwright, power supply; Bob 2QR, a 6w. fluorescent battery operated trouble light, and finally Max 2MP, with the Thing. A cuppa and scones were then very acceptable, after which a disposal dispersal took place, at the end of which Alex 2ABU was quite hoarse and Harry's (2AJZ) money-bag was over-flowing, so the I.T.U.'s percentage should help the lagging fund.

By this time the buffet tea was more than welcome and thoroughly enjoyed by all who participated. However, 2AQR's digestion was somewhat impaired when he was called to the dais. Thinking he was to receive a special prize for the best 7 meg. signal or for the handsomest Ham, he soon had his ego deflated when he was requested to thank the caterers. So pulling together his fragile frame, he thanked the Methodist ladies for the manner in which they prepared and presented the sumptuous repast. They certainly did us proud, so thanks again ladies.

After the dirty dishes were thrown out, John Moyle and his stereophonic recordings were heard under rather adverse conditions, and I don't mean Fred 2AEE's overmodulating in the background. However, enough was heard to realise its potentialities.

The lucky man of the night was Major 2JU, who was successful in the Dutch auction, just pipping George 2AZE at the post. Perhaps the auctioneer couldn't understand the foreign language. Two excellent films of wide contrast were exhibited, after which there were more refreshments. Disposals were on again and it was quite a spectacle to see young and old on their hands and knees rummaging amongst the bits and pieces which had been tipped gently onto the ground; a sismograph gave a reading in London.

Drawing to a finale, the presentation of prizes was the next event. Curley 2XT was press-ganged into performing the pleasant task. Joe received a bottle of plonk, or hair-restorer or something for his spunkit spokesmanship; member-built equipment: City—2ZBB, Country—2ZJC, Associate—Dave of Gundagai. Lucky lapel number: Lady—Freda Laycock, and Gent—2ALV of Manly. Visitor from furthest distance, John Mackie of Hillston and Audrey Grivas from Griffith. Max 2OT said something I missed and 2JU thanked Council for the excellent manner in which they conducted the function, to which we all say, here, here.

Bob 2ARG and Rod 2ACU were in their element acting as dispensers to that which the

doctor orders, while Peter's (2APP) bands were never so clean due to the job he had; looks so well in pinafore. Jim 2AJQ collected a card to give him his DXCC confirmed, and to show how pleased he thanked the "Donors of the Trophies", in fact he was still talking when I tuned in 2WI next morning. Heard 2XT, 2FP and Gordon Sutherland praising the navigational abilities of 2ZL and suggested to their enemies that Bill be asked to guide their expeditions outside the metropolitan area. There were some lucky people who were able to give M'Goon the mascot of the Goom-Show a squeeze and hear his protestations. Pleased to hear that £25 was collected for the I.T.U. Fund, keep it up boys.

Well that concludes a report of a very successful and well organised function which held interest all the time and no doubt will be bigger and brighter next year. Until then, think what you can do to make it better. —2AQR.

HUNTER BRANCH

Well chaps, the annual meeting of your Branch takes place on Friday, March 13, at the N.S.W. University of Technology, Tighes Hill, so come along and show the Divisional strength and enthusiasm. There will be films on transistors so that and the verbosity of our President would make a full evening.

Basli, a s.w.l. from N.Z., was around the district and visited several of the fellows and whilst on the subject of the shakey Isles, our old friend (cripes, nearly typed fiend) Wai 2AXH, ex-ZLIAU/3, arrived home safe and sound, so now he and Lionel 2CS can converse on 80 without each telling the other to shift frequency, which was from the frying pan into the fire. Sorry to hear that Harry 2AFA has not been too well—hope you will be better ere this reaches print. Bill 2XT advises that the DU boys are anxious to contact VKs and also that if anyone is going up that-away, they would be pleased to welcome them, so if you contact their President DUAL you will be made more than welcome.

All of us who went to the Annual Convention at Dural were very enthusiastic at the results and no doubt more will be there next year. The I.T.U. Fund is slowly reaching its goal, but time is getting short, so as one of your OATS I urge you to dig deep and do your bit towards helping yourself and your fellow Amateurs preserve what is left of our bands. Your Rep. John will be up here for the April meeting with his stereophonic apparatus, so I hope that all who attend can look him in the eye and say to himself, "Well, I've done my bit to make your trip easier with the knowledge that we are all behind him."

Nice to hear 2AWX back on the air after a long festive season absence and hope the 2WI echo continues to carry on through 1959 as excellently as it has done in the past, thanks to 2CS.

Somehow I don't think that Bill 2XT will ask Bill 2ZL to show him the shortest way home in future. Bill avows that ZL thought he was on a car trial and used the back of the beam. Don't know why XT was worried as I gave him back the spare parts I picked up on my way behind him, anyway I had to bring him home. Had no trouble, but that may have been because I gagged him before leaving.

After compiling the 2WI Convention notes, am too tired to persevere with this, so I will leave you with two dates to remember: March 13, Annual Branch Meeting, and March 25, the Social at 2XT's grogery.

VICTORIA

Last month I indicated that the Publications Committee was contemplating entering a station in the National Field Day and this is now an accomplished fact. Quite a unique occasion in the life of the present Committee I should think.

As those of you who worked the station will know, the call sign used was 3WI/Portable and the location chosen—Wantirna.

I don't know whether this is a land mark for this Committee, but all who participated in the event voted it a complete success despite the inclement weather. In fact if any other groups are contemplating similar activities, don't hesitate any longer. It's a great idea, the whole thing was very much on the lines of those overseas events you read about.

Naturally enough there was plenty of preparatory work involved, nutting out the type of gear to be used and whose shack could be rattled for equipment, but that was half the fun. Then there was the working bee the previous day to get set up. One of the big hurdles to be overcome was a suitable power supply to fire up all the rigs to be used. The Army got us out of this trouble by loaning

us a couple of lighting sets. George Bills-Thompson (3AHN) and his good lady provided a caravan and the necessary eats to fuel the participants. In fact George and his whole family camped on the site for a couple of days and did yeoman service in the preparatory work of erecting aeriels, etc., during the 24 hours prior to the Contest.

Ron 3QM arranged the loan of the site, complete with pine trees. In fact every member of the Committee contributed something, either large or small, towards the effort.

The rain caused a bit of havoc with the higher frequency gear early in the piece, but 80, 40 and 20 metres continued at full blast, thanks to Bill's (3TX) very much over-worked Panda Cub and Ron's (3RN) Type 3 Mk. II. It's a little early to say how we fared on points, but suffice to say that it was a super day and only whetted our appetites for the next.

There was quite a good muster at the Feb. meeting to hear Alan Swindon (VK3AKQ, ex-VS9AS, ex-G3ANK) give a most interesting address on his doings at Aden as a piece of rare DX. As a lecturer, Alan has a very breezy style and held the boys entranced with accounts of his activities. There was many a sigh of envy as he carried us along on his magic carpet.

Alan does not do things by halves, because in addition to giving a very good account of what it is like to be on the other end of that QSO with a very juicy bit of DX, he also brought along the gear he used for us to see. I think that a number knew what was coming when he produced that very familiar suitcase shape and sure enough it was an old trusty Type 3, or B2 as it is known in England. The aerial used was by necessity of the bent pin variety which the B2 takes in its stride, but those 25 watts, an HRO rx, and the VS9 call made up for any deficiencies as by all accounts there were plenty of takers when VS9AS was on the air.

The Adenese are rather suspicious characters according to Alan, as various pieces of equipment, QSLs, etc., sent to him failed to arrive. This was one of the mysteries of the trip.

Being a rare piece of DX, you are the recipient of all the lurks that some of these DX hounds try for getting a QSO. One character even sent a cable to ask Alan to listen for him. Besides this and several other typical Ham experiences in foreign lands, Alan presented some excellent coloured slides of Aden and from these we could only agree with his statement that Aden is not "death to the whiteman" as some people apparently believe. Despite the air conditioned buildings and plentiful supply of iced beer and excellent swimming facilities, complete with sharks, you can still give me good old Melbourne. Couldn't afford to go anywhere else anyway, hi!

Many thanks Alan for a most entertaining and informative address. We sure hope to hear from you again when next you pass this way, notes or no notes. In the meantime, bon voyage and 73 from VK3 and many thanks for the donations of manuals to the Division's library.

Our President gave the promised report on the new building and had recorded in the minutes the building committee at the time of the purchase. This committee now becomes the trustee committee and a house committee will be formed later. The report covered details leading up to the purchase, the search over the years and such like. Details of the debenture scheme to cover the purchase are not yet available.

There have already been some meetings held at the new rooms and working bees are still going on in connection with the transfer to the new quarters. The postal address as from the 18th February for the Victorian Division will be P.O. Box 86, East Melbourne, C2, and the 191 Queen Street address will then be no more.

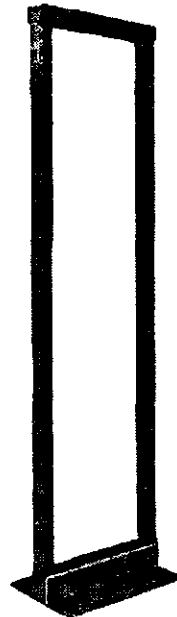
New members admitted at the meeting were: Messrs. J. G. Foster (3AFX, ex-G3FGU), W. M. Timmermans (Assoc.), N. Ferguson (3ZGZ), H. P. Fuller (0TF), J. W. Walters (3ATJ), H. H. Goodman (3AGZ), W. B. Magnusson (3AHT), C. A. McKay (Assoc.). It was very nice to note that we also had quite a number of visitors at this meeting, there should be more of it, so don't forget you chaps, you are always welcome any time you can make it. The first Wednesday in the month at the Radio Theatre, Royal Melbourne Technical College is all you need to remember.

The lecturer for March is to be either Max 3ZS or Doug 3DU and the subject, I.T.U., with some very interesting and most important information on tape.

During the change-over of premises, the Sunday morning broadcasts have been conducted by Keith 3YQ from his home QTH with re-broadcasts by 3YS and others.

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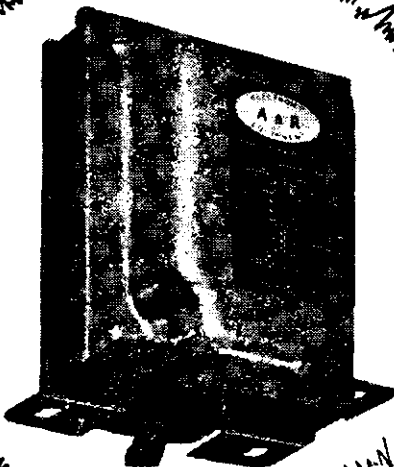
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WESTERN ZONE

Alan 3HL and his XYL will shortly be leaving on a world tour. They will be away about six months, so we wish them a happy and enjoyable trip. Chas. 3IB has also left our shores again, this time however he has not gone to the Antarctic where he has already made two trips. Destination on this occasion is the Gilbert Islands where he has accepted position as Radio Officer for duration of two years. Chas was married to Miss Audrey Harrison before leaving on the "Triadile" on Feb. 8, so should be settling in on his new job by the time these notes go to press. Ham gear was one of Chas' main luggage problems, so no doubt we will be hearing of his doings in the near future.

Things have been very quiet during the last couple of months. Guess that it is because most of our farmer members have been making use of daylight hours for harvesting operations, not spending so much time on the air. Cheerio till next month chaps.

NORTH EASTERN ZONE

Holidays are still with us with the President of the Zone, 3AXW of Cobram, off to the beach with a Type 22 to keep him company. Alex 3AT of Shepparton was at Rosebud, while Sid 3CI went fishing Gippsland way. Sid now batching while XYL and harmonic have a holiday. 3AGG now back from holidays catching the DX off South Africa at unearthly hours of the morning, but this is quite a change from washing dishes on holidays. Bruce has also had a passing visit from 2XR of Forbes, who was going to Melbourne. Talking of visitors, don't be surprised if W2AFF (Dave Marks), known throughout the U.S.A. as Uncle Dave, pays you a visit during March. Dave is making a visit to Victoria and has high hopes of visiting the boys in the country.

Russell Rolls, of Radio Aust., is active with 288 mc. gear. Other Z calls are busy with gear building for the same band.

Quite a few Shepparton Hams had a busy time removing surplus bits and pieces from the QTH of 3ALE, one guy getting a nice steel mast I had my eye on. Understand one fellow took a trailer load while another filled his garage with junk (said XYL) two days after it had been cleaned of similar junk.

Seems as if Jim 3JK is conducting a disposals centre and I hear a bit of swapping for a juicy piece of equipment (both ways) is in the offering. Would you take bottle tops Jim? 3HZ not very active on the air these days, but still very active at bowls when his work allows. XYL of 3KR back in circulation but not the car; Ken now has another one. Harmonic has the mumps, or similar, I am told. Peter 3AFP and Sid 3CI still having nightly skeds on 6 mc. Haven't heard anything about Andy 3FD or what the bush fire net have or haven't done. Henry what about it? Brian 3ASF now operating on 40 mc.

GEELONG AMATEUR RADIO CLUB

Club activity is returning to normal again after the festive season. Discussion nights on two very important aspects of Ham Radio having already been held. Aerials occupied one night, and the design of a 2 mc beam from 3ZAV was eagerly copied down by those present. Amateur rx's followed at the next meeting when various club members brought along their home-brew rx's. These covered 3.5 and 7 mc. bandswitched, in one case, to a small 144 mc. converter using two 6A5s and 12v. max. h.t. to the even-popular 288 mc. super regen.

As a change from these technical meetings, the club held an "open" night, inviting their families and friends to hear a lecture by W.I.A. Federal Secretary, Doug 3DU and Mrs. Bowle. Club President, Bob 3IC, welcomed the guests to the club and presented to Mrs. Bowle a very nice shoulder spray. Both speakers used their "visual reporter", the 35 mm. color slide camera and projector to good advantage in taking us through various countries they had visited overseas. The various stories they told of people they met and the things they saw throughout the tour kept all those present deeply interested until a very late hour. Even during supper Doug, had no rest, when he obligingly set up his transistorised tape recorder and played over some interviews he had had with Amateurs overseas. Many thanks to Doug and Mrs. Bowle for a most enjoyable evening.

Tx hunts are in the air again as members build loops and convert Command rx's in readiness for the coming Convention.

Syllabus items for March are: March 11, a disposal sale—a good night this! March 18, a visit to Mr. Vic. Clark's home—and all members are asked to bring a plate, as has become the custom of recent months. March 25, "Long Line Equipment—a visit to the Geelong Exchange.

QUEENSLAND

MARYBOROUGH

Archie 4CB trying out G4ZU beam. Will soon be seen hanging by his teeth 60 ft. up doing final tuning. 4DJ had top VK4 score in Remembrance Day Contest. Congrats Graham. Has pulled main rig down to re-build into copy of table-top Viking. Meantime has a small portable working on 7 mc. with good results. Quad on 21 mc. has broken, so working DX on 10 mc only. Grahame also is getting going on 6 mx, and has a quad working. 4BG popped up on 7 mc. Ron has been working on some refinements to his tx.

TOWNSVILLE

It was quite pleasing to see such a record attendance at the January annual general meeting held as usual at the residence of 4EX on 29/1/59. In all, 22 members turned up and sorry to report a couple of the old members again failed to turn up, apparently have not received a calendar for this year. Better call on Alan 4PS as he has a few still left. After the usual business of last year was disposed, reports were given of the year's activities by the Secretary 4WH, who pointed out the great increase of cards handled, e.g. inwards 665, outwards 666, an increase of 389 over last year. Also, there was a slight increase in the bank balance. The Librarian, John 4DD, gave a short resume of the books on hand and mentioned the loan of all "QTC" and "CQ" back to 1945 by Rex 4LR. The chairman, Bob 4RW, thanked all members for their patient hearing during the last four years, and as he was not an aspirant for the position again, hoped they would give the new Chairman the close support he had received.

Alan 4PS was appointed to the chair. Eddie 4WH again duly elected as Secretary, which he has nobly carried out for the last four years. John 4DD was re-appointed Librarian and also Technical Officer, so you boys who are having trouble, here is your chance to get it rectified from an Amateur of long standing. Frank 4PF was appointed Publicity Officer; hope he can get some free adverts. This filled up all vacant positions for the time being.

Harry 4HV entertained the boys for the next 90 minutes on his travels in the various ships as "Sparks". What experiences he had to tell of many ports of call! Time having run out at 11 p.m., he will continue next meeting. Bill 4ZBE, on holidays, visited the capital city and met the boys on 50 mc. Vern 4LK was a recent visitor to the shack, also a farewell visit from Rex 4LR to collect his outstanding bits and pieces which I had.

Bert 4LB, the latest call sign in the area, is having the usual troubles of a beginner and now his modulation is good and he is looking for DX. Charlie 4BQ has not yet finished his rig. 4CR, 4MF, 4PF and 4RW all on at sked time, 7 p.m., 14020 kc., with info re moon watch groups and satellite trackings. What an audience they have way up as far as Manus Island where Carl 9YT suffers from a stiff neck looking at the heavens for the last trip of Atlas.

As Bob 4TK has taken on further studies in relation to his other chores, he has relinquished the 7 mc. notes and delegated it to Bazil 4ZW who sends along the following.

Alex 4MA went overland to Newcastle during the school holidays, used mobile on the way, and has a poor opinion of the t.v. he saw. Claude 4UX knocked up a transistor mike pre-amp, which works very well. Bert 4BP came on a few times with increased power, 125 watts. Harry 4OH ironed out the bugs in the microswitch which now behaves properly. Ted 4MH and Arthur 4SM carry out skeds during various times of the day with strong signals each way over 4 miles. Claude 4ZY has been a grass widower of late and as a result, not too active as household duties are a worry. He mentions if you unscrew the slugs in the Geloso, they drop out. Better talk to Esmond in Charters Towers who had same trouble.

Bob 4WR, who has been inactive for a long time, leaves soon on transfer and will be disposing of most of his gear. Bazil 4ZW, under the guidance of Ken 4XD, is building a c.r.o. (hope it works, Bob). Harry 4ZP at Sarina puts in a nice signal every morning on the "Kookaburra's session". Vic. 4BJ from Bundy went walkabout for a fortnight around Northern N.S.W. and the Darling Downs, swears it was only 24 shack doors slammed in his face and arrived home with no spare gear he was looking for. Bazil sec "A.R." Feb. re response to I.T.U. Fund. 73 Bob.

SOUTH AUSTRALIA

One of the most successful technical lectures for a long time was delivered by Bob 5PU at our last monthly meeting. Bob spoke on the Investigation of Meteor Trails by Radio and Effects and Measuring of High Altitude Winds, and did so in a manner that held everyone interested to the last. So keen was the interest and so successfully did he get the information over, that question time became a second lecture. A great compliment to Bob, who is to be congratulated on the way he prepares and delivers his talks—all without notes of any kind.

We all left the meeting convinced we now had a background of what was going on in that field, and why, and with the intention of having a look-see if Meteor Scatter could raise some of those records we seek.

The many articles appearing in "QST" and similar publications on this scatter business will now be read with greater understanding, thanks to the "easy" way Bob explained the complexities of the subject.

In moving the vote of thanks, Secretary John expressed our general thoughts in stating he hoped the lecturer would come along again and iron out some of our other problems with the same ease. Knowing Bob, it is felt certain he will do just that.

After the smoko and QSL distribution, the main business passed off quickly, with the main item being a motion referred to in last month's v.h.f. notes re the formation of a V.h.f. Group within the Division. Unfortunately Neil 5ZAW was not present, but his motion was brought forward by proxy and Council now have the job of reporting back their findings to the next general meeting. Judging by the enthusiasm of the possible members of the proposed group (at least 35) a good formation should be possible. However, we leave Neil to report on that in detail elsewhere.

We have been beset with poor to very poor conditions on 40 lately, in fact during the whole of January 40 really played up for short skip or ground wave, whilst on occasions it was no trouble to work Interstate. Result is that from this QTH we were badly placed for general coverage and found it impossible to relay the Sunday session on 6 other than in a very scratchy way.

Fortunately, during that time 6 was OK and due to the enthusiasm of 5RO, 5ZBA, who put the session on 6, we were able to keep in touch. The worse 40 became, the better 6 was, so there is a good example to be set up to use all hands and not become a "single bander". Yet how often is this the case and you hear it said, "The bands are lousy lately", whereas that is not the case at all, but just a patch in one or two of them, with the rest wide open for good contacts.

Another point, try listening on c.w. and s.s.b. when a.m. seems flat, you will be surprised just what can be heard, which will suggest a shift to those modes of transmission.

During the absence from civilisation of Gordon 5XU, the session was transmitted by John 5JC who did a good job and even struck a W.I.C.E.N. call to duty during the currency of one of the broadcasts. Result of this was that the duty crew according to roster sprang to it when Brian 5CA and John 5KX (both mobile) joined Pat 5KM in the Victor Harbour/Port Elliott area and provided a 7 meg. link back to base which was manned by John 5JG. This worked out well (on 80 and 40) and was the centre of comment and congratulations by the E.F.S. people who were pleased with the extra line of communication and of the work done.

The W.I.C.E.N. Committee is continually in need of further recruits, and appeal to all who have gear that will fit into the pattern, or are willing to acquire same or help in any way, to come forward and join in this worthwhile work.

Whilst Gordon 5XU was on leave, he toured the far West Coast to Ceduna, meeting up with George 5EC and helping out on a few problems there as well as conducting an investigation into the life cycle of the witchy grub with a view to improving the strain and flavour of this popular "succulent". No doubt he will issue a tape to all sub-divisions in due course, so watch for it Burnie 5WC.

Another portable operator during the holidays was Brian 5EM who was heard from Portland, Vic., with a 122. Tom 5TL reported him excellent copy at Renmark, although a bit weak here.

Len 5OC at home (50B at work) heard quite often at good strength on 20 firing into a long wire—about Salisbury to Smithfield, and really mixing it with the DX. Bram 5AB never fails to get a comeback on his s.s.b. these days and is very happy with the entry to that field, in

fact quite a few DX chaps on 20 now start up with "Do you know Bram?"

Once again the field day coincided with appalling conditions for mobile or portable operation, not only was it hot to very hot, but conditions on the bands at their lowest with auroral flutter to add to the troubles. This is the third year in a row that this has happened, and it suggested that unless a change of date is made to a time when general conditions are likely to be better, it looks like the field day interest will further drop back and perhaps go from our calendar from lack of interest.

During one part of the day it was noticed that one station was heard long, and fairly broad too, testing, testing, testing, right in the portion of the 40 metre band where a number of much lower powered portables were hopefully calling CQ. Not good operating practice that, read the Handbook sometime, it may help.

Sorry to learn that Jim Sullivan had to withhold nomination for Council this time as a result of health. It is recalled that Jim is largely responsible for the acceptance of W.I.C.E.N. in this State, he did a lot of spade work in the formation days and followed it through with no end of conferences, etc. Now that it is established, he cannot carry on. Bad luck, Jim, health comes first, we all realise that. We shall miss you, but hope a little quieter off duty hours will help.

There have been a few enquiries regarding the receipts for their membership subs. Don't panic chaps, our Treasurer is a canny bloke and figures one postage will send you the receipt and the membership card; the latter cannot be printed until after the February meeting determines the officers, etc., so you will get an envelope from him after that.

Call Books no longer available from the Division, but can be obtained from the Publication Committee, Melbourne. You will find the address on the Editorial page of this issue.

That's it for this issue chaps, for being a part v.h.f. type myself have been in the swim of the Ross Hull, and if nothing else did a lot of listening on 6, so if we have missed anything on the d.c. bands, please excuse. Another thing is that I've been fighting a few of the duels Pansy left me which has taken up some air time also.

Don't forget though, and will repeat here, even though Neil will most likely put it in the v.h.f. notes. It is important to send in your Ross Hull logs, no matter if you are a possible winner or, like me, way down, make it out and send it in, for much useful information is contained in it for purposes of F.E. in their case to hold the band and for I.G.Y., regards propagation conditions.

WESTERN AUSTRALIA

There was no meeting during January, but a Council meeting was held at the home of 6RH, in preparation for the February general meeting. It was decided to issue a further appeal for I.T.U. Funds. The time is drawing near, fellers; what about it? Some circulars will probably be sent out during the next few weeks. If you receive one, but have already donated, don't be offended; with many donations going direct, it is very difficult to keep our records up to the minute.

The past month or so has seen many holidaying Hams. Some, like 6AC, get away from it all and go QRT. Some have a compulsory "dragged away by the right ear spell," like your scribe (marvellous what excuses can be used to creep back for a day or so!). The majority manage to mix the two and take a 122 or something similar. Heard 6WD/P from Hopetoun. Believe the crays come as big as crocodiles down there Francis! Or do they grow after death and consumption? 6CL spent quite a long time portable at Greenough River. Believe the cray population decreased down there also. 6GU took time off to do some fishing up Greenough way also, before getting stuck into the beam fabricating business. Heard one story which I did not get the full dope on about 6JH and friend trapping the local doctor by stretching an antenna across the gateway. What goes on Jim?

Paid Alan 6MA a visit at his new QTH the other day. Alan has settled in nicely now and is operating an 11. Hopes to get the d.c. mains put on in the near future and is working on ideas for obtaining a.c. from d.c. sources. There appears to be two schools of thought—6EC (inverter type of supply) and 6BO (d.c. motor driving doctored a.c. motor).

6BO is still the busy builder, having now finished bedrooms for growing family, next on the list is badly needed shack. Unfortunately work is going to intervene.

The s.s.b. gang is growing still. 6TH is now on s.s.b. and 6KJ will shortly follow suit. Bernie has already started building his ex-

citer, and from what we know of what he builds, he will make a very good job of it.

The slow morse sessions are under way again, but unfortunately have suffered interruptions through the absence of operator. It is hoped that a regular session may be maintained now that the holidays are over.

Home hunters and builders, 6TR, 6HK and 6DW, have operation well under way now. Don 6HK has been operating mobile from his car. Incidentally, congratulations are due to Don on the birth of his first harmonic; congratulations go to Pat also of course.

That's about the lot this month, so will say cheers and best wishes till April.

TASMANIA

NORTHERN ZONE

All will agree that the 38 or so miles to George Town to enable the January meeting to be held at the home of George 7GC was well worth it as it was a very good meeting. We all had a good view of the efforts of George and also a practical demonstration of how to chase that elusive DX with Col TLZ at the mike. (A very nice one, too.)

The George Town Radio Club is beginning to take shape under the guidance of George 7GC and Bill, and although quite a lot of surplus "junk" was donated, I'm sure that if anyone has any old bits and pieces that are in the way, that the above club is a very worthy cause. Donations will be welcomed.

The meeting closed with quite a few things in the melting pot and after an enjoyable supper, we retraced the above 38 miles, which was also quite pleasant.

As stated last month, I managed to get over to Burnie and got as far as Sid 7SF, who was coaxing a signal from a borrowed t.v. set for the benefit of visitors. Sid is using an 1155 set which seems to perform somewhat better than the one I have, probably due to the correct power supply being used. I haven't forgotten about the circuit details Sid and am still on the tail of a No. 19. The photostat unit has been busy so the 1155 sheets have been held up a bit. Altogether we had an enjoyable evening which convinced me that visiting the other chap and seeing his rig, etc., helps to further the spirit of Amateur Radio.

Len 7BQ spent the other night giving me an on-the-spot demonstration of how to grind a few kc. too many from a xtal. Nevertheless, it was a very interesting evening and although I had read quite a few articles on the subject, there is no doubt that seeing a thing done is worth weeks of reading about it. I was grateful for the opportunity to see it.

Have been doing quite a bit of listening on 144 mc. lately, but the band has not been too bright at all. Heard you on Friday night, Col., the first for over a week.

I noticed in the circular that the time of commencement of our meeting was not known by the Hon. Secretary, Ken 7KA. For any others that do not know and who would like to come along (all visitors welcome), the Northern Zone meets on the second Friday of each month at 8 p.m. There is no fixed meeting place—we meet at members' homes alternately and the place of any monthly meeting can be found by contacting the Secretary, Max 7CA, at 7NT studios.

That should do it for quite a while chaps. Cheers for now.

NORTH WESTERN ZONE

Here we are once more; another month of progress (I hope) or otherwise gone by. The only combined activity to report on this month is our last general meeting held on Feb. 3 at the usual place. Twenty members and visitors turned up and yet another good evening got under way. General business was disposed of, interspersed with discussions on the various aspects of business handled. Things are moving towards the Burnie Fire Brigade becoming Radio Controlled and I trust those concerned will keep the now-moving ball, rolling. Visitors, and I sincerely hope prospective members, were welcomed in Ted Wicks and Frank Young. I believe Frank is qualified and has only to apply for licence and call sign, and Ted sounds very keen on the tx hunts and D.F. Yours truly also has two or three more bods showing more than a passing interest in Ham activities.

It was decided to hold another Tx Hunt on Feb. 22 with yours truly, 7TT, to hide the "harmonic oscillator". Report on this outing next month.

A huge and delightful supper was once again served up by the ladies. It was very much appreciated, but I can in one will have to go without tea in future in order to do justice to the quantity available. Either that or encourage more members (that wouldn't work either, would it?).

A small quantity of the usual "junk" was successfully disposed of for all concerned and Athol 7LR gave away some valves—replacement ones that Noah carried on the Ark. Real beauties. Sam 7SM and Max 7MX are still building tx's and cupboards. Lee 7KC has his new rig on the air; I believe he got that nomadic v.f.o. tamed, at least we hope he did.

Discussion was commenced and deferred on the arrangement of a zone net. More of this later.

Peter 7PF expressed wishes for more of us to join him on 144 megs; he is trying hard to contact a VKZ. Some of us may be with you soon, Peter. Ken 7AI reported that pressure of work is slackening slightly and hopes to get along to next meeting. Roy 7RN is back at work again after his recent mishap; glad to see you more or less OK again Roy. Dennis 7DR tells me he is building his first and last boat (1/4 inch plywood, certainly takes some bending). I think he intends operating marine mobile, or is going to hide the tx out at sea—perhaps some d.f. gear on "fish" frequencies. Syd 7SF is still active in his experiments with the t.v. I believe Harold 7MZ got all the cards coming forward from the QSL Bureau; he sure loves that c.w.

I was pleased to see notes from the Northern Zone in last month's "A.R." Congrats Ray, keep up the good work; I guess we will see you down this way from time to time.

Please don't forget the lecture night at the usual meeting place on March 3.

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Advertisements under this heading will only be accepted from Institute Members who desire to dispose of equipment which is their own personal property. Copy must be received by 8th of the month, and remittance must accompany advertisement. Calculation of cost is based on an average of six words a line. Dealers' advertisements not accepted in this column.

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FOR SALE: Prop. pitch motor, £10. Geloso 4/101 v.f.o., £5. 400-0-400v. 150 mA, 6.3v., 5v. Xformer, £2. 500-0-500 v. 175 mA., 6.3v., 5v. Xformer, £2/15/0. Two 6.3v. 3 amp. fl. Xformers, 10/- ea. 30 hy. 150 mA. choke, £1. 0-50 mA. meter, 10/- 0-100 mA. Weston meter, 30/- W. R. Jardine, P.O. Box 145, Leongatha, Vic.

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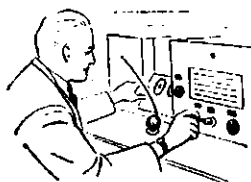
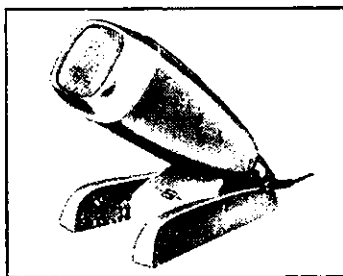
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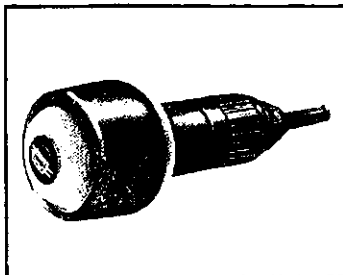
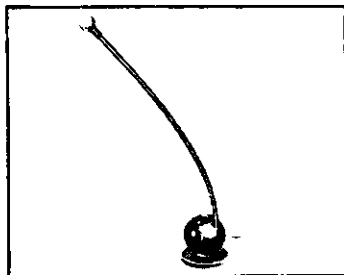
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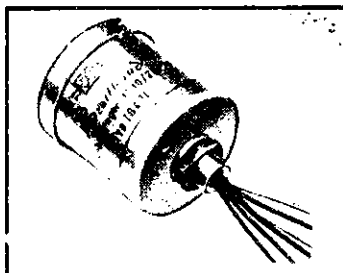
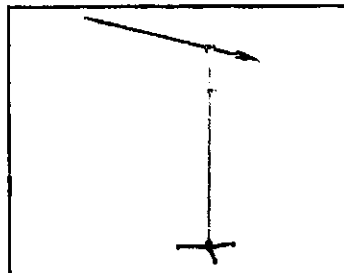


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EDITORIAL



THE LUST FOR DX

"DX IS all right. To desire to work the ends of the earth is a laudable ambition. We know, because we ourselves went through it. To be the first to work a new country is to enjoy a terrific new 'kick'. We know that, too, for we had the honor of being the first to click with a couple of countries. And to have a transmitter so good that one doesn't have to content oneself with modest ranges but can go after the most distant station that can be heard is no more than the normal desire of every normal Amateur.

"But when this craving for DX reaches the proportions of an obsession, when it blinds its possessor to the realisation that there are other forms of Amateur activity, it is just as bad as any other form of intemperance. Amateur Radio is suffering today because the hunger for super-distance contact has become a lust which has almost killed short range, friendly, casual contacts. This business of friendly contacts with one's own radio neighbors is really the most important thing in the game. It was what built up the wonderful spirit of the Amateur body; it was this camaraderie of the air which cemented all Amateur Radio in the splendid solidarity which our 'old-timers' remember with a sigh. Today it is precious near gone. We have

sounded the warning before. If we don't look sharply now, the most potent thing in the Amateur fellowship will be beyond our recall.

"The old-timers 'wonder what's the matter'. We've been wondering, too, and we believe that this is it. Is the gentle art of radio operating a more bloodless and a less human and enjoyable matter than it used to be? If so, let us remember that we make the game ourselves, and that we have it in our power to make it anything we wish. A warm fellowship of kindred spirits or a cold and cheerless world.

"The moral in this for the operating Amateur is simple: be more human; learn to talk; use your station as an instrument for the cultivation of friendships; give heed to the spirit of Amateur Radio, and learn that there is something in the game far more precious than the eternal hollering for QSL cards."

The above extracts from the Editorial of "QST", May 1926, appear to us to be equally applicable in April 1959. However, the expanded fields of experimentation now open to the Amateur means that the exchange of valuable technical information during these friendly local contacts far outweighs the call of DX.

FEDERAL EXECUTIVE.

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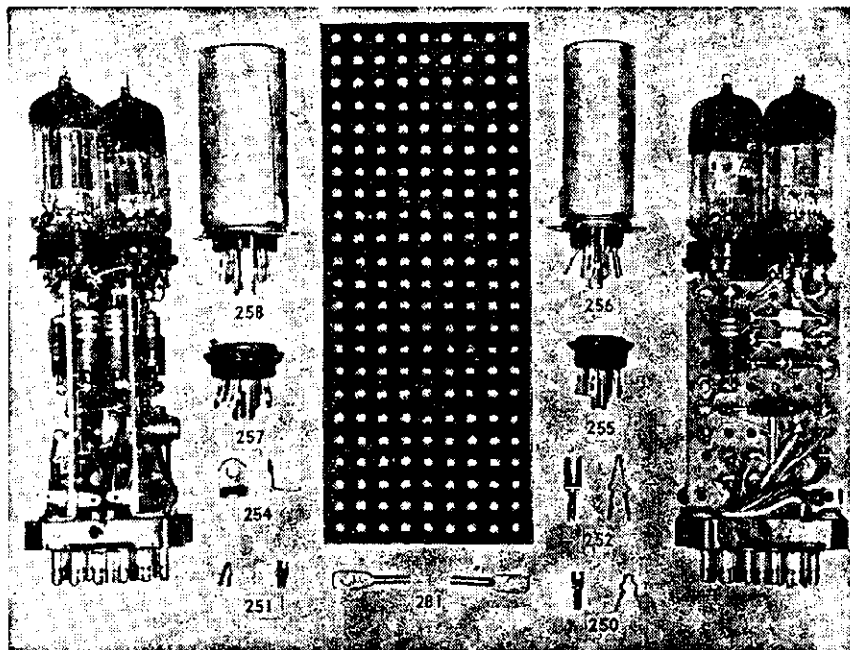
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Solid State Radio Frequency Amplifiers

PART ONE

C. S. RANN,* VK3AAK

OVER the last few years there has been an increasing interest shown in non electron tube amplifiers in the u.h.f. and microwave regions of the spectrum. These amplifiers are usually described as "solid state amplifiers" because the active component is usually some inorganic compound such as germanium metal or ruby. Whilst the modern technical literature on these amplifiers makes rather difficult reading, the basic principles are not new and a clear description of the mode of operation of the amplifier can usually be had by referring to the original research papers. It is the purpose of this article to give a description of two of the lesser known solid state amplifiers and to provide literature references for any experimenters who wish to make a study of the subject.

The three most discussed solid state amplifiers at present are: (1) The transistor, (2) the maser, and (3) the parametric amplifier or mavar. I feel that the transistor applications to radio frequency amplifiers have been described adequately in the popular literature and are easily available, so this article will deal with simple descriptions of the maser and parametric amplifier.

Superficially these two amplifiers are very similar. Each amplifier has low noise, limited by the thermal noise of the electrons in the amplifier input circuit. Both amplifiers obtain their gain by simple regeneration at the frequency of the desired signal, and will oscillate if too much regeneration is applied. In both cases the amplifier obtains the power required for regeneration from a separate oscillator called a "pump oscillator," which oscillates at a frequency different from that of the signal. Finally, both amplifiers are narrow band width devices as perhaps would be expected from a regenerative type of amplifier. Their claim to serious attention is that they are capable of giving high gain at low noise, and indeed they theoretically should be far superior to a thermionic electron tube as these amplifiers do not have flicker noise, induced grid noise, shot noise or partition noise. In the case of the maser, the amplifier works at liquid air temperatures and has such a low noise figure that it approaches the theoretically perfect receiver.

The explanation of the working of each amplifier is, however, quite different, although one may suspect that a more fundamental connection, whilst not yet apparent, possibly does exist. The maser depends on the electrons in a substance giving up their energy in the form of a radio wave. Actually the electrons surrounding the atoms in the maser absorb energy at the pump frequency and re-emit energy at the signal frequency. The parametric amplifier, on the other hand, depends on the non-linearity existing between the terminals of a reactance. If two frequencies are fed into this reactance an infinite series of sum and difference frequencies result; it can be shown that

if certain of these resulting frequencies are made to supply power to a tuned circuit, a negative resistance characteristic will appear at another frequency which can be made the signal frequency, hence giving regeneration. The extent of regeneration can be controlled by the power of the pump oscillator.

THE MASER AMPLIFIER

The name maser for this amplifier comes from "Microwave Amplification by Stimulated Emission of Radiation." A description of the maser is impossible without delving into the physics of the atom, in particular the physics of the electrons which surround the nucleus of the atom. It is assumed that most readers will have an elementary knowledge of atomic processes, however in writing the following description, the aim has been to keep the discussion on this aspect to a minimum, giving only the essentials. If because of this it is found that some details are not clear or that further information is required,

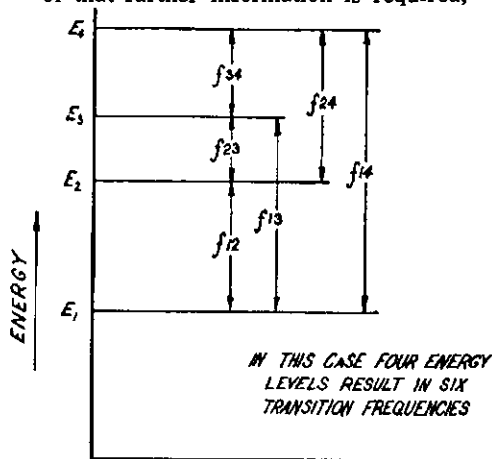


FIG. 1. ILLUSTRATION OF THE FREQUENCIES IN A SERIES OF FOUR ENERGY LEVELS

a bibliography has been included, the references of which will supply further details on the different types of masers.

A useful analogy to the maser is the phenomena of fluorescence. When ultraviolet light falls on some types of chemical crystals they will fluoresce, giving off light visible to the eye. Light is an electromagnetic radiation identical with radio waves except for frequency. In the case of fluorescence the crystal absorbs energy at the high frequency of ultraviolet light, and re-emits this energy at the lower frequency of visible light. The maser does exactly this but at microwave frequencies.

To understand the absorbing and re-emitting processes, we must consider the many electrons associated with the nucleus of the atom. These electrons exist at different energy levels, usually described as different orbits around the nucleus. These energy levels, however, are discrete quantities and if an electron were to absorb energy it would jump to a higher level; it would not

just gradually increase in energy. This principle was originally stated in the "Quantum Theory" and the small increments in energy are called "quanta". This theory provides the relationship between the energy and the frequency of electromagnetic radiation associated with the jump of an electron from one level to another.

$$\text{Frequency } (f) = \frac{E_1 - E_2}{h}$$

where E₁ is initial energy.
E₂ is resulting energy.
h is a constant value called "Plank's Constant" after one of the pioneer scientists of the quantum theory.

This formula is applicable for both absorption and emission of energy. For a radio wave to be absorbed by a substance it must be of such a frequency that the above formula is obeyed, similarly the same equation predicts the frequency of the emitted radio wave when an "excited" atom returns to the normal or equilibrium state. Reference to Fig. 1 will show some energy levels and the frequencies (f) associated with these levels.

If there are many energy levels in an atom it becomes apparent that energy can be absorbed at any of the lower levels and be re-emitted at many different frequencies, as shown in the example used in Fig. 1. Energy differences corresponding to visible light would be about one electron-volt. The energy differences for microwave frequencies would be much smaller, about 10⁻⁴ to 10⁻⁵ electron volt. A v.h.f. signal, say 100 Mc., would correspond to an energy difference of 4 × 10⁻⁷ electron volt.

There are three possible ways an electromagnetic wave can interact with the electron energies of an atom. These are: (1) Absorption, (2) Spontaneous Emission, and (3) Stimulated (or Induced) Emission. "Absorption" is the process whereby the electrons in the atom are given extra energy and put into higher levels. Compounds show absorption bands, thus for absorption to occur the frequency must be within this band. In the case of light we have a coloured solution. When white light of many frequencies falls on one side of the bottle, and passes through to the other side, absorption of some frequencies occurs during transit, and the light emerging at the other side is coloured, hence the colour of the solution is that of the light which has not been absorbed. In the case of the maser the energy of the pump oscillator is absorbed in order to get the atom in an excited or unstable state. "Spontaneous emission" occurs when electrons are falling to lower levels without requiring any further energy to cause the effect. The process of spontaneous emission is practically non-existent at microwave frequencies. "Induced" or "Stimulated Emission" is the triggering of the release of energy at a high level to a lower level. An electromagnetic wave of low power can serve to release this stored-up energy. In the case of

* 2 Georgiana St., Sandringham, Vic.

the maser the received signal is used to do the triggering, the electrons having first been placed in the higher level by the atom absorbing energy from the pump oscillator. This "molecular energy" released by the signal is coherent with the signal, i.e. the phase is related directly to that of the signal.

In the microwave region the actual energy transitions are due to changes in the "spin" of the orbiting electrons. The energy changes when electrons change orbit as previously described are much greater and result in the emission of visible light. If an electron spins about an axis through its centre it creates a magnetic field. If the electron field is at an angle to the applied field a force will be exerted on the electron tending to rotate it into line, just as a compass needle will line up with an applied field. The electron, in changing its spin direction, causes an energy change which will still maintain discrete quantum increments. The electrons in an atom occur in pairs, any two electrons in a pair are identical except that they have spins in opposite directions. Sometimes, however, an atom can have an odd electron that has no matching electron of opposite spin. As the field from each pair of electrons cancel, an atom with no unpaired electrons has zero field. Any unpaired electrons give an atom a residual field and it is said to be "paramagnetic". The maser to be described in this article is a "Three level paramagnetic ion maser". An ion is an atom which has more electrons than it should have to be neutral. Copper metal for instance has neutral copper atoms, but a blue copper sulphate crystal contains copper ions which carry a positive charge due to a lack of electrons.

When many atoms are assembled into a crystal their energy levels, which were previously discrete quantities, become broken up into many sub-levels due to mutual interference of the atoms with each other. See Fig. 2. This can lead to an apparent continuous energy distribution and this state of affairs must be suppressed in the case of maser operation. This is achieved by taking paramagnetic ions and putting them in a crystal of neutral atoms which are not showing any tendency to react with a field. In this way the ions are kept apart and because no mutual interference occurs they can maintain discrete energy levels. An example will be given later of the type of system used.

The next point to consider is the practical difficulty of exciting the maser to emit energy. It is one of the major difficulties at the present time and many methods are used. In the case of the three level maser which will be described here, we have only three energy levels (see Fig. 2). The electrons must be driven up to the higher level at a microwave frequency (f_{12}), the electrons may then fall back to lower levels, emitting radiation at the microwave frequencies f_{23} or f_{13} . Therefore the pump frequency would be f_{13} and the maser could be made to amplify at either f_{23} or f_{13} .

Two important practical considerations should be discussed at this stage. They are known as "relaxation time" and "saturation". Relaxation time is virtually a measure of the time an electron will stay up in the energy level E_3 , before falling back to the lower

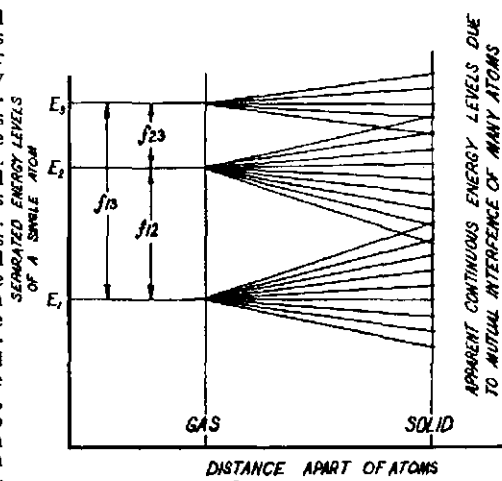


FIG. 2. THE SPREAD OF ENERGY LEVELS WHEN PARAMAGNETIC IONS ARE TOO CLOSE TO EACH OTHER

levels. If the electrons fall back quicker than they can be put up there, the maser will not work. Unfortunately, not many compounds have relaxation times greater than a microsecond, and it is very difficult to find a method of exciting the maser in the period of the relaxation time. This severely limits the number of compounds that can be used in masers and also effects the operating conditions of a maser. In the case of the maser described here the method of excitation requires a long relaxation time of about 10-4 second. Such relaxation times can only be obtained by lowering the temperature of the crystal to that of liquid helium. Great efforts are being made to find a crystal which will work without this requirement, however the low temperature does lead to an extremely good noise figure.

"Saturation" is the decrease in efficiency of the maser which occurs when the excitation energy has become too strong. The saturation power is well under one watt and in some cases can fall to 10^{-10} watt, hence it is obvious that the maser is a low power device, however this need not be a disadvantage for use as a receiver.

The following example may serve to illustrate the practical requirements of a maser. In this case a crystal of hydrated lanthanum ethyl sulphate was used. Some (1/2%) of the non magnetic lanthanum ions were replaced by paramagnetic gadolinium ions. The crystal was placed in a cavity, hence positive feedback was possible, and regeneration could occur. It is of course easy to obtain high gain with a regenerative amplifier, but as always the selectivity becomes high, i.e. a narrow bandwidth. In masers this is very serious because the low power available from the atoms requires considerable positive feedback, hence the maser must operate near the point of oscillation and instability difficulties are always present.

The crystal in this example was placed between an electromagnet applying a d.c. field of 2850 gauss. This can virtually tune the frequency of the maser by altering the height of the energy levels. The maser was then immersed in liquid helium. The cavity was

tuned to two frequencies, $f_{13} = 17.5 \times 10^3$ Mc., and $f_{12} = 9 \times 10^3$ Mc. A microwave oscillator at f_{13} was coupled to the cavity and the signal power was available at frequency f_{13} . When the power of the pump oscillator was increased the coupling loss and the wall loss at the signal frequency of 9×10^3 Mc. gradually diminished until a point was reached when the emitted power at the signal frequency equalled all of the losses in the system. Past this point the maser broke into oscillation. The strength of the oscillations increased as the pump power was raised further. Fifteen microwatts of power at 9×10^3 Mc. was observed for 200 milliwatts of 17.5×10^3 Mc. pump power. At pump powers of 60-95 milliwatts, the emitted radiation was enough to compensate for most of the wall and coupling losses, hence the maser operated as an amplifier.

In Fig. 3 is shown a system for a low noise receiving station. The maser used with a crystal mixer are both low noise solid state devices. The circulator is a microwave trap which controls the direction a signal may pass in coming from the aerial to the mixer, the direction is given by the arrow, and the signal may pass from one quadrant to the next in this direction.

In concluding this description I would like to point out that there are many interesting applications of masers which I have not mentioned. The "atomic clocks," which are the most precise frequency standards known at present, are very simple types of masers using ammonia gas (in one case) and do not require any cooling to liquid air temperatures. There are also many other ways of exciting and operating a maser, however they all work on the same fundamental principles described here. The example given in this article is possibly the most likely type to be used as a receiver because it is tunable, many maser systems only work on given set frequencies.

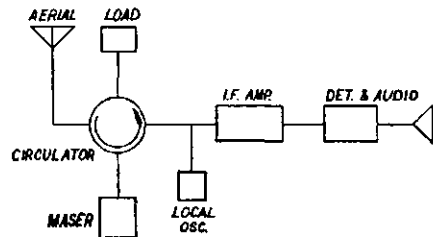


FIG. 3. SUGGESTED MASER RECEIVER

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(Continued on Page 16)

SIMPLE SIDEBAND*

PARTS ONE and TWO

LESTER EARNSHAW, ZL1AAX

THIS article is intended as the first of a series delving into the supposed mysteries of Single Sideband. But so that it may be of interest to those who are not "sideband happy", they will also contain information which is applicable and useful to those who subscribe still to the a.m. technique. But above all, they will not be technical more than is absolutely necessary; there will be no maths and there will be practical articles from which any Ham can build an s.s.b. rig. First though, there are various theories and concepts which are not all what they might be, and if you are going to get a rough idea of what s.s.b. is about, it is good that you start off on the right foot and clean out the storehouse of knowledge of that which is misleading. So let's get out the broom.

The following are all pertaining to s.s.b. and the reason for the telling will appear later. The immediate following will also be of interest to the a.m. man. I begin by discussing carriers.

"Is my carrier narrow?" is a question you often hear asked. Or, "I checked your carrier and it's really nice and narrow" . . . etc. But a carrier has no width. If my carrier appears wide on your receiver it is because your receiver is broad! Now don't cut down my antenna—wait until I finish. A carrier has no width. This is fact. How can a carrier be on 3.8 and 3.7998 at the same time? It can, of course, if it has parasitics. Then it'll probably be on 144 megs. as well. It's like the old story, how wide is a point? The carrier is less than a point. The width of a carrier is a measure of your receiver selectivity. A Collins 75A4 will make it quite a lot less than a ZC1 or a crystal set for example.

Now, having disposed of that one, let's discuss modulation. The books say that modulation is the process whereby the amplitude of the transmitted wave is varied in accordance with the waves impinging on the microphone. Fiddlesticks! Modulation is nothing of the sort. How can one convert amplitude of a voice, and frequency of a voice, both to amplitude modulation? How does one sort out which variation is frequency and which is amplitude at the receiver? What we really do is generate new carriers at the sides of the main carrier! And I'll prove that.

Rig yourself up a tone osc. of say 2000 cycles and modulate a low power exciter with it. Put the receiver on and turn on the crystal filter to its sharpest position. If you tune across the tone modulated signal and if your filter is sharp, you will pick up three carriers. None will be modulated by a tone! If there is tone modulation you are receiving more than one of those carriers. One is beating against the other and producing a third—the tone. You won't be able to make this test with a crystal set. And, incidentally, the tone must be a pure sinewave or else the harmonics will beat with each other and produce a tone. **Modulation is a process which**

● Upon request it has been decided to reprint a series of articles that appeared in "Break-In" last year explaining sideband operation to the Amateur who has not, till now, delved into this most interesting mode of transmission. Later it is hoped to publish some articles on the practical side of sideband operation from VK Amateurs.

produces new carriers at each side of the main carrier.

This is not f.m. F.m. varies the main carrier about its datum line. A.m. produces new carriers, removed in frequency to plus and minus value, from the main carrier. Of course there are some who manage to combine the two, f.m. and a.m., but they're smarter than I am.

S.s.b. means that the main carrier and the bunch of carriers out one side have been removed. In other words, you have suppressed the carrier and one sideband. If you like you can remove one sideband but leave the carrier and the average fellow won't know the difference from a.m. This is because the carrier (assuming our tone modulation again) is beating with the sideband and producing the tone. If both sidebands are there the tone will be louder because each is beating with the carrier and the results are adding together. **But they will only add together if the phase is correct.** You know what happens when you get phase distortion through atmospheric gummung up the process of propagation and reception. The same thing happens when you endeavour to transmit double sideband without carrier. Unless you get that little old carrier back in the correct phase, brother you have trouble. So the answer is, get rid of one sideband.

Now I have inferred that the results will not give as many S units on the receiver as double sideband and this would normally be correct were it not for the fact that removing one sideband leaves a little more room in the final to accommodate more of the one sideband that is left. You give the final half as much work to do so you make it work twice as hard! More or less. I could prove this not quite right, but I said I would not use maths. It's near enough.

Near enough for the purpose of explanation is the following: You have a 100 watt a.m. rig. 66 watts of that input is used up making that little old carrier. 16½ watts goes into one sideband and 16½ goes into the other. If you own a 75A4 with the 3 kc. filter aboard, you get the 16½ watts of whichever sideband you are listening to. If you're using a ZC1 you get the 33 watts. But if you're transmitting 100 watts of single sideband you're getting the 100 watts. Now you know one of the reasons I sold the a.m. outfit.

I did use a few figures just then. We'll try a metaphor: For some reason or other which I won't enter into for fear I get locked up, I wish to convey movement from one side of a lake I have on my property, to the other side.

I climb down the bank on this side and whack-hang out of the water with an oar. Ripples flow across the lake—right over to the other side—and shake about a float which I had previously put there and so wave a flag or ring a bell or otherwise indicate that I should be locked up. That little old lake is 100 feet deep. It's too deep: I might drown, so I shift camp. Now the lake is a foot deep. Has it made any difference? No, it hasn't. It'd still work if I ran across with a basin full underneath each ripple so long as I didn't get stuck in the mud. That water is our carrier, the ripples the sidebands. Actually in s.s.b. we even go one better. We take away all the water and only put it back at the other end when the ripples arrive. There are other reasons for using s.s.b. but they will make themselves more apparent later.

Removing the carrier is simple. If you get a push-pull r.f. amplifier and connect the plates of the two tubes in parallel you will suppress the carrier. This is the same as a push-push circuit save that the coils in the grid circuit are tuned to the same frequency as the plate. The two plate currents flowing in opposite directions cancel each other out. But if you would modulate this suppressed carrier you merely need to modulate in a parallel mode. If you modulate in a push-pull manner, you will cancel out the modulation. You've probably seen the set-up ("A.R." Aug. 1957) which converted a Command transmitter to do the job. It is very simple.

Just to be different, the s.s.b. boys call this a balanced modulator. There are other forms of it which we'll meet later, but they work in the same manner.

You may remove the sideband merely by pushing the signal through a sharp crystal, mechanical or inductive filter. Or alternatively, by judicious phase-shifting of the carrier and sidebands you may cancel out one sideband in a manner somewhat similar to the way you cancel out back radiation from a beam antenna.

Both methods are cheap and simple. Only the lack of familiarity makes them appear frightening.

Now I will deal with receivers and explain why it is s.s.b. signals are "hard" to tune in, how to make them easy to tune; why it is s.s.b. signals do appear to take up half the band on many receivers, and how various adaptors work to make tuning easy.

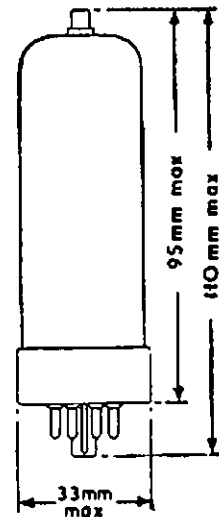
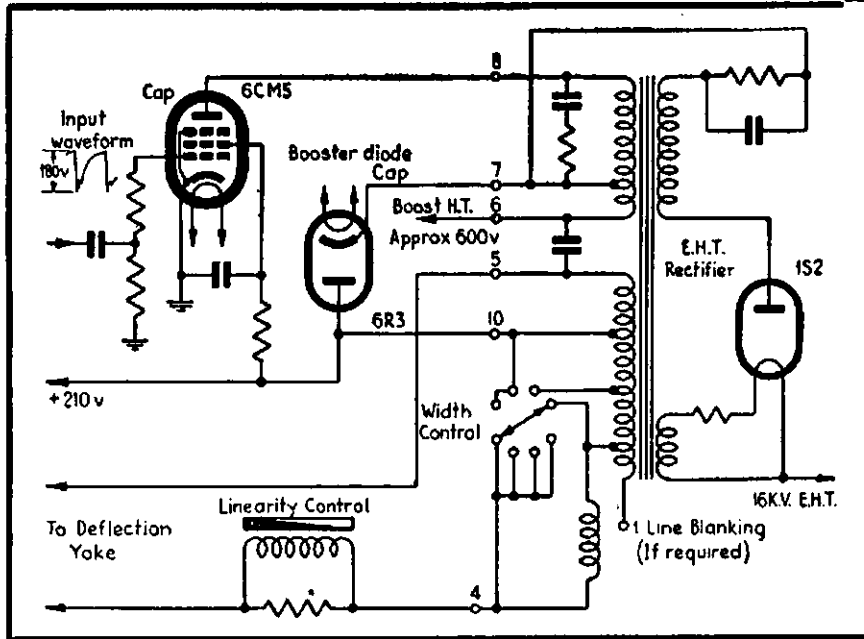
HOW TO COPY S.S.B.

The reception of s.s.b. signals is perhaps the most difficult part of the whole s.s.b. business unless of course you possess one of the commercial receivers designed for this job. Make the reception side of s.s.b. easier and there will

* Reprinted from "Break-In," April, May, 1958.

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Grid Input Voltage (pk to pk)	145V	145V
Anode Current (D.C.)	110mA	85mA
Screen Current (D.C.)	30mA	28mA

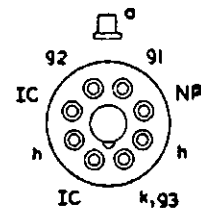
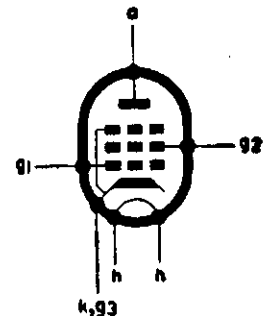
The 6CM5 is a television line output pentode having anode and screen dissipation ratings of 10 watts and 6 watts respectively. Peak anode voltage ratings of 7.0 kV positive and 3.0 kV negative together with a peak anode current rating of 350 mA ensure its suitability for 90° deflection systems with EHT voltages of the order of 18 kV. The reserve margins available ensure long service life. Additional data is available to design engineers on request.



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Octal Base

be few people left on a.m. This is no wishful thinking on my part but actual fact being borne out right now in the United States where receivers are being designed first for s.s.b. a.m. being almost an afterthought. For those who are sceptical, remember that almost all Government services throughout the world are changing over to s.s.b. I can't see Governments spending large amounts of money for the hang of it.

There are various ways and means by which you may improve the reception side of things, but first I must stress the most important facts of all. **Your receiver must be stable.** If your receiver is not stable and you are not prepared to do anything about it, you had better forget the whole business. Your receiver must stay stable. And, equally important, you must have a **slow tuning rate on the receiver.** Remember now, you need to tune in with only cycles error. Once you have mastered this you will find the a.m. standards of stability shocking to an extreme. Begin with the **front end osc.** not the b.f.o. Usually it is the front end osc. that is the culprit re stability because (a) it works on a higher frequency, and (b) it has switched circuits and various non-high stability components in its make-up. And (c) it may be a combination tube in which case it is subject to a.v.c. variations and also heat from its fellow. (d) The mechanical stability is poor.

Dealing with the last (d), the answer there is obvious. If you can't get this better, the original design being poor, you had better scrap the project and begin again. Just as the t.r.f. became obsolete, so now is the conventional superhet. going the same way. Today's standards are high. Assuming you are able to make the osc. section rigid so that it may be lifted when the b.f.o. is on without causing more than a few cycles' change in note, when the note is a low one—say 50 cycles—you are in business. Now stabilise the local osc. and b.f.o. power supply with a VR tube. The lower the voltage the better. Next, replace any condensers around the osc. sections with high grade micas. Make certain resistors are not cooking; they should be of such ample rating that there is no heating whatever. Disconnect the a.v.c. from the mixer tube if it is a combination tube. Keep the heat away from the local osc. and b.f.o. components.

Now to a discussion on that ticklish subject s.s.b. splatter. It is unfortunately an inescapable fact that s.s.b. does cause splatter in many receivers. This though is not necessarily the fault of the transmitter. In fact I have no hesitation in saying that most of the s.s.b. signals on the air in this country are good ones. There are a few poor sigs just as there are in a.m., but usually they are building phases and are soon put right. The s.s.b. boys usually take care to mention to one of their fellows whenever he is splattering.

Splatter in the receiver, that was not transmitted, may be due to the following: Overload of the receiver a.v.c. This is a very common cause. What happens is that the time constant of the receiver is not able to cope with the shotgun bursts that are speech and as a consequence the receiver is just as overloaded as it would be on an a.m. signal with the r.f. gain right up and

the a.v.c. off. If your a.v.c. won't work then you must resort to the manual a.v.c.—namely, the r.f. gain control. On the 75A4 even, one has to turn down the r.f. gain to copy s.s.b. You must cut the legs right off that s.s.b. signal until it fits the receiver. If in doubt, turn the audio gain right up and use the r.f. gain as a loudness control. Incidentally, quite magically, you'll now find that signals are easy to tune.

Splatter at the receiver may also be caused due to lack of b.f.o. injection. If you don't put back enough carrier, you over-modulate the signal in your own receiver (and most likely blame me). The answer here of course is to increase the b.f.o. injection and as above keep down the r.f. gain.

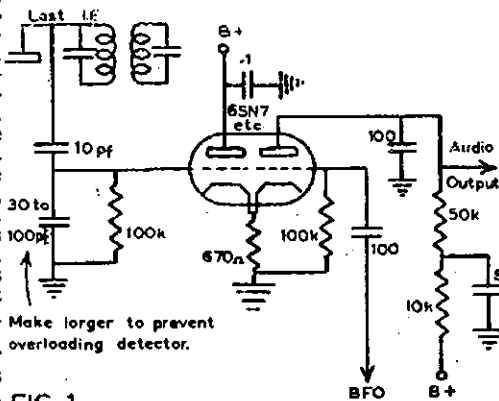
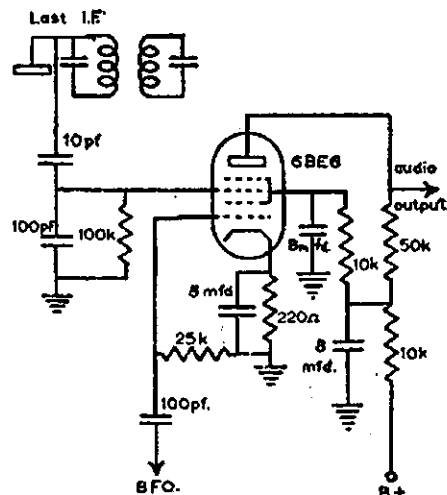


FIG. 1.

This product detector is fitted to many American receivers, and is an excellent performer



A conventional mixer circuit is a product detector as can be seen here.

And now, if you spend a little time on the tuning rate of the receiver, either by mechanically bandspreading it or alternatively by say adding a small trimmer across the local osc., you're going to be able to read s.s.b. just as you would a.m. As a guide, my own receiver has two tuning rates. One, the slow rate, takes 125 turns of the knob to cover the band 3.5 to 4.5 megs. and the other 25 turns. This I would say is an ideal rate. The three-gang condenser with its associated worm from an ARC5 receiver (Command), when bandspread to cover one band,

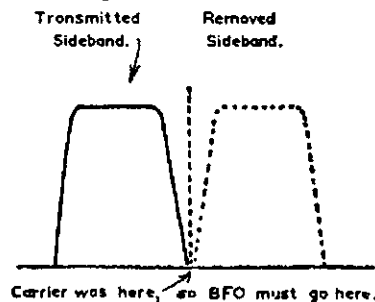
gives a nice tuning rate. If you are not able to get a tuning rate approaching this, then tuning s.s.b. will always be a hectic sort of business. When an s.s.b. signal sounds like an a.m. station and tunes in without fuss or hesitation, only then are you doing the job correctly.

Many people think that a product detector is the end-all to s.s.b. copy, but without the essentials mentioned above, it is useless. A product detector is just a fancy name for a mixer or a converter. There is little difference between a product detector and the mixer in the front end of your receiver. In this case the b.f.o. is the local oscillator and the i.f. frequency is in the audio range. All other constants and component values may be the same. Just bear in mind though that coming at the tail end of the i.f. strip instead of the beginning, there will be so much gain the detector will more than likely be overdriven.

Fig. 1 shows the circuit of a cathode follower type product detector that is used in many American receivers.

There are two main advantages in using a product detector. (a) The injection voltage from the b.f.o. is no longer critical as with the diode detector, and (b) there will be less QRM because the output will only occur when a signal beats with the b.f.o. A measure of whether or not the detector is functioning correctly is to turn off the b.f.o. when the output should be negligible. If there is output possibly the input is too strong and rectification is taking place on the grid. A.m. signals to one side will appear as duck talk which does make it far less annoying and also explains why it is a s.s.b. station often has trouble copying an a.m. station who breaks in on the channel a little off zero beat. Only if he is zero beat will his speech be readable.

There seems to be considerable confusion regarding the correct tuning of the b.f.o. The correct procedure depends to a certain extent upon the selectivity of your receiver. If the receiver is broad, it is probably better to set the b.f.o. to the centre of the pass band. But for a sharp receiver this is certainly not the case. With the b.f.o. off, put the receiver in a very sharp position and tune for maximum loudness of the duck talk. Only then, turn on the b.f.o. and clear the speech. If that position is marked that will be the position to which you should always set the b.f.o. for that particular sideband. For the other sideband there will be a position exactly opposite. As a general rule stations on 80 metres operate on lower sideband, but on 20 metres the reverse is true. There should not be need to fiddle with the b.f.o. control. All tuning should be done with the main tuning dial.



Another method of reception which has considerable merit when the receiver stability and tuning rate is poor is the method known as front-end injection where a frequency meter or other stable osc. is used to supply the carrier. With this the a.v.c. may be left on and the station tuned as for ordinary a.m. once the frequency meter has found the station. This method does give a little trouble with stations of varying strength, but on the other hand does allow you to tune the band without having to retune the s.s.b. signal. It is, though, at the best, a cumbersome method and this will be brought home very fully once you have tuned a decent receiver using the other method.

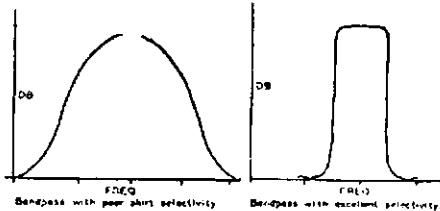
There is one further point which deserves ready mention and which mainly the s.s.b. boys seem to fully realise, and that is one of selectivity. 3 kc. is all that is necessary to copy any good a.m. or s.s.b. station. More than half the a.m. stations I listen to suffer with f.m. and therefore are a problem. By turning on the b.f.o. and listening to the one sideband only you will find weak signals considerably improved in copy so long as there is no f.m. present. And if the receiver is sufficiently sharp you may remove the carrier and reinsert your own as you would for s.s.b. and also flick from one QRM'd sideband to the other where copy may be better. This is known as selectable sideband reception and on modern receivers using what is known as a slicer or narrow passband may be effected merely by turning a knob or pressing a switch.

The low frequency ARC5 (or BC453) is readily converted for selectable sideband reception whether for a.m. or s.s.b. Copying a.m. with the b.f.o. on is known as exalted carrier. A.m. stations will find these methods of great advantage when copying weak signals down in the noise or affected by phase distortion. It is often of great advantage to make an s.s.b. signal of the a.m. signal right in the receiver and then of course reinsert the carrier with the b.f.o. The b.f.o. will be steady and the phase immaterial. Many diehard a.m. stations, though, were they to hear themselves unwittingly delivering duck-talk would no doubt give up Ham Radio altogether.

A word about selectivity. A.m. and s.s.b. stations, in the light of crowded band conditions and the advent of s.s.b., should make every endeavour to get 3 kc. selectivity in their receivers. This is, of course, quite a tall order,

especially when it is considered that to be of use, the receiver must also have good skirt selectivity. That is, you must be either tuned to the station or not tuned to it. There should not be a position where the volume falls off as you tune yet the copy remains near perfect.

Poor skirt selectivity means that the s.s.b. station working alongside the sta-

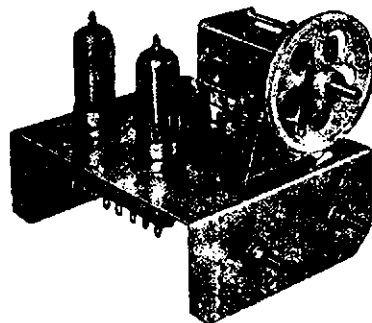


tion you would copy will work your a.v.c. and generally play havoc with the receiver. You of course will blame the transmitter, yet on a good receiver it is often a surprise to find that it is possible to fit in another station between the two and without actually overlapping. With good skirt selectivity it is possible for two groups of s.s.b. stations to work on the same carrier frequency, one group on the lower sideband and the other on the upper, but neither group QRMing the other.

With this to think about and perhaps envy, I'll leave you till next month when I hope to begin on the generation of s.s.b., but eventually will return to the reception side of things for whatever we do on the generator is applicable to the receiver in the interests of greater selectivity.

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CQ, CQ, CQ AUSTRALIAN AMATEURS DE THE FEDERAL EXECUTIVE

BY THE FEDERAL PRESIDENT OF THE WIRELESS INSTITUTE OF AUSTRALIA, G. M. HULL, VK3ZS

Recently I made a tape recording, on behalf of the Federal Executive under the direction of the Federal Council of the W.I.A., which many of you heard played and re-played over the official Divisional stations of this Institute.

By popular demand, I have been requested to provide the script for publication in "Amateur Radio" so that those who were unable to listen to the broadcasts can read it for themselves. In the printed word, I shall qualify some remarks from the original recording and also add some other information which has since become available.

My prime object in arranging the recording is to place before you certain facts relating to proposals being placed before the International Telecommunications Union which could affect the frequency allocations existing at present for use by the Amateur Service, and to also let each and every one of you know the details of the case which the Federal Executive of this Institute submitted to the Postmaster-General's Department in defence of the existing Amateur bands for and on behalf of the Amateurs of Australia irrespective of whether they belong to this Institute or not.

Before I proceed with the more important part of what I have to say, let me give you a very brief outline of what the I.T.U. does insofar as its activities affect our hobby and where we fit into all this business of frequency allocations and radio services.

Well before World War II the Governments of the day were well aware of the potential behind communications facilities such as those afforded by radio methods and the power they held in their hands for purposes of speeding up messages—to use a very simple term—and for propaganda and political transmissions to other countries. Even at this time the bands were becoming crowded and it was realised by most countries that something would have to be done to allocate frequencies on a world wide basis so that all services could adequately operate with as little interference to the same services in other countries insofar as that was possible.

Even in the 1930's this was a formidable task, but briefly, it was carried out by what is now known as the International Telecommunications Union (the I.T.U.), and up until the outbreak of World War II, we Amateurs had retained reasonable frequency allocations and most of us were happy with what we had. Of course at this time there were less than 1,500 Amateurs in Australia, nowhere near as many transmitting services and generally—looking back at it all in retrospect—not very much to grizzle about, even though the Amateur frequency allocations had been pruned at the Cairo Conference in 1935.

Well, the main function of the I.T.U. was to bring about agreements between all countries which would permit the equitable sharing of the entire frequency spectrum on an engineering basis. By this was meant a design to break the spectrum up into sections—commencing at the low end with broadcasting services on up through the shortwave spectrum with shortwave broadcasting services, maritime mobile and fixed services, aeronautical services, amateur services, and so on into the v.h.f. and u.h.f. regions.

In the first place this was roughly arranged for the then existing services, but with the advent of World War II, and the great impetus resulting from it in the way of advanced techniques—particularly in the v.h.f. and u.h.f. regions—the aftermath left complete chaos with all countries operating all sorts of services anywhere and everywhere.

As you all recall, when we Amateurs were re-licensed in Australia we received most of our bands back over a period of time as the frequencies were released from use by military and other services. We never obtained the 200 metre band back, which is perhaps understandable to some extent in a country like Australia with its vast areas. From memory,

I recall that there were something like 5,000 applications for broadcasting station licenses by private organisations after the war. The applicants were not all fortunate, but an inspection of the frequency table today shows that not only is this part of the spectrum completely allocated on a basis of a 10 Kc. separation between stations, but many channels are shared between geographical locations which could not normally interfere with each other's transmission.

Some of we older Amateurs regretted the loss of this band for this was virtually the only band by which the general public knew what Amateur Radio was all about. Very few members of the general public listened to shortwaves—today hundreds of people do—and the Amateur service is recognised by them as operating in the short-wave and v.h.f. bands. Just from the interest point of view I would like to say to the younger Amateurs that this 200 metre band was not an open band for use by any licensed Amateur. Applications were granted to only a few Amateurs and they had to operate very much under broadcasting station conditions, pay royalties on all records played, keep proper station logs and records—all of which was quite an expensive business. I have wandered off my story a little here, but it is very interesting to read of the earlier days in Amateur Radio. An era when there was no such thing as disposals equipment—Amateurs mostly made their equipment, even the microphone.

But let's come back to 1947 and the Atlantic City Conference of the International Telecommunications Union. This was probably the largest Conference ever held to determine an engineering basis for the world-wide allocation of frequencies which encompassed all the services added to our way of life emerging from World War II—greatly expanded airway services with their complex transmitting equipment, radar both on ships and aircraft, advanced maritime direction finding and communications equipment, larger requirements for expanded army, navy and air force ground, sea and air communications; frequency channels for dozens of domestic services such as taxi-cabs, radio telephone, fire fighting communications both city and country, fishing craft and many others. All these services in 1947 which didn't exist pre-war! Without some form of International control and agreement between countries there would have been no answer to the chaos and confusion which would have existed today. As technical men, we cannot close our eyes to these facts. No longer can we rest on our laurels of the past as the men who pioneered the shortwave bands and because of this should have what we wanted in the frequency spectrum. To any logical thinking person such a plea cannot stand in the way of scientific progress, gall and all as it is to all of us who remember the earlier days. We have to contribute something greater to the world if we are to retain our place in the scheme of things. We shall have to contribute still greater things if we are to hold what we have left now.

In my mind there was one saving grace resulting from the 1947 Conference, and that was that the Amateurs of the world were recorded in the Minutes of that Conference as "the Amateur Service" and for the operation of which were laid down certain specific radio regulations. Don't confuse these regulations with the domestic regulations laid down by the Postmaster-General's Department under the Wireless Telegraphy Act—they are a different thing altogether. Atlantic City laid down that Administrations—by this they mean the Governments of countries—would provide frequencies for the Amateur Service. I would like to quote you, from the Minutes of the Extraordinary Radio Administrative Conference held in Atlantic City in 1947, two regulations which give us international status as recognised frequency users as distinct from the category of domestic frequency users.

Regulation 31—Amateur Service: A service of self training, intercommunication and technical investigations carried on by Amateurs, that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Regulation 56—Amateur Station: A station in the Amateur Service.

These two regulations unquestionably record the Amateur service as an internationally recognised service for which our frequency requirements are considered on a world-wide basis.

ATLANTIC CITY CONFERENCE 1947

The case for the Amateur at Atlantic City was undoubtedly won due to the efforts of the Radio Society of Great Britain and the Amateur Radio Relay League. Australia's case was in the hands of the Postmaster-General's Department who were expected to protect our requirements at the same time as the interests of other commercial frequency users who conceivably could, and did, want the same frequencies. Where then was our strength? I would say we had none! If it hadn't been for the work of the R.S.G.B. and the A.R.R.L. I doubt if there would be any Amateur Radio today. Commercial interests are not interested in Amateurs when frequencies are involved. Sure they probably give preference to them in employment where their qualifications are satisfactory, but then this is a logical procedure since Amateurs are at least partially trained on the average—some of course study in pursuit of higher technical qualifications—and their natural bent for experimentation makes them a more suitable employee where they take positions in the electronic field as their pursuit in life rather than having Amateur Radio merely as a spare-time hobby.

When I say we had no "strength" at Atlantic City, I do not infer that the individual officers of the Australian Delegation did nothing about Amateur requirements. What I do mean is that the W.I.A. did not have a representative there to observe and advise on all the facets of Amateur service communication requirements which are peculiar to our work and upon which we are naturally more knowledgeable.

TECHNICAL ADVANCE

After World War II, the technical advances were so great that the average Amateur was technically lagging the field, whereas in earlier days it could safely be said that the Amateur was technically as advanced as his commercial counterparts. No longer could the Amateur rest on his laurels as having pioneered the short-wave bands. He had to do something of more public worth than just experiment of frequencies from 80 to 10 metres. All the experimenting on these bands were an accomplished fact. Certainly they afford the means of teaching newcomers the practical side of transmission and reception. Certainly these bands leave a small area for experimentation such as in single side band technique, frequency modulation, pulse—but the commercial people were well abreast and ahead on these techniques. In 1947 the Amateurs' technical standing was meaning less and less in the ever-widening field of electronics and as I see it our existence since has depended on the powerful case put to the I.T.U. at Atlantic City by the R.S.G.B. and the A.R.R.L.

In speaking frankly, I do not want to convey the impression that I am siding with the commercial viewpoint. Far from it! I am trying to convey to you a realistic picture. We must forget our attitude of mind that we owned the bands first, therefore they shouldn't be able to take them away from us because of this. Today such a defence is too weak. It is insufficient to stand in the way of progress.

From the Atlantic City Conference came the Frequency Allocation Table to which the majority of attending nations were signatory, some with variations more lenient to the Amateurs than Australia. Australia carried out this agreement to the letter, which I am afraid was not the case with many other countries, as listening over our bands for the past ten years or more has proved to us all. At this Conference we lost part of our 80, 40 and 20 metre bands—on the other hand we gained the 15 metre band which has proved, and is still proving to be, an excellent band for our use, but it hardly compensated for the losses in our most popular bands. Don't ask me why we lost so much when countries like America

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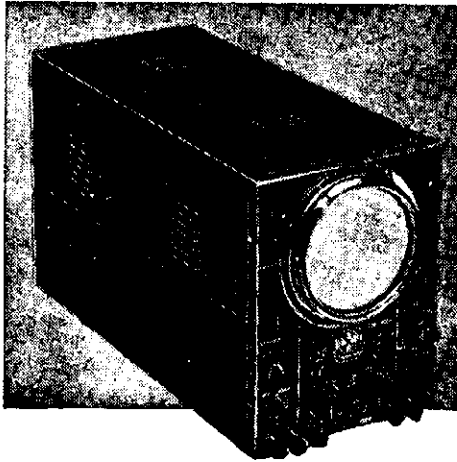
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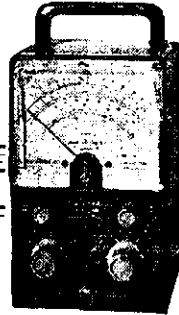
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and England retained more; countries which have a far greater communication density and infinitely greater interference problems than we do in Australia. I don't know! Nobody really knows! As I have said, we were not there to hear and see for ourselves. The R.S.G.B. and A.R.R.L. were! Can we deduce that these two societies, because of having representatives there, were able to see that their case was presented as they wished it to be—or was it merely coincidence.

Members of the Federal Executive—past and present—have studied the overseas trends for a long time. We have listened to all kinds of reports from different qualified persons who have been overseas at both minor and major conferences, but we have never felt satisfied at any time that we have the full picture of what goes on and why. For years past we have interested ourselves in various matters which might have seemed rather remote from the Amateur service, but which have combined to give us a more realistic picture of the gradual change which has continued to take place in the sphere of radio communication. In our minds it hasn't been a very heartening picture.

W.I.A. REPRESENTATIVE TO GENEVA

But it culminated in a unanimous desire that at the next I.T.U. the Institute must have its own representative there to see and hear for himself what makes an International Telecommunications Conference "tick"; to "feel" for ourselves the atmosphere and activity which has brought about this change; to gain absolutely first hand information on where the Amateur stands in the future and how much international standing the Amateur service has in the world today; to find out for ourselves how Governments represent the Amateur service requirements; and in justice to the Amateurs in Region III support the two major Amateur interests from Region I. and Region II., who—if reports are correct and we have no reason to doubt otherwise—played such a vital part in saving for us the frequencies which we have all had the privilege of using in pursuit of our great hobby for the past decade.

Having made up our minds the matter was placed in the hands of the Federal Convention last year, which unanimously supported us. The result—you all know. We were instructed to raise the funds and send our own representative with or without official accreditation. We have advised you all through your Federal Councillor of the means by which we decided to finance the project and the approximate sum of money we would require. You have all received a circular letter and a donation card asking for £1—a sum which we considered small enough to ask for in an effort to have something really active done about protecting our hobby. Many hundreds of you have willingly supported the fund, many have gladly contributed much in excess of what we asked for although we would have been very happy if 3,500 Amateurs had merely paid £1 each. There are many who have not yet contributed and who we are hopeful will do so before the fund closes. With the expenses of printing, paper, postage, etc., deducted, the fund currently stands at £1,800. Many of those who have already contributed have offered to contribute more if the target figure of £2,500 is not reached, but we feel sure that those who have not contributed will not let their brother Amateurs pay his way for him.

Well now, after the fund was opened, this Executive went into action to obtain official accreditation for the W.I.A. representative to attend the Conference with the Australian Delegation and this was agreed to by Mr. Davidson, the Postmaster-General. This was most gratifying to us for it gives our representative official standing and that was the way we wanted it to be. You have all been advised that John Moyle, VK2JU, was chosen as our representative and we are sure you will agree that a better qualified person would be difficult to find in every sense of the word. John has the technical know-how, administrative experience, writing and speaking ability above average and a solid background of Amateur operating and W.I.A. administration—all of which are surely the abilities we require in the man who goes to Geneva on behalf of us all. We don't envy John the job of work he has to do, but we know he will put his heart and soul into it as he has done with any other activity he has undertaken during his years in the field of radio communication.

BROADCAST FROM VK2WI AT DURAL

VK2WI broadcast a short talk from John on the week-end during which his name was released, and I would like you to read the text of a recording taken at Dural at that particular time.

"As you know now, the Institute has honored me with selection to be its representative at Geneva next year. I don't need to tell you how much I appreciate the significance of this selection. I am well aware of the fact that it is probably the most responsible task which has been given to a member of the Institute to date, bearing in mind the international implications of this very important occasion. I don't mind telling you, also, that when it was first suggested to me that I might nominate for the position, I didn't take it very seriously. I couldn't imagine that there were not others more qualified than I would be for this particular job. However, as time went on I gave the matter more consideration and finally I did agree to have my name submitted and was fortunate enough to be selected by Federal Executive.

"The importance of the representation at Geneva is very definitely in my mind. I can assure you that I fully appreciate the responsibility involved in it. This is the first time the Government has recognised the Institute in this way, and it is probable, too, that no other representative at Geneva will be there under quite the same conditions.

"I don't want to say a great deal for obvious reasons at the moment, but it does seem to me that there are three major things which make this visit to Geneva so important.

"The first is that, although so many of the matters which make up the Government's proposals will be worked out before the conference begins, it is a conference, and there will be many discussions and possibly changes of mind which could affect Amateurs. It is absolutely vital that we have somebody with an Institute background on the spot to do what he can should the occasion arise.

"The second thing is that this is only the beginning of another 11-year period which will elapse before the next conference, and I think every Amateur in Australia realises that we should begin to organise now for what might happen after Geneva. We have never had a representative at such a conference to find out exactly what goes on and to report back with the basis of a case for the future. I think that is extremely important, not only for ourselves, but to enable us to carry on the necessary negotiations with other bodies which influence Amateur Radio to see that at all times our interests are protected.

"The third point, as I see it, is the opportunity provided to discuss Amateur matters with representatives of other societies who will be at Geneva. This is possibly as important as the other two because it ties itself to the Amateurs' position in the future on a world-wide basis. I think we must all realise that, whatever happens at Geneva, what might happen 11 years from now could be almost anything. A united front in understanding the problems and position of Amateur societies and other countries of the world is vital to us, particularly because of our comparatively isolated geographical position.

"Let me say again that I am fully appreciative of the honor that has been accorded to me, and to assure you that I will do everything in my power to see that the interests of the Institute are adequately represented at Geneva."

I am sure you will agree that these words are indicative of what we can expect of John from Geneva.

Talking of Geneva, brings me to the most important points of this talk to you. First let me give you a brief outline of how the agenda for these Conferences are produced. Every country naturally has its own particular frequency allocation problems and its demands are dependent to a large extent upon its area and population; to some extent upon its terrain; its shipping and airline establishments; its geographical location with respect to its neighbors; its fixed services; its mobile services, and so on. The more civilised it is, the more services it has, and so the more frequencies its frequency users say they require. As I said before, these have multiplied themselves beyond belief since World War II. and as we see it will go on doing so. Looking at the bands from the Amateur point of view, we rightly consider that "miles" of the bands—to use a colloquialism—are needlessly taken up with useless jamming stations, propaganda broadcasting to which the utmost minority of the world population would listen, all sorts of telegraphy stations which do not seem to transmit anything for hours on end except some identifying signal, and sometimes not even that—in fact as Amateurs used to going on the air and making useful contacts, testing new transmitters, aerials, receivers, and all the rest that goes with it, learning something every time we do so and passing it on to others—sometimes wonders why our bands suffer when all these "miles" of frequency space doesn't seem to be occupied at all. Unfortunately, such

observations help us not at all. To such talk is leaned a deaf ear all over the world in every country.

PROPOSALS TO THE I.T.U.

All these various frequency users are only interested in one thing—their own requirements! And to this end they will fight for what they want. So why shouldn't the Amateurs! We have no specific details of how many foreign countries present the requirements of their frequency users to International Conferences, but in a few minutes I shall tell you how Australia does it. Suffice it to say that these requirements are initially presented by each Administration well in advance of the Conference itself. The staff of the International Telecommunications Union set all these requirements out without any variations whatever—they have no power naturally to vary such requirements at this stage—in a large volume which is called "The Volume of Proposals." The name is self explanatory. The volume lists the entire frequency table in the various agreed service sections of the spectrum—maritime, aeronautical, amateur, fixed services and so on—against which is listed the requirements of each country. A copy of this volume is forwarded to every Administration prior to the Conference and so every country knows beforehand what the other countries intend trying to have agreed to at the actual Conference. Australia's proposals have already gone. But let me point out one very important point. All these requirements as set out previous to the Conference are, as the volume says, merely proposals—proposals which might never get through the Geneva Conference. They are, as I said before, the requirements of all the countries on behalf of their frequency users and they are telling every other country in advance to give them a chance to relate these requirements to their own and everybody else's. It all sounds very nice and simple doesn't it. But after that the fun starts.

When each country receives its copy of this "Volume of Proposals", its Administration will go through it with a fine tooth comb and compare its requirements alongside all other countries. From this, the Administration will obtain a reasonable idea as to what hope its requirements will have of being agreed to wholly or in part by the majority of other Administrations. By the way, this term I use, "majority", does not infer that the majority decision will necessarily be carried out automatically by those who oppose it. There are all sorts of variations, compromise agreements by groups of countries, frequency sharing and staggering agreements which result. All this is ultimately reached by weeks and weeks of discussions and arguments by small working groups dealing with various portions of the spectrum and/or individual frequency user services. It's all very complex, but out of it all seems to come some form of frequency table—in itself quite complex—to which all signatory nations are expected to agree as from the date of its implementation, which might be a number of years after the Conference.

As we know to our sorrow, some countries don't stick to their word. Some countries don't sign an agreement on certain proposals or amended proposals in the first place. Some countries don't vacate a given band when they agreed to—the date they agreed to. In any case, whatever variations in frequencies are agreed upon all countries are given a period of time to make the change which might involve very high costs in many instances.

THE AUSTRALIAN SYSTEM

Now I mentioned before that I would tell you about how Australia presents its initial requirements which are included in this "Volume of Proposals". As I said, I don't know how other countries go about presenting theirs, but in Australia we have what is referred to as the F.A.S.C., which stands for the Frequency Allocation Sub Committee. This Committee, as well as making decisions regarding domestic frequency users' requirements, also carry out the work of providing the initial proposals for the International side of Australia's communications. It consists of representatives from the Postmaster-General's Department, whose representative usually chairs it, the Department of Civil Aviation, the Overseas Telecommunications Commission, the Australian Broadcasting Control Board, the Communications Directorates of the Army, Navy and Air Force, and the Department of Supply. This Committee meets for all kinds of discussions which rarely in the past have been vitally related to Amateur affairs. Nevertheless, the Institute sought representation on this Committee on those occasions when Amateur matters were to be discussed.

Members of the Federal Executive attended the relevant meetings and were very dissat-

USE THE BANDS

Gentlemen, I am not being pessimistic. I am optimistic on the contrary despite the gloomy present. If other frequency users can fight for what they want, we can too. But it's no good the captains fighting without the team behind them.

When I say fight, I don't mean we intend to make our problem a personal issue with members of the Australian Delegation, some of whom administer the Amateur regulations. Not at all. I use the word "fight" in the broad sense of the word as a "stand" which the entire world of Amateur Radio is taking to see that the Amateurs' case is heard by the Geneva Conference. In our case the W.I.A. representative has been appointed as an observer adviser to his country's delegation and as such he is going there for just that—observe and advise. And he will be responsible to see that the liaison between the Australian Amateur and his Administration is not only maintained, but broadened.

We are faced with the prospect of further frequency cuts. Right now we are faced with a loss of 100 Kc. off the top end of the 80 metre band. We are faced with another loss of a further 50 Kc. off the 40 metre band. We are faced with a third loss of 50 Kc. off the 20 metre band. It is proposed that all other bands be left as they are at present.

There is the thin edge of the wedge as we see it, but don't you let history repeat itself for it will if we don't make a stand and fight it out with our bigger brothers, the A.R.R.L. and the R.S.G.B. They are faced with the same pressures as we are from commercial frequency users, make no mistake about that. The W.I.A. proposals take up sixteen pages of foolscap typed. A copy has gone to your Federal Councillor. I want you to read it—all of you. Ask your Federal Councillor to make arrangements for it to be read at a meeting. If you, as a member, have anything to say about it, say it whether critical or otherwise. We have done everything possible to establish grounds for the retention of our bands on the same basis as the commercials apply—density per kilocycle and density per channel. That's the way the commercials claim frequencies, so that's the way we did it. And as a recognised international frequency user, the Amateur service has a right in the world of communications. He's being forced to fight, so he's going to fight, but let's back our fight! Let's use our bands!

Gentlemen, the monitoring stations and the radio inspectors haven't been idle. Neither have other frequency users. You try sitting in front of a Committee like F.A.S.C. and be told the percentage of stations operating in the 80 metre band any time of the day or night over a 12 month period and think up an answer fast. We did! Sit there and be told the 40 metre band was monitored for twelve months, night after night, and then recall an R.D. Contest to your mind as compared to all the other nights in the year, then find an answer. We tried! Sit there and be told by radio inspectors who have for the past twelve months or more checked almost every Amateur in the Commonwealth, how many Amateurs had call signs but no station for the inspector to inspect, and see if you can come up with a good strong, powerful excuse! We tried!

Sit in front of representatives from commercial frequency users and tell them that the Amateurs provide a nucleus for semi trained electronic personnel, that they provide emergency communications several times a year for fires and bloods or lost hikers, and find a powerful enough answer when they say, "but during such emergencies you only need certain fixed frequencies, don't you?" Gentlemen, I am not being melodramatic. That's only a very brief sample of many questions arising from discussions at meetings like we attended. We found answers—and arguments. And we pushed them for all we knew. The result will come out of Geneva. But remember, what went to Geneva were proposals only. Such proposals must be agreed to by many countries; perhaps not necessarily all, but a lot otherwise such bands would be of little use to Australia. So don't give up chaps, the fight hasn't started yet.

EXTRACT FROM HANSARD

Since making this text as a recording, I have learned that the W.I.A., as the representative body of the Australian Amateur service is not alone in making an effort to preserve the rights of the Amateurs. The Hon. A. Fairhall, M.H.E., Federal Member for Paterson in N.S.W., and himself an Amateur, had something to say in the House of Representatives during the Address in Reply debate in the House on 18th February and I am pleased to reprint from Hansard what he had to say:

"There is one other matter to which I wish to refer in this field, or a related field. During this year there will be in Geneva a periodical meeting of the International Telecommunications Union. This is a body that meets periodically to carve up, as it were, the radio frequency spectrum, and to make laws for the orderly use of radio communications in all their forms. The normal drill is for us to send forward to Geneva our proposals. They will there be integrated with those of all the other signatories to the International Telecommunications Union Agreement, and then returned for consideration and for the preparation of the brief which our delegates will take to Geneva. In the broad field I am not so terribly concerned, because these are matters for departmental consideration, and I am sure they will be dealt with very well. But I want to raise here a voice on behalf of a group of persons whose interests may very well be overlooked, because they do not usually come to public attention when these matters are being considered.

"I refer to the 3,500 operators in this country of Amateur experimental radio stations. These people are fully qualified by examination to operate their stations. They run them on a basis of international communication, and they therefore offer a potent source of development of good international relations. Since World War I they have always enjoyed the use of certain radio frequencies, but inevitably, in the course of time, as the pressure of commercialism in radio has grown, so the channels available have become severely restricted. Today I believe they are almost down to the minimum required to encourage more people to undertake this activity. These operators occupy, I believe, a very important place in public esteem. I well remember what happened during the last war with relation to defence communications, and the history of the role played by Amateur Radio operators has not been adequately stated. Before war-time these Amateurs were operating as reserves for the Royal Australian Air Force, and the members of the radio reserves were the first into the Air Force when war was about to break out.

"When we went into the war, Australia had no substantial communications industry. We had one or two factories which were aware of the problems of making transmitters. The rest had been making receivers. An immediate call went out for technicians for the factories, laboratories, design establishments and assembly plants, and ultimately the operation of much of this equipment fell to Radio Amateurs. In every disaster that has struck Australia, the Radio Amateurs have done their part in providing communications, as I am sure they are doing in North Queensland at the moment, taking up where ordinary communications break down. Our expeditions to the Antarctic take with them Amateur Radio operators. These people, who train themselves in their own time and at their own expense, have rendered, and are rendering, very special service to this country.

"I know that the proposals affecting Amateur Radio operators, which involve some review of their frequency channels, have already been dealt with departmentally and may indeed be in the submissions which have gone to Geneva. I have asked to have a look at those, and I should like to study them in due course. In the meantime, I urge the Government to consider this problem very carefully. It is true that 3,500 people do not speak with a very loud voice in this country, but I believe that they have given and are capable of giving to the nation and that this problem should be approached constructively, and I am sure that it will be regarded as one that merits sympathetic consideration by the Government.

"There is one other important aspect of this matter, Sir. The Governor-General's Speech referred to developments at Woomera. We all know—those of us who have read something about what is going on there or who have been there—that, without electronics, there could be none of this development and no modern weapons, and that, indeed, there can be no modern defence without the widespread use of electronics. This group of people who occupy themselves in something that is more than a hobby are contributing to the building up in Australia of a vast pool of trained technicians who are ready to take up, even at short notice, as they did in 1939, the technical support of Australia's defence.

"I would end on that note, Sir. I urge the Government to consider very sympathetically indeed the preservation of all the facilities which the Radio Amateurs in Australia enjoy today, and perhaps even some minor extension, if that is possible, by international agreement."

(Continued on Page 19)

ified with various aspects of the procedure adopted by the Committee in dealing with certain proposals which concerned Amateur frequencies, some details of which I shall give you in a moment. In the first place, of course, not being members of F.A.S.C., we had no vote. The agenda being discussed was confidential—we couldn't even take a copy from the room—and all matters contained in and arising from it were sub judice at that stage. A previous letter from the Department requesting proposals for the Amateur service had been received and the request was that this be in the hands of the Department at a much later date than these particular meetings of F.A.S.C. The draft was being prepared, but could not be completed in time for the F.A.S.C. meetings for which we consider it should have been requested. We immediately expressed our concern to the Department and requested that the Institute's proposals be re-heard by F.A.S.C. in view of the confusion created by the Department's letters and lack of knowledge of the agenda under discussion by F.A.S.C. By this time our document of proposals was completed and filed with the Department well ahead of the date scheduled by the Department. Our request was tabled before the F.A.S.C. at a meeting some time later and although we were given the ear of the Committee for more than an hour, the meeting refused by vote to re-open discussions on frequency proposals on the grounds that if they re-discussed Amateur frequencies, other frequency user representatives would have the right to request that their case be re-heard and so the whole frequency table would have to be gone over again.

However, I must say in all fairness that we were given a fair hearing during the discussions at the meetings we attended, although we hadn't completed, at the time, the figures we wanted tabled. I can also say that even if we had had the power of a vote it would have made little or no difference to the final motions which were passed.

From various comments I have heard made by Amateurs at different times, it appears to be the general opinion that if we lose any frequencies, the Postmaster-General's Department is responsible for taking them off us. I am far from siding with the Department, but in fairness I must point out that this is far from the truth—in respect to current proposals anyway. Remember this Committee consists of the largest frequency users in the Commonwealth and it is they who moved motions for certain reductions in our bands. Certainly the Department chaired the meetings, but there was no instance where the Chairman had a casting vote, hence my earlier remark that commercial interests (and we probably all loosely refer to commercials as any frequency users outside the Amateur bands) are not concerned with the poor old Amateurs when it comes to frequency requirements. Already in possession of more frequencies than they seemingly require, they still press for more. As I sit and talk to you here it may all sound very simple for the Institute to present a powerful case for the retention of Amateur frequencies—confronted by representatives with powerful cases for increased frequency bands, it's not as easy as you think. Don't think we put up as weak a case, far from it! We put the Amateur case as strongly as possible. I can assure you, even to the point of gaining support from certain members, but overall we lost some ground. From it all we saw more and more reason why we were right in taking steps to send our own representative to Geneva. More and more we realised that we must—without equivocation of any kind—see and hear for ourselves what America, England, New Zealand and all the European countries had to say at Geneva.

For the past five years we have told Conventions, both State and Federal, that the pressure would be great at the next I.T.U. Never more truly were words spoken. We were not taking the attitude that this would probably be the case—we knew it would be! We told members through Editorials and Convention minutes that the Amateurs must organise themselves to provide communications networks for civil and national emergency, that they must use the bands, that they must give themselves all the publicity they could through every possible channel, that they must organise their Divisions to provide a technical service to the public wherever it might be needed—in fact to realise that they had to provide more from Amateur Radio than just a hobby where one can rest on one's laurels and bask in the glory of the wonderful pioneering the early Amateurs carried out and for which they were at the time highly commended and respected. Time, I'm afraid, stands still for no man and if we don't all take a firm hold of what we have left we won't have anything to hold on to at all.

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9RR		3000	2320		5320

PHONE—	10	15	20	40	Total
Call	10 <td>15 <td>20 <td>40 <td>Total</td> </td></td></td>	15 <td>20 <td>40 <td>Total</td> </td></td>	20 <td>40 <td>Total</td> </td>	40 <td>Total</td>	Total
VK2ADE	1345	5205	1055	495	8100
2AHH	1485	4235	775		6495
2AKF	880	2310	1530		4720
2AKV	720	755	895		2370
VK3HW	3220	4915	1735		9870
3AEE			4070		4070
3VF	1365	2620			3985
3HL	1755	410	1185		3350
3AJP			920		920
3LW		625			625
VK4XJ	3280				3280
VK5WP	1795	1640	1155		4590
5WO	330	1530	940		2800
VK6RU*	2995	3330	3795	100	10320
VK7WA		2120	1360		3480
7SM			1275		1275
VK9BW	1350	785	2280		4415

* Total includes 100 points on 80 mx.
Check Logs: VKs 4AF, 5NO.

LISTENERS' SECTION—	Pts.
VK2—L2022	10775
VK3—BERS195	1480
VK5—SWL5020	1240
L2001	1090
VK6—L8003	4275
VK7—De Balfour	6255

NEW ZEALAND

C.W.—	10	15	20	40	Total
Call	10 <td>15 <td>20 <td>40 <td>Total</td> </td></td></td>	15 <td>20 <td>40 <td>Total</td> </td></td>	20 <td>40 <td>Total</td> </td>	40 <td>Total</td>	Total
ZL1AH	4390	5570	4295		14255
1AJU	5050	4840	3135		13025
1NG	2450	4005	4150		10605
1MQ	3495	2535	3010	1535	10575
1APM		6865			6865
1AMM	1605	2350	2415		6370
ZL2ARL	1125	2090	635	805	4655
2IQ		1660	1530	55	3245
ZL3OB	1655	2350	2225	100	6330
ZL4AT*	1680	2795	5810	1030	11475
4BO		5850			5850
4CK			2375		2375
ZL5AC	575	1760	1170		3505

* Total includes 160 points on 80 mx.
Check Log: ZL1AV.

PHONE—

Call	10	15	20	40	Total
ZL1MQ	1840	2660	1415	110	6025
ZL2RT	1750	3200	385		5335
2AHZ	215	2465			2680
2IQ		300	110		410
ZL4BO		4055			4055

Check Logs: ZLs 1AJU, 2ADS.

LISTENERS' SECTION—

DX37A	8100	Pts.
ZL111	1750	"
ZL152	2475	Check
ZL304		
ZL302	3030	Pts.
ZL4 (Thornton)	5660	"

OVERSEAS

C.W.—

North and South America

Call	Pts.	Call	Pts.
W1WF	210	W8BHW	5940
W2GJD	2236	W8OOR	162
W3ZAO	1850	W8YGR	Check
W3DBX	1102	W9ZTD	2010
W3JO	221	K9ALP	666
W3BVN	112	W9KXK	504
W4NBV	4255	W9WCE	456
W4IFN	350	K9ELT	99
K5LIA	3472	W9FNX	9
K5JCC	98	K0TFE	2118
W6GHM	10241	W0YCR	1652
W6TT	7426	VE7ZK	1178
W6IPH	3922	VE1EP	270
K6DDO	3094	VE3JZ	28
W6KG	1736	VE2AHW	1
W6YVO	1596	KL7MF	288
W6ISQ	1512	KL7CTG	35
K6CCM	1140	XE1CM	1
W6BJH	154	CO2US	408
W6CLZ	104	CX9AJ	120
W7LEV	2240	CE3AG	2844
W8JIN	6601	PY2AC	735

Europe

Call	Pts.	Call	Pts.
G5RI	2046	SM7MS	6
G5HZ	1885	SM5OW	4
G6XN	1885	OH3TH	858
G2DC	756	OH9RD	230
G8QZ	50	OH2LA	80
G3GXO	40	OH2RW	64
GM3EOJ	665	OH2HG	63
GM3EDU	135	EA2CR	45
GM3EHI	20	DJ1BZ	2352
GW3AHN	312	DJ2AE	756
HB9MO	988	DL1YA	Check
HA5BI	72	F2BS	176
HA5DH	42	F3II	77
HA5BU	4	F9BB	9
HA5KQD	1	ON4PA	680
HA8KCU	1	ON4LX	360
PA0VO	1066	OZ4FF	432
PA0LOU	96	OZ4RT	45
PA0LU	88	OZ1JW	Check
PA0CF	77	UB5KAB	160
PA0TAU	54	UR2BU	108
PA0LY	4	LA4K	72
PA0VDV	Check	LA1K	63
OK1LM	840	LA2Q	16
OK1EB	24	OE1ER	1081
OK1AEH	9	OE1RZ	828
OK3EA	Check	SP3HL	1080
OK1CX	Check	SP7HX	152
OK1KCF	Check	SP6KB	112
SM4AEQ	310	SP6RT	56
SM5CCE	120	SP8MJ	1
SM5ATK	40	EI9F	4
SM7TQ	20	UC2CB	16
SM5DX	12	UF6FB	1
SM5AHJ	8		

Oceania

Call	Pts.	Call	Pts.
KX6BT	1820	KH6DS	425
KH6IJ	880	FK8AS	4

Africa

Call	Pts.	Call	Pts.
CR7LU	192	VQ2RG	528
ET2KY	512	VZ4KPB	20
FA8RJ	126	ZS6IX	28

Asia

Call	Pts.	Call	Pts.
JA1VX	4320	JA0AN	88
JA2JW	2310	JA1WU	42
JA3JM	1642	JA1BSO	1
JA1AS	714	HS1C	220
JA5AI	374	KR6JF	275
JA9GO	171	MP4BBE	6

PHONE—

North and South America

Call	Pts.	Call	Pts.
K2UTC	6	TI2OE	36
W4NBV	406	HK7LX	527
W4EEO	9	CX3BH	138
W6YMD	11610	CX2CO	2
W8JIN	1525	OA4V	180
W8NXF	1080	LU6MV	360
W9ZTD	180	LU5AR	15
K9ALP	120	CE3HL	1000
VE2AHW	1	PY2AC	171
CO2US	2002	PY5GA	99
HR2MC	405		

Europe

Call	Pts.	Call	Pts.
G3GYH	1365	SM3BIZ	112
G8XN	940	SM3EP	105
G3LYT	84	SM4AEQ	96
G3AQY	80	SM5ZO	Check
G13IVJ	665	SM7CAB	Check
GM3EOJ	392	ON4BX	1152
GW5SL	1272	ON4DH	336
GW3AHN	512	OH3TH	4
PA0HBO	252	OH6DM	4
DJ3VM	1276	SP7HX	66
ILZFT	208	SP3PL	9
EA3JK	66	UR2BU	299
SM5TR	448		

Asia

Call	Pts.	Call	Pts.
JA2YT	828	KR6JF	429
JA1AS	377	MP4BCC	192
JA3JM	189	VS1GZ	156
JA5FT	1	4X4JS	78

Africa

Call	Pts.	Call	Pts.
ZS5OA	630	VQ2RG	108
ZS5PG	112	CR7LU	25

Oceania

Call	Pts.	Call	Pts.
FK8AS	3565	KH6IJ	420
JZ0PB	550	KX6BT	66

LISTENERS' SECTION—

Call	Pts.	Call	Pts.
BRS20317	2320		
BRS15822	1018		
BRS6604	620		
A1622	54		
JA2—1014	60		
HL—5001	286		
K2—7079	220		
YO2—476	473		
SM5—2735	330		
SM4—2825	230		
OE9CZ	210		
ONL559	300		
OK2—3947	288		
OK1—25042	252		
OK3—9280	195		
OK1—1840	36		
OK1—3074	Check		
HE9EVI	432		

NATIONAL FIELD DAY CONTEST, 1959

AWARDS

Section A, Single Operator:

- 1.—H.F. Portable-Mobile—
 VK3DY, D. V. Scott 229 pts.
 Extra Awards to:
 VK3LC, A. W. H. Chandler 184 pts.
 VK3ADW, D. A. Wardlaw 176 "
 VK5LC, L. E. Catford 152 "
 3.—H.F. Fixed Station—
 VK2ASZ, R. L. Lear 76 pts.

Section B, Multiple Operator:

- 1.—H.F. Portable-Mobile—
 VK3WI, VK3 Division 275 pts.
 Certificates also to:
 VK3OM, R. Fisher.
 VK3RN, R. Higginbotham.

Section C, Receiving:

- 1.—Portable-Mobile—
 D. Grantley, W1A-L2022 .. 214 pts.
 2.—Fixed—
 Miss Joyce Martin (VK5) .. 36 pts.

LOGS

New South Wales Division:

- Section A(1)—
 VK2ARZ 67 pts.
 2GJ 65 "
 Section A(3)—
 VK2ASZ 76 pts.
 2AHV 56 "
 2ACB (check log).

- Section B(1)—
 VK2AAH } 32 pts.
 2AIA }

- Section C(1)—
 D. M. Grantley 214 pts.
 R. Thompson 28 "
 D. W. Shepherd 14 "

Victorian Division:

- Section A(1)—
 VK3DY 229 pts.
 3LC 184 "
 3ADW 176 "
 3CN 85 "

- 3ZM 77 "
 3WM 71 "
 3ADL 61 "
 3PZ 60 "
 3AHG 37 "
 3JO/5 7 "

- Section A(3)—
 VK3XB 46 pts.
 3AUL 20 "
 3PW 15 "
 3LW 12 "
 3AXU (check log).

- Section B(1)—
 VK3WI 275 pts.

- Section C(1)—
 J. M. Hilliard 21 pts.
 I. D. Thomas 18 "

Queensland Division:

- Section A(1)—
 VK4TF 49 pts.
 4HZ 34 "
 4ER 24 "
 Section A(3)—
 VK4TW (check log).

South Australian Division:

- Section A(1)—
 VK5LC 152 pts.
 5XM 36 "
 5AV 33 "
 Section A(3)—
 VK5JO (check log).

- Section C(1)—
 Miss Joyce Martin 36 pts.

Western Australian Division:

Nil entry.

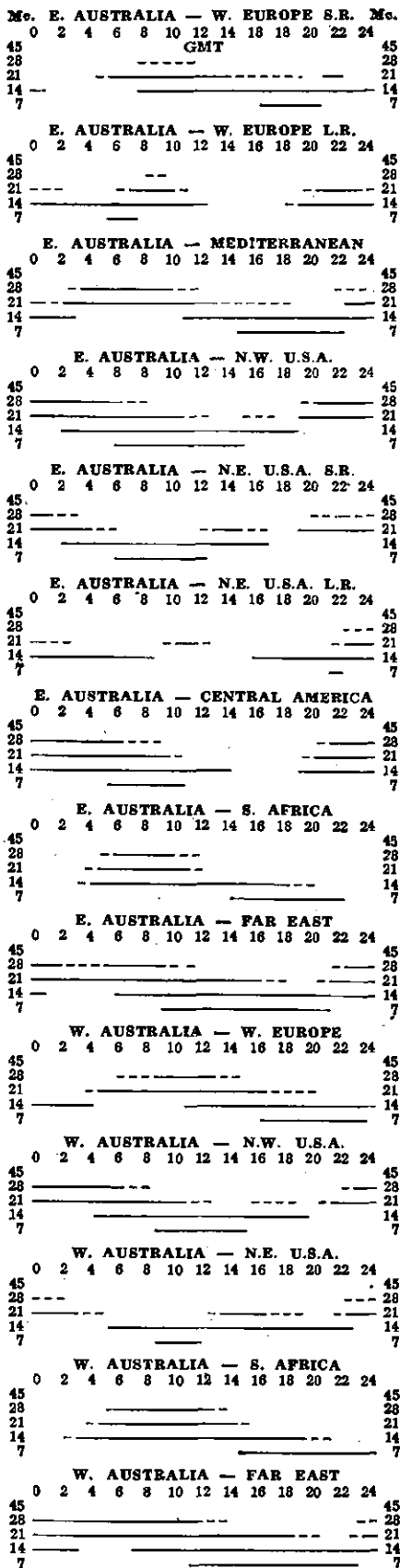
Tasmanian Division:

- Section A(1)—
 VK7JB 84 pts.
 Section A(3)—
 VK7RY 29 pts.

New Guinea Division:

Nil entry.

PREDICTION CHART, APRIL '59



VACUUM MOUNTED CRYSTALS

for general communication frequencies in the range 3-14 Mc. Higher frequencies can be supplied.

THE FOLLOWING FISHING-CRAFT FREQUENCIES ARE AVAILABLE IN FT243 HOLDERS, 6280, 4095, 4535, 2760, 2524.

5.500 Kc. T.V. Sweep Generator Crystals, £3/12/6.

ALSO AMATEUR TYPE CRYSTALS—3.5 AND 7 Mc. BAND.

Commercial—0.02% £3/12/6, 0.01% £3/15/6. plus 12½% Sales Tax.

Amateur—from £3 each, plus 12½% Sales Tax.

Regrinds £1/10/-.

CRYSTALS FOR TAXI AND BUSH FIRE SETS ALSO AVAILABLE.

We would be happy to advise and quote you as to the most suitable crystal for your particular application, either in the pressure or vacuum type holder.

New Zealand Representatives: Messrs. Carrel & Carrel, Box 2102, Auckland.

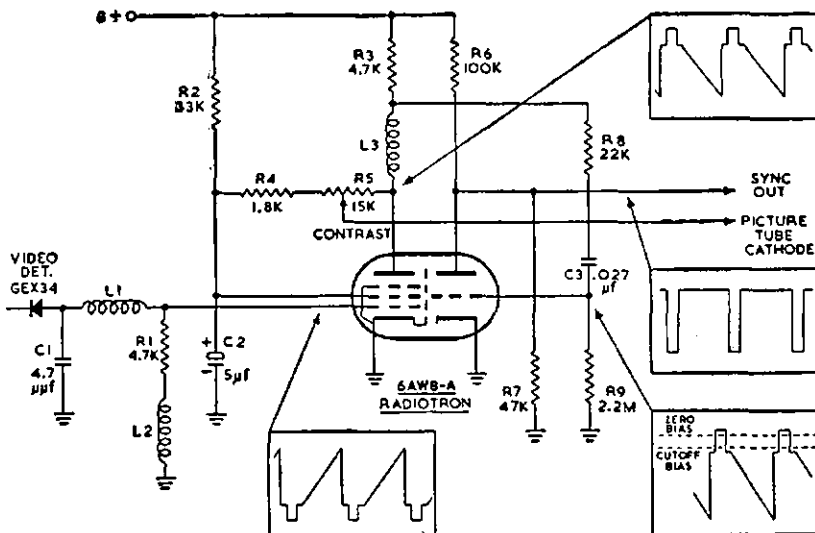
BRIGHT STAR RADIO

46 Eastgate Street, Oakleigh, S.E.12, Vic.

Phone: UM 3387

RADIOTRON TELEVISION VALVE SERIES

The Radiotron 6AW8-A is a 9-pin miniature high-mu triode, sharp-cutoff pentode designed for service in television receivers. Although the triode section is primarily intended for use as a sync clipper, it can also be used in other functions such as sync amplification, sync "splitting" or audio amplification. The pentode section is intended for use as video amplifier, and features high transconductance at low plate current, sharp-knee plate characteristics, and low inter-electrode capacitances. These features give a video amplifier a high figure-of-merit and make it capable of large voltage output. The output of the 6AW8-A video amplifier provides direct drive for conventional picture tubes.



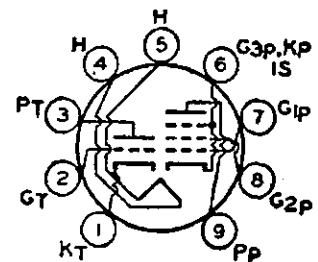
Simplified Circuit Showing Typical Application of the 6AW8-A.

In the typical circuit shown above, the negative-going composite video output from a conventional video detector is applied to the control grid of the pentode. The amplified positive-going signal across the pentode plate load, R3 and L3, is applied to the cathode of the picture tube via a suitable potentiometer arrangement which serves as a contrast control. L3 is the plate peaking coil.

The positive-going composite video signal is also applied to the grid of the triode. Grid current during the sync tips charges C3. Between sync pulses, C3 loses a very small amount of its charge through R5. Thus the sync tips are "clamped" at approximately zero grid potential. R6 and R7 form a divider to supply the triode with a suitable plate voltage. Plate-current cutoff ensures that the clamping level of the composite video signal at the grid is below control grid cutoff. Thus the triode plate current is derived from the sync pulses only. The amplified negative-going sync signal appears across the triode plate load, R6 and R7, and can be applied to a sync amplifier or splitter.



6AW8-A
SOCKET CONNECTIONS
bottom view



- PIN 1: TRIODE CATHODE
- PIN 2: TRIODE GRID
- PIN 3: TRIODE PLATE
- PIN 4: HEATER
- PIN 5: HEATER
- PIN 6: PENTODE CATHODE,
GRID NO. 3, &
INTERNAL SHIELD
- PIN 7: PENTODE GRID No. 1
- PIN 8: PENTODE GRID No. 2
- PIN 9: PENTODE PLATE



AMALGAMATED WIRELESS VALVE CO. PTY. LTD.

47 YORK ST., SYDNEY

VC2.59

SHORT WAVE LISTENING

BY D. M. GRANTLEY,* WIA-L2022

MUCH has been written in the past on the subject of Short Wave Listening, however, for some unknown reason very little seems to be available when a new s.w.l. decides to break into Amateur Radio. With the formation of more Listener Groups in this country, and a greater number of interested listeners on the Amateur frequencies, I have been prompted to write a few words, in the hope that they may be of some assistance to some of our newer listeners.

CHOICE OF RECEIVER

The variety of receivers available to the general public through disposals and other sources is great and rather varied. Some of these pieces of equipment are somewhat complex, having a multitude of crystal filters, bandspread, noise limiters, and many such aids to easier listening. To the beginner, these "aids" will not be of any assistance to him should he require to become a first class operator, for they tend to make him lazy and make him place too much reliance on their use. This applies particularly to the code operator, who will find that having used an elaborate receiver since he first started, will not be able to operate through heavy QRM when he has no device to assist him.

During the war-time training of the R.A.A.F. telegraphists, we had a host of artificial interference of all types fed into the oscillator during some of our training periods and, although we did not appreciate it at the time, we certainly appreciated it when we went out into actual operating conditions. We commenced on the old faithful—R1082, a receiver which is long obsolete, then graduated to AR8s, before graduating to the more complex AR7, SX28, BC-342N, HRO's, Super-Pro's and such. The R1082 was a five-tube t.r.f. receiver with a coverage of 110-15,000 Kc., and was predominantly a c.w. receiver. They were ideal for training, as they had only a reaction control, gain, tuning and antenna tuning. Nothing else. When I came back to Amateur Radio in 1952, I had not taken a symbol of morse for six years, yet with this little plain receiver I did very well. I still have it here, and it would still be in use, only for the fact that it is of no use on r.t. Even at this late stage, I still use only a very austere receiver, a No. 19 and converter and it is quite adequate, even in the worst "dog-pile."

LOGGING

Little attention is paid by many operators to their log, yet the log book is of the greatest importance, specially where the operator is chasing awards. I use the standard W.I.A. log book, but use a separate one for each band with the exception of 80 and 40 metres. This makes it easier for reference. Make sure all entries are accurate and put a query alongside any doubtful entry.

* Mount Raven, Holbrook, N.S.W.

REPORTING

This is the most abused section of Amateur Radio. For some unknown reason, many operators consider it a gross indecency to give other than at least a 579 report, no matter how bad the incoming signal happens to be. I entirely agree with the Editor of "A.R." in the September editorial wherein he comments on the recently completed R.D. Contest.

I was checking my contest log prior to mailing it and particularly noticed that of some 400 entries, only one showed less than R4, the strength was rarely lower than 6, whilst the tone in most cases was 8 or 9, despite the fact that in more than one case the true tone was, in my opinion, about the 6 mark. (I might add here that I concentrated on phone in this contest.)

I suggest to the s.w.l.'s. who can receive code that they pay particular attention to any forthcoming contest and note particularly the variations in reports given to what you consider the actual reports to be—it is rather enlightening.

When sending QSL cards, be sure and give the correct report, don't be afraid of offending the operator concerned. He will be more pleased to receive an accurate report than a false 599, designed only to extract a card from him. And don't forget to add a "C" if he suffers from a chirpy signal, or "K" in the case of key clicks.

Reverting to the "R" portion of the report, how often do we hear an R3 given? Very rarely, yet not so long ago I heard a 559 given, the op. then complaining of the heavy QRM. How he arrived at his readability I do not know.

This may sound more like a criticism than a constructive article, however it is written to give examples of mistakes we may fall into if we do not pause and consider our log entries before we make them.

One final word on behalf of our hard working QSL Managers. Print that call sign carefully on your outgoing cards; saves him a lot of time and unnecessary hard work.

RARE DX

There can obviously be no hard and fast rule about hunting for those rare DX stations. Sitting for long hours at the receiver is all very well for general listening, but I have found that most of my good ones are caught at the least likely moments. I often go into the shack to do an odd job and as a matter of course, on goes the switch, quite often resulting in a rare one on the hook. Often he escapes and if such is the case, I make a note of the time, band, etc., and pin it on the wall in front of me, then at a later date I usually manage to catch up with him.

Also on the wall I have a chart giving me the main world times at a glance. This enables me to use the local time of a station when writing out the card, a job which I do when I actually log the call. This saves a lot of time at a later date.

I also keep a card index showing the call of all stations to which I have sent cards, date, band, emission and whether or not they have replied. Included in this index are cards for stations which I know refuse to reply, or any special remarks of any interest.

GENERAL LISTENING

A good operator will log anything he hears, but I must confess that for a long time I refused to log the more common calls such as W, ZL, and the more common Europeans. However, now that I have discovered a few listener awards which are about, I log anything and everything, regardless who, where, or on what band. This is easy, but for anybody wanting operating practice, I recommend some of these DX dog-piles. Hop in and try to sort one out, I assure you there is no finer way of getting code practice other than logging some of the better class VK operators who, it is regretted, emerge from their hiding place at contest time.

I log all times in local "K" time, converting to their local time when I fill the QSL out.

OTHER POINTS OF INTEREST

An old call book can be a valuable index system, the Christian name of the station licensee, written beside his call is valuable for reference.

During the R.D. and local contests, I used it to save me a lot of time in checking to see if I had already logged a station on a particular band. By using a distinctive mark for each band I could tell at a glance if I had previously logged him.

Another gadget here which causes no end of amusement is an old car mileage indicator—a valuable asset for keeping an accurate count of countries heard. I have also a complete rig here which is battery operated for use in case of power failure.

At times when I want to listen on one band which is rather sick, I connect a single can from each set to the headphone bracket, enabling me to monitor one band and listen to another—an old R.A.A.F. trick.

As previously stated, this article is written primarily for the benefit of our younger members and I sincerely trust that it may be of some assistance to them as they take part in this wonderful world-wide hobby of ours.

SOLID STATE RADIO FREQUENCY AMPLIFIERS

(Continued from Page 4)

7. "Operation of a Solid State Maser," H. Scovil, C. Feher, H. Seidel, Phys. Rev. 105, 1957, p. 782.
8. "Solid State Maser Amplifier," A. L. McWhorter and J. W. Meyer, Phys. Rev. 109, Jan. 1958, p. 312.
9. "Inherent Noise of Quantum Mechanical Amplifiers," M. W. P. Strandberg, Phys. Rev. 106, 1957, p. 817.
10. "Spontaneous Emission on the Noise Figure of Maser Amplifiers," R. V. Pound, Ann. Phys. 1, 1957, p. 24.

MEET THE OTHER AMATEUR AND HIS STATION

RON HUGO* VK6K W

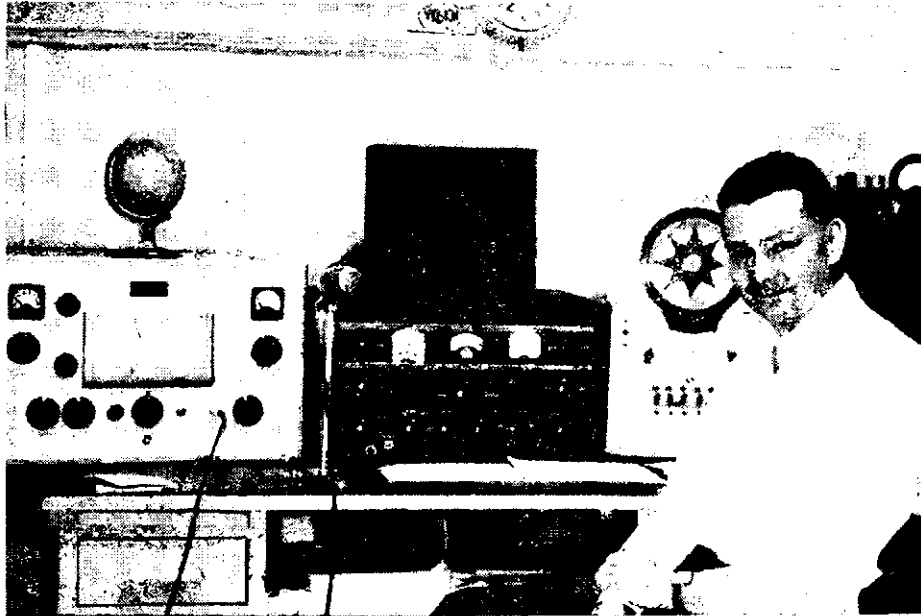
RON Hugo is a West Australian by birth and upbringing and his association with Ham Radio extends to pre-war days. He passed his A.O.C.P. in 1936 and became active on 10 metres working W DX with a W8JK beam.

During the war, Ron served in the A.I.F., first in radio, and later in a radar unit. On the re-issue of Amateur licences in 1946, he returned, working 10 and 20 metre DX.

Main interest in Ham Radio now is DX. On the constructional side, Ron has always been interested in receiver building, and until recently, has always used a home-brew receiver. In fact, his shack is still, with this one exception, completely home-brew.

In the photograph, from left to right, are home-brew Geloso v.f.o., 6146 buffer, HK257B final transmitter, 811s class B modulator in same cabinet; AR88D

* 8 View Street, Subiaco, Western Australia.



receiver; behind the operator is a control panel which includes selsen compass indicator and monitoring c.r.o. On extreme right is a modified 522 for use on 144 Mc.

The antenna system consists of a 6GU beam for 10, 15 and 20 metres, and Wyndoms for 80 and 40 metres.

Ron has been very active in W.I.A. affairs, having been both President and Treasurer of VK6. For the past few years he has been Federal Councillor. He is also President of the Radio Society of Perth.

Other hobbies include 8 mm. cine photography.

CYCLONE "CONNIE" VISITS QUEENSLAND

You all remember "Bertha" last year, April 1 (see Emergency, "A.R.," May, 1958) and the trail of damage she left in her wake. Well, this year her sister was born and soon became a husky howling infant that soon grew up and exceeded her sister "Bertha" in fury.

Time, 1010 hours, 16th February. "Connie" certainly getting frolicsome and trying her hardest to grow up in a hurry.

Bob VK4RW called CQ on 7050 Kc. and was answered by Percy VK4PC and later VK4MF came into the net. Percy was given a blow-to-blow description of the velocity of the wind gusts as they passed VK4RW's shack and headed towards VK4MF.

At 1218 hours the power lines came down and VK4MF and VK4RW were off the air. Percy thought the worst had happened. VK4MF had several blackouts of power during the afternoon and VK4RW came on again when the power was restored at 5.30 p.m. VK4WI came on and the emergency net stood by while he called in and collated reports from the various Amateurs from Atherton in the North to Sarina in the South, assisted by operators in various towns further South.

Unfortunately, the cyclone crossed the coast around Ayr and Home Hill and did tremendous damage, and decided to give a final whirl at Bowen, just to show the people there they were not forgotten and that "Connie" was more forceful than "Bertha" last year. The damage she created far exceeded previous years.

The two Amateurs in Ayr and Home Hill were unable to come on the air and give first-hand reports. (Maybe

they should be given assistance to obtain emergency power supplies.)

Next day, 17th, reports of damage began to filter through. The emergency net grew larger as "Connie" moved further South, losing intensity, but bringing rain and floods in her wake.

At 6.23 p.m. the official station VK-4AA was heard asking where VK4PW, at Collinsville, had got to as communication had been lost with that town like last year. All took turns in calling VK4PW, but no luck as VK4PW had folded his tent a fortnight earlier and shifted to Mackay. He came on at 8.30 p.m. from his new QTH and announced the fact that VK4ZO should be on c.w. A call was given over the Broadcast Stations and Jim popped up on 7090 Kc. crystal controlled on c.w. but conditions were too difficult for VNT to pass traffic to him. A golden opportunity was missed after sterling performance of VK4PW last year.

The W.I.A. in Brisbane can be truly proud of the way the various Amateurs called in during the two days to offer their services. Had the official channels been totally disrupted we were there to help out.

Assistance of VK2WI and VK7WI in vacating the 7050 Kc. channel was appreciated. VK2WI shifted to 7040 Kc. to receive reports from the Northern River Districts of that State.

Seventeen Amateurs were logged at this QTH in the net. Well done, chaps. Your assistance was appreciated.

Do not forget our motto: "Always be ready."

—R. K. Wilson, VK4RW.

The following has been extracted from the Queensland press:

Ayr and Brandon.—Of a total of 320 houses damaged, five were completely demolished, 12 half demolished and 50 lost 50% or more of the roof. A rough estimate of damage to houses is £100,000, and to business premises £30,000.

Home Hill.—This town appeared to have suffered the most severe damage. The shopping centre was very severely damaged. Shop windows and awnings disappeared and many shops collapsed. At least 20 houses were demolished and there was very extensive damage to many others. Damage was estimated at £150,000.

Bowen.—Twenty-eight houses were completely demolished, about 200 suffered major damage, and 250 some minor damage. Damage estimated at £100,000.

Some information concerning damage to the towns of Proserpine and Mackay and districts gives a somewhat similar picture, although the damage appeared to be less as the cyclone had abated somewhat.

Unofficial estimates in the hands of the Commonwealth Government place the total cyclone damage in Northern Queensland at £2,000,000.

TECHNICAL ARTICLE AWARD

The Publications Committee has pleasure in announcing that the Technical Article Award for 1958 has been made to Mr. E. E. Cornelius, VK8EC/T, for his series of articles on Amateur TV.

The Committee was gratified with the high standard of technical articles submitted during the year and looks forward to continued support in this matter.

AMATEUR CALL SIGNS

FOR MONTH OF JANUARY, 1959

NEW CALL SIGNS

- VK—
 2AI—R. L. Brook, 64 Donnison St., West Gosford.
 2HT—H. A. Harris, The Manse, Brighton Le Sands.
 2LB—F. M. Basden, Flying Doctor Service, Broken Hill.
 2AA—W. S. Yarrington, 458 Lane Lane, Broken Hill.
 2ACB—B. E. Bollek, Sutton, via Queanbeyan.
 2ALW—H. J. Weatherley, 20 Sebastopol Street, Marrackville.
 2AUT—G. Taylor, 2 Brande St., Belmore.
 2ZEA—J. W. Ashley, Loughnan St., Coolamon.
 2ZGH—G. H. Hodder, 5 Barwin St., Forbes.
 2ZKI—K. E. Larkin, 15 Countess St., Mosman.
 2ZMD—M. C. Darby, Tathra, Spring Ridge.
 2ZRR—R. Roberts, 20 Inglis St., Kotara.
 3OP—R. L. Brentwood, 23 High St., Mont Albert.
 3OV—G. A. R. Pearce, 207 Prospect Hill Rd., Surrey Hills.
 3PE—R. R. Elkin, 273 High St., Prahran.
 3PH—W. J. Hewitt, 8 Shelley St., Wendouree.
 3PP—C. J. Buckley, 18 Robina Rd., Eaglemont.
 3QX—N. Campbell, Broadmeadows Hostel, Camp Rd., Broadmeadows.
 3ADB—D. L. Bradford, 22 Knox St., Reservoir.
 3AGZ—H. H. Goodman, 66 Wellington St., Kew.
 3AHA—K. J. Hartigan, Sidonia, via Kyneton.
 3ANS—A. N. Sinnbeck, Station: 182 Buckley St., Footscray, Vic.; Postal: 5 Wick St., Deniliquin, N.S.W.
 3AQC—P. R. Ladd, 33a Murphy St., Sth. Yarra.
 3AQL—C. W. Harwood, "Rosebank," South Kyneton.
 3ASS—East Sale R.A.A.F. Radio Club, R.A.A.F. Station, East Sale.
 3ZAF—P. Furr, 33 Princes Highway, West Warrnambool.
 3ZBC—K. Connelly, 214 Warrigal Rd., South Oakleigh.
 3ZBR—J. F. Ryan, Residence No. 352, R.A.A.F. Base, Point Cook.
 3ZGM—P. Milne, 20 Wilmoth St., Northcote.
 3ZGW—J. G. Fricke, 14 Gurner St., St. Kilda.
 3ZHC—G. Collings, 2 Asburton Rd., Glen Iris.
 3ZHD—G. C. F. Dillon, 4 Scott St., Beaumaris.
 3ZHG—J. Clark, 13 East India Ave., Nunawading.
 3ZHM—H. I. Murray, 45 Ballarat Rd., Maidstone.
 3ZHT—T. Cox, 2 Hampton Gr., Camberwell.
 3ZIT—T. E. Straughair, 185 Stephen St., Yarraville.
 Queensland
 4AU—B. R. Aubrey, 44 Elbury St., Gaythorne.
 4LB—A. Bockholt, H.M.P. Reserve, Private Mail Bag, Stuart, N.Q.
 4TW—C. T. Ferris, Ringtail, via Pomona.
 4ZBA—A. R. Bradley, 38 Wardell St., Ashgrove.
 4ZCW—W. S. C. West, 33 Rawlinson St., Mur-arrie.

- South Australia
 5IM—K. W. Garratt, 30 Elston St., Lockleys.
 5ZCG—D. J. Caddy, 78 Matthews Ave., Seaton North.
 5ZCP—J. S. Burns, 16 Bernard St., Findon.
 Western Australia
 6ZCC—M. L. O'Rourke, 129 Parkin St., Rockingham.
 6ZCD—D. J. Keltze, Broadcasting Station 6WA, Wagin.
 Tasmania
 7TT—T. J. Tongs, 83 Leven St., Ulverstone.
 Territory of Papua and New Guinea
 9JG—J. N. Georgiades, C/o. O.T.C.(A.), Rabaul.
 Antarctica
 0JV—J. V. Denholm, Wilkes.

CHANGES OF ADDRESS

- VK—
 1VP—E. Penikis, Northbourne Ave., Canberra.
 New South Wales
 2FS—B. C. Fleck, 30 Sullivan St., Kempsey.
 2SB—R. W. Chaplin, 31 Grace Ave., Beecroft.
 2SJ—G. A. Clipham, Newcastle and Brunswick Sts., East Maitland.
 2ABL—W. A. Easterling, 279 Forest Rd., Kirrawee.
 2ADV—C. Mc. Hicks, Stuart St., Forster.
 2AJM—F. H. Bull, 14 Lytton St., Cammeray.
 2AKQ—J. H. Lambert, Lot 4, Bocks Road.
 2ANB—R. J. Baty, 41 Lawson Pde., St. Ives.
 2ANV—T. Bremner, 23 Kardella Ave., Killara.
 2AQX—R. Grivas, 338 Roberts Rd., Greenacre.
 2AYE—D. E. Evans, 62 Todman Ave., Kensington.
 2ZBU—A. M. La Macchia, 28 Derby St., Wahroonga.
 2ZEM—E. F. Matthews, 24 Ettalong St., Auburn.
 2ZFM—B. C. Milne, 61 Russell St., Eastwood.
 Victoria
 3FW—W. A. Fulton, Lot 25, Mount Dandenong Rd., Kilalyth.
 3IK—I. K. Sewell, 72 Viewville Rd., N. Balwyn.
 3IZ—P. D. Williams, "Treetops," Kent Hughes Road, Eltham.
 3LG—J. A. Williams, 28 Mummery St., Mount Waverley.
 3PO—D. A. Miller, Lot 8, Moola St., Nerrina, Ballarat.
 3QN—P. E. Maplestone, 42 Berkeley St., Huntingdale.
 3TU—J. F. Irvine, 8 Eton Square, 478 St. Kilda Rd., Melbourne.
 3US—G. M. Churchward, 20 Smith St., Leon-gatha.
 3ABS—R. W. Sandon, 6 Hudson St., Caulfield.
 3AJO—J. R. O'Halloran, Hamilton St., Murtoa.
 3AKT—M. K. Tulloch, 131 Junction Rd., Nunawading.
 3ALU—L. E. Lloyd, Grey St., Nyahwest.
 3APG—P. J. Grigg, Lot 44, Glenburn St., Newcomb, Geelong.
 3ARH—J. B. Hawke, Day Ave., Omeo.
 Western Australia
 6HK—D. E. Graham, 108 Edinboro St., Mt. Hawthorn.

Territory of Papua and New Guinea
 9HI—L. Raebel, Station: Lawes Rd., Port Moresby, Papua; Postal: C/o. Posts & Telegraphs Dept., Port Moresby, Papua.

CANCELLED CALL SIGNS

- VK—
 2ASX—C. H. A. Armstrong.
 2AUA—M. C. Carpenter.
 Victoria
 3OB—L. T. Burrows.
 3UB—R. D. Tymms.
 3ZEY—H. A. Harris.
 Queensland
 4HW—H. J. Weatherley.
 4ZBC—K. D. Campbell.
 Western Australia
 6BY—B. R. Aubrey.
 Territory of Papua and New Guinea
 9KC—W. Bock.
 PERMITS GRANTED FOR TELEVISION EXPERIMENTS
 VK—
 SME/T—S. G. McLeon, 22 Celtic Ave., Clovelly Park.
 5ZCJT/J. E. Barker, 41 Gertrude St., Glan-dore.

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Three-Band Converter

N. CASEY,* VK9NT

HOW many of us, especially among those who have just gained their call signs, have thought and searched for some type of circuit which would give us as much bandwidth as we wished on all bands without plug-in type coils, and if possible using only one set of coils?

The accompanying circuit is the same as the converter in use at this QTH and gives a very good account of itself.

Most of the items are available out of our junk box or through disposal stores, so that all that is needed mostly is the patience and energy to do the job.

The gang is made from a b.c. three-gang condenser and after carefully unsoldering the stator plates from their mounts in each section of the gang, work is proceeded with to remove the unnecessary plates, leaving only four and these being double spaced. The same treatment is given to the rotor plates, but in this case five plates are left (double spacing, of course). The stator plates can now be replaced and aligned.

The coils are best wound with whatever formers are on hand, preferably about $\frac{3}{8}$ " diameter, and slug-tuned (although slugs are not absolutely necessary). The aerial and r.f. coils are wound by getting just sufficient turns to tune 14 Mc. with the 100 pF. condenser, and the oscillator coil to tune to the difference between the selected i.f. frequency, i.e. if 2 Mc. is chosen, as in the author's case, then the oscillator coil should tune to 16 Mc.

The primaries in each case should be wound with about 30 s.w.g.. Approximately 6 turns will be needed on the aerial coil (depending on the impedance of the feed system, etc.), whilst the r.f. should be about 8 turns of the same gauge wire.

The oscillator primary should be interwound with the secondary, and for a start about half the number of turns of the secondary should be wound on.

After the converter is made up and you have placed a meter in the B+ lead to the oscillator coil, you should remove half a turn at a time from the primary until an even plate current over the three bands is obtained.

After adjusting the oscillator primary, the aligning period starts. Starting with the 14 Mc. band, adjust C27 to 14.00 Mc. with C23 in full mesh. The dial is then swung over to open mesh and 14.35 Mc. is tuned to with the band-spread condenser (C24). Return the dial back to full mesh again and 14.00 Mc. is again retuned with C27.

This process is continued with until you have 14.00 Mc. at full mesh and 14.35 Mc. at full open mesh.

The same procedure is again carried out for 21 Mc. Adjust C28 for 2100 Mc. with full mesh and C25 tuned for 21.45 Mc. with full open mesh.

C29 is tuned for 28.00 Mc. and C26 is tuned to the h.f. end of 28 Mc.

R.f. coil alignment is carried out in the same manner as the oscillator coil. 14 Mc. is peaked with C11, and 14.35 Mc. peaked with C14.

21 Mc. is peaked with C12, and 21.45 Mc. is peaked with C15.

28 Mc. is peaked with C13 and the h.f. end is peaked with C16.

The same applies with the antenna coil. 14 Mc. peaked with C1 and 14.35 Mc. with C4.

21 Mc. is peaked with C2 and 21.35 Mc. is peaked with C6.

28 Mc. is peaked with C3 for the low frequency end and C5 for the h.f. end.

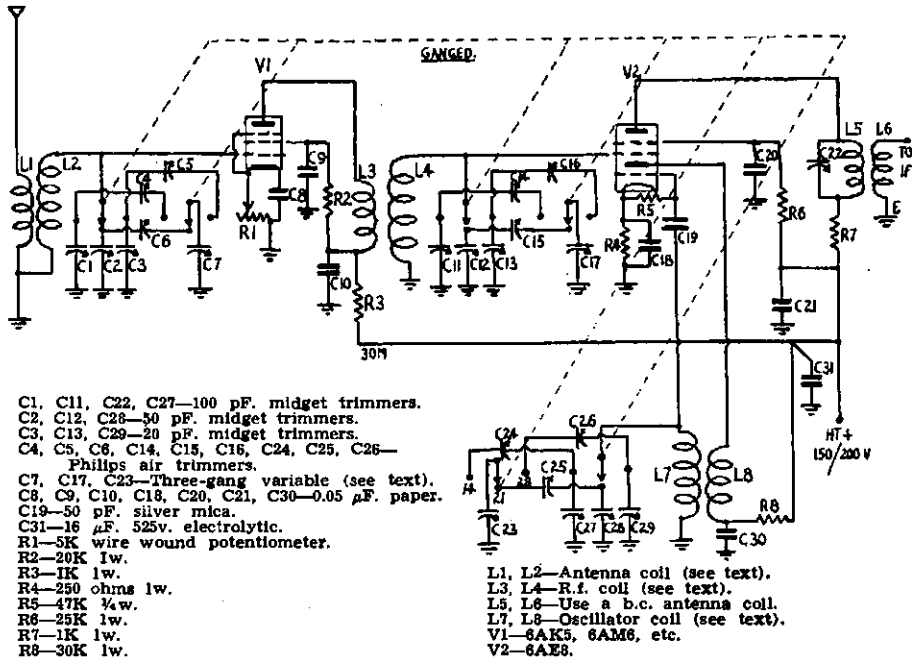
The tracking should be found to be OK, but any errors may be compensated

for with the use of the iron slugs, using the iron slugs to peak the l.f. end in each case, and remember that once a slug is shifted, then you have to retune each band.

No aerial trimmer is required, even though the original job has one it is never used, as whenever tried, the tracking of the gang is found to be true.

The output coil is tuned by the slug and C22 for optimum results. Note the connections!

150 volts is quite sufficient to run the converter and it will be found that a better signal to noise ratio will result at this voltage.



- C1, C11, C22, C27—100 pF. midget trimmers.
- C2, C12, C28—50 pF. midget trimmers.
- C3, C13, C29—20 pF. midget trimmers.
- C4, C5, C6, C14, C15, C16, C24, C25, C26—Philips air trimmers.
- C7, C17, C23—Three-gang variable (see text).
- C8, C9, C10, C18, C20, C21, C30—0.05 μ F. paper.
- C19—50 pF. silver mica.
- C31—16 μ F. 525v. electrolytic.
- R1—5K wire wound potentiometer.
- R2—20K 1w.
- R3—1K 1w.
- R4—250 ohms 1w.
- R5—47K $\frac{1}{4}$ w.
- R6—25K 1w.
- R7—1K 1w.
- R8—30K 1w.

- L1, L2—Antenna coil (see text).
- L3, L4—R.f. coil (see text).
- L5, L6—Use a b.c. antenna coil.
- L7, L8—Oscillator coil (see text).
- L9—Oscillator coil (see text).
- V1—6AK5, 6AM6, etc.
- V2—6AX8.

CQ CQ AUSTRALIAN AMATEURS DE THE FEDERAL EXECUTIVE

(Continued from Page 12)

I think you will agree that it is gratifying to know that a Member of the House of Representatives has such a keen sense of the value of the Amateur service to a democratic country like Australia and is prepared to voice his thoughts on behalf of Australian Amateurs.

Overseas magazines have been in touch with your Executive, as they have been with other Amateur Societies, and the "plea" for considered verdicts will be published all over the world on behalf of the Amateur service which so easily can be forgotten in this complex world of communications in which we live today.

In conclusion I'll say this, at the expense of reiteration. If you don't use the bands, you stand to lose them. Amateur Radio without a voice at Geneva will be a case of out-of-sight-out-of-mind. John Moyle has a job to do. He'll do it. You must support him. Under the rules of the I.T.U. he can speak as a non-voting member of a Delegation with the permission of his Delegation and the Chairman of the Committee or Sub-Committee working at the particular time. Whether he gets that

chance depends on John, and I think you will agree he is capable in every direction. How long he can stay there depends on you! If you haven't subscribed your £1, would you give it some further thought.

I hope I have given you some insight into the real dangers which beset our cherished hobby and that the time, effort and finance which has gone into this project will protect our hobby for our sons and their sons.

73,
Max Hull, VK3ZE.

NEW ADDRESS FOR MAIL TO "AMATEUR RADIO"

All manuscripts, notes and correspondence to "Amateur Radio" should be forwarded to:—

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* C/o. Dept. of Posts and Telegraphs, Rabaul, New Guinea.

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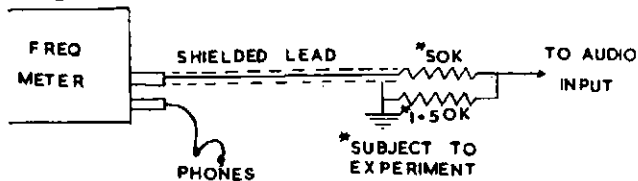
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HINTS AND KINKS

AUDIO TEST TONE

To obtain an audio test tone for my outfit, I use a BC221 frequency meter with the crystal calibrator switched in, and then by adjusting the pitch of the heterodyne against the calibration book, can get a fairly good tone.

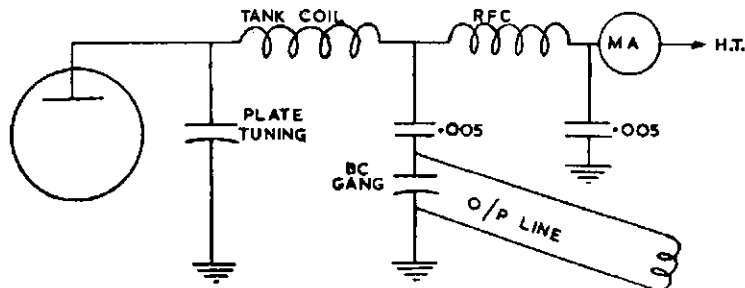


The method of coupling this to the speech amplifier or such: I have a length of shielded wire with a simple resistor attenuator at the end. The frequency meter has two headphone jacks which allows one for monitoring the tone and the other one to plug the shielded lead into.

—V. J. Kitney, VK6VK.

SHUNT COUPLED PI-COUPLED

An idea to overcome the problem of burning out r.f. chokes in transmitters is to use shunt coupling in pi-couplers. In this arrangement, I have fed the d.c. path through the tank coil, and



placed the r.f. choke at a much lower r.f. voltage as seen for the circuit.

The d.c. blocking condenser has to carry all the circulating tank current and needs to be a substantial one. Here I have used an 0.005 μ F. capacitor with good results. Also, the reactance is sufficiently low to be neglected.

The output to the aerial coupling unit is taken from across the ganged b.c. condenser as usual.

This method has been in use at VK6VK for a number of years.

—V. J. Kitney, VK6VK.

PORTABLE ANTENNAE

When operating on low power an efficient antenna is very desirable; mismatches here can make the rig useless in adverse conditions. An inexpensive antenna can be made up from P.V.C. bell wire, and any length of 300 ohm ribbon that the dealer has lying around. Most t.v. salesmen will give away any number of short bits and pieces.

I experimented with the following antennae recently on a 10-watt transmitter, and list them in order of performance:

1. Folded dipole and 300 ohm feeder.
2. Windom (single feeder won't short out in the rain).
3. Zepp (open wire feeders).
4. Dipole fed with (a) Lamp flex; (b) 300 ohm ribbon; (c) Twisted bell wire.

(All of these dipoles were useless in rain.)

5. End-fed half wave.

Ice cream sticks dipped in melted candle grease make good spacers for the dipole or Zepp feeders, and the antenna may be raised 50 or 60 ft. by slinging fishing line over a high tree. My line showed no sign of breaking after a month's vacation. Bell wire will not support much weight, so it's risky using a long co-ax feeder.

—D. L. Kinsella, VK2AXK

AWARDS

MOORABBIN AND DISTRICT RADIO CLUB Amended Rules for the Award of the HON. MEMBERSHIP CERTIFICATE

The object of this Award is to promote interest in, and friendship with, VK3 contacts. There are many active transmitting members of the club. Ask all VK3 contacts: "Are you a member of the Moorabbin and District Radio Club?"

1. To become eligible for the Award, Australian mainland stations including VK7 must contact by radio fourteen member stations currently financial at the date of contact.
2. Overseas stations including VK0 and VK9 call signs must contact by radio five member stations currently financial at the date of contact.
3. The club station VK3APC may be regarded as a financial member station for this purpose.
4. On completion of the required number of contacts, the applicant must forward to the Certificate Officer by any suitable means a list of the call signs of members contacted, to gether with the times and dates of contact and his own correct postal address.
5. After verifying with the logs of the named member stations, a Certificate of Honorary Membership will be awarded and forwarded by post.
6. If the required number of member stations is contacted for a second or subsequent time, a further award may be issued. This will take the form of an emblem for attachment to the certificate. Stations named for such an award must not include those already named for a previous award.
7. Honorary membership will allow all the privileges of full membership of the club, less the counting of contacts with Honorary Members for the award of this certificate and less the power to vote.
8. This award is not available to financial members of the club. Station operators who have been financial members must have resigned their membership in writing prior to the date of any contacts named for the award of this certificate to themselves.
9. Rules and conditions of this award may be amended by a notice of motion one month prior to being put to the vote at a regular meeting of the club. After being passed by a majority of members present, the amendments will come into force.
10. The address for certificate correspondence is: Moorabbin and District Radio Club, C/o. Wireless Institute of Australia, Victorian Division, at the current address of the W.I.A. Victorian Division, which is obtainable in call books and other publications.

D.X.C.C. LISTING

Listed below are the highest twelve members in each section. New members and those whose totals have been amended will also be shown.

PHONE

Call	Cer. Cnt- No. rics	Call	Cer. Cnt- No. rics
VK6RU	2 231	VK6KW	4 184
VK6MK	43 216	VK3BZ	3 176
VK4FJ	21 212	VK4RW	23 164
VK3WL	14 211	VK3EE	10 163
VK3ATN	28 204	VK9DB	31 161
VK4HR	12 192	VK4WF	18 160

New Members

VK5AB	45 112	VK4EJ	44 108
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C.W.

Call	Cer. Cnt- No. rics	Call	Cer. Cnt- No. rics
VK4FJ	29 246	VK3XU	48 213
VK3KE	10 245	VK3YL	39 203
VK3CX	26 235	VK5BY	45 202
VK3FH	15 226	VK6RU	18 196
VK3BZ	6 222	VK2EO	2 191
VK4HR	8 218	VK6RX	23 176

Amendments

VK3RJ	42 149	VK6KW	40 112
		VK6KW	40 111

New Members

VK3KU	63 108
-------	--------

OPEN

Call	Cer. Cnt- No. rics	Call	Cer. Cnt- No. rics
VK2ACK	6 250	VK3XU	61 221
VK4FJ	22 249	VK6MK	74 220
VK6RU	8 243	VK3HG	3 215
VK4HR	7 233	VK3JE	12 210
VK3BZ	4 231	VK3ATN	69 210
VK3WL	45 225	VK6KW	13 201

New Members

VK3AHO	76 119
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FIBRE-GLASS WHIPS

Resonance of helical fibre-glass whips may be altered by winding a few inches of magnetic recording tape around one end instead of removing part of the helix.

—D. L. Kinsella, VK2AXK.

FOR FIT PERSONS ONLY!

FOX HUNTING IN THE U.S.S.R.

In "Paano," No. 6, 1958, the Russian Amateurs' journal, there is an outline of the methods of fox hunting in the U.S.S.R. Apparently it is treated as a "States-wide" athletic contest.

Hunts are conducted on foot and there are three foxes—apparently stationary. The first fox is located four kilometres from the start; the second within three kilometres of the first, and the third within three kilometres of the second. Frequencies used are 3.5 mc., 38-40 mc., and 144-146 mc.

Home-made equipment is a must, but the accent is on athletic fitness. The contest is conducted in each State and the winners progress until a "grand champion" emerges.

DX

John C. Pinnell, VK2ZR
15 Summit Avenue,
Earlwood, N.S.W.

Last month, what was considered as good DX under different conditions, was given. The operator new to this phase of our hobby, is often bewildered on how to get started. His first reaction is to think of elaborate equipment with rotary beams, etc., as a must. This is not the case; simple gear can be used and much good work done. Many have won their DXCC with less than 50 watts and a simple dipole only 30 feet or so in height. The rx is important and must work well for it is no use trying to work DX if you can't hear them. Small rx's of 5 valves can do a good job in the early stages for they are capable of bringing in signals from any part of the world when the QRM is not too tough. If you have simple gear, give it a go. Pick a time in the early morning or of an evening when not too many local stations are active and try your luck. There is less local activity during the week mornings around 6 a.m. and if you go on 20 metres there is plenty of DX stations at the present time. Working DX depends more on the operator than on the gear. Of course a good DX operator will do better work with good gear.

NEWS AND NOTES

VK3IB, ex-VK1AC and VK0AB, sailed for Gilbert and Ellis Islands on Feb. 11. He should be active before the end of March. An application has been made to U.K. for a call sign which should arrive by the time he is ready to get going. He will be there at least two years. This information comes from Bill ZEG who will be having fixed skeds with him and also handling his cards.

W4KAC is planning a trip and hopes to be operating in May from Greece, Crete and Rhodes. (2QL).

VK8Z is very active on both phone and c.w. on the 14 Mc. band. Time about 0700 and again 1100z.

If you need BRUNI, listen at 1000z on 14 mc. for VS5AT, VS9MA and VS9MI are fairly active on the Maldiv Islands. They will be found around 14040 kc.

It is reported that VR6TC is again operating on phone from Pitcairn Island. He is on 14 mc. and starts about 0600z.

ZM6AS, in British Samoa, has just about completed his new rig and will be back on the air soon.

The calls KS4BA and KS4BB have been issued to W2NSD and W9EVI to use on a DXpedition to the Caribbean area. KS4BA is issued for Roncador Key, and KS4BB for Serrana Bank. These two uninhabited islands are located in the Caribbean Sea off the east coast of Nicaragua. Amateur Radio has not been operated from either place, and it is believed they qualify for separate DXCC country status by virtue of their distance from Swan Island, the original KS4 prefix. The DXpedition is planned to start near the end of March or early April. One report says they may be on Serrana Bank as early as March 17.

VP8BK is a rare one located on South Georgia Island, so don't pass him over as just another British Antarctic base station.

Four stations from Mauritius should help those needing the 39th Zone to complete their W.A.Z., VQ8AQ and VQ8AH are active on 21 Mc. and VQ8AL on 14 Mc., while VQ8AD is on 21 Mc. phone.

The only active station on Swan Island is W4JRD/KS4. He operates 20 metre phone using 600 watts. He will be there until the end of April.

JT1KAA is operating on 3.5 and 7 Mc. and so keeping Mongolia on the map.

ZL3DX, who operated ZL3DA, Chatham Island, is planning another DXpedition, this time to the very rare Tonga Island, VR5, Friendly Islands. If transportation funds are made available he will leave during May and stay about two weeks on Tonga.

DL0FF intends operating from the Island of Rhodes for about a month commencing July 15. ZB5A/V59 is genuine and is working from the Sultanate of Oman. VS90M should soon be operating s.s.b. on 14315 Kc. from this locality.

* Call signs and prefixes worked.
z zero time—GMT.

If you worked UA1GE/UA0, he was in Tanna Tuva, but understand he was there for only two weeks.

OD5LX, Lebanon, was very busy with a big pile-up the other morning on the edge of the 7000 Kc. band.

Guadeloupe.—There are two stations active; FG7XK with low power is on 20 and 20 metre c.w. FG7XE is quite active on 15 metre phone.

XZ2AD, Burma, should be on the air with a kw. on s.s.b. by the time you read these notes.

STATIONS ACTIVE

Stations known to be active are:—

7 Mc.: Evening, F8VJ, ZB1AU, CN2BK, QZ-9NI, XE1FV, PY7VBR, HK8FP, PY7JL, LA2SB, SL3AG, I1AIM, HB9SV. All on c.w. between 0730 and 1000z.

14 Mc. a.m. around 0700 and 2000z: FP8AP, Z3SE, 6M2GA, KC6CG, UC2KAB, UA1DZ, VS-9AO, SP3CZ, I6GN, OD5A, FMWVE, FP8AF, LX1DE, LX1KFC, HV1CN, VQ4KRL, EL5A.

14 Mc. s.s.b. 0700 and 2000z: OQ5GU, 9G1CX, UA3CR, 4X4DK, SV0WL, YN1CK, CN8JE, UA-1DZ, FD8DZ, LA6CV, GW3LLU, ET2US, ET-2BP, ZS6OY.

ADDRESSES

YK1AT—Via OK KSL Bureau.
SU1MS—Mahmud Abdul Salam, 13 Kawa St., El Daher, Cairo.
HB8GA—G. Abbes, Box 983, Ciudad Trujillo Dominican Republic.
Y81LA—Luis Andreu, Jr., P.O. Box 348, San Salvador, El Salvador.
YN1CK—Via WIEQ.
9G1CX—Box 26, Akwatia, Ghana, West Africa.
HP1GA—P.O. Box 5310, Panama, Republic of Panama.
VP2KR—Roy, Golden Rock Airport, St. Kitts, B.W.I.
HC5CL—Carlos A. Jaramillo, P.O. Box 1366, Cuenca, Ecuador.
HL2BO—Via HL2AJ, College of Engineering, Seoul National University, Seoul, Korea.
6A5TF—Fred, P.O. Box 638, Tripoli, Libya, North Africa.
PZ1AP—Arnold Polsbroek, P.O. Box 547, Paramaribo, Surinam, South America.
8V8AC—Essid Abd/Al, Rue Rekeb, Impasse Jaouapa, Maken, Tunisia, Nth. Africa.
EL8D—C/o. U.S. Embassy, Monrovia, Liberia, West Africa.
EL1K—Chester L. Hoyt, Firestone Plantation Co., Harbel, Liberia, West Africa.
TL2MEM—Mariano Echeverria M., P.O. Box 827, San Jose, Costa Rica.
ZB1USA—Bert, F.P.O. 240, New York, N.Y., U.S.A.
TF2WDY—A.P.O. 81, New York, N.Y., or via W4YHD.
FQ8AY—Box 538, Brazzaville. (2QL)
VQ2AB—Buggy, Ndola, Northern Rhodesia. (4DO)
9M2GA—Lee, Nuar, S.W. Malaya (127 miles north of Singapore).

QSL's

VQ6LQ is at present sending 2QL many of the VK boys QSL's and catching up on his back log, so there is hope for those still in need of one from him.

JT1AA cards are coming in now, and JT1YL should be here this month.

W2CTN is handling QSL chores for all these: VK2FR, VR2DA, VR2DK, FK8AT, JZ0HA, KW6CG, VK9BW, VK9NT, VQ3CF, 9G1BQ, ZD2DCP, OX3RH, FM7WU, and Z57M.

QSL's RECEIVED

2QL: CR7LU, EA6AW, EL1X, GC3AAE, FP-8AR, HZ1AB, OD5LX, OX3RH, OY7ML, UR-2BU, VQ3CF, VS9MA (7 and 28 Mc.), XZ2TH, ZD2GWS, 3V8CY. 2ZR: EA6AW, ET2VB, CE2JP, HZ1AB, GC3AAE, JT1AA, UBSAU, UC2AX, UQ2AK, UQ2AN, VQ2GW, VQ2MS, VQ4KRL, VS9AS, 3A2BT. 3AOM: HK1HV, BR819S: CN2AQ, JT1AA, KP4AAQ, PI1VB, VK0CC, VQ2GF, VS1FW, VS9AD, ZB1CR, ZB2Z, UA0LS/MM.

ACTIVITIES

3.5 Mc. o.w.—2QL: W4KAC*, KH6XT. L2022: Ws.

14 Mc. c.w.—2AMB: GC2FMV*, ESSJA*, OZ-8NJ*, ZEBJ*, CM8BF, FB8XK, FB8ZZ, BU1DR, CR9AH, FO8AU, KW6EL, UD9KAF, VQ6LQ, VU2GJ, KW8AI, XZ2TI, Y1DD, ZD6WJ, 4S-TJ. 3QL: GC2FMV*, IS1FC, CE0ZA*, OX-3RH*, SM5WN/LA/P*, EA8AP, CR5AF, FB8CJ, FB8Z, FQ8HA, FQ8AY, FM7VE, FY7YF, JZ-6AG, VQ5CJ, 3V8AG, VR1XR, P. phoney. 2Z: CN8BK*, CN8LG*, HG9WL*, HL2BO*, I1N1U*, LA4ZC*, LUBNA*, OK1AA*, OZ9AO*, PA-0FF*, SM6BTZ*, SP8KBM*, UA3AI*, UC2AX*, VU1EH*, ZB5CF*. 4DO: W*, K*, VE*, VK9*, EA3CY*, CN8BX*, F8HO*, F8JD*, FA8VJ*,

FQ8AP*, FF8BX*, G2BB*, G2DPD*, G3BHW*, G3HLX*, G3IFB*, G6HL*, G6YQ*, IJCC*, IJFJ*, HB8KM*, KC8KR*, HC4IE*, OA4FM*, OE6RP*, ON4FQ*, PA0LZ*, PJ4DA*, PY8YF*, SP8HU*, UA1OD*, UA6LF*, UA8KOE*, UA-5UG*, UA0CC*, UA0LC*, UB5BG*, UL7KA*, VQ2AB*, VQ6AB*, VS1JV*, VS6AE*, EA8CF, ET2VB, CR6AP, CR4AH, FF8BZ, FF8CC, FM-7WP, FQ8AY, FQ8HD, FY7YF, LA6PG/D, OD-5LJ, OQ5IB, VE8BN, VE8MX, VQ5EZ, VS8AC, VS9MA, VP5RA/P, UC2AR, XZ1WD, ZD2JM, ZEBJJ, ZS5SL, ZS6AY, 3V8AO, 4X4R, 4X4JU, L2022: VP9EF, U18KR, SP5AA, VP9EN, OX3RH, VO1DX, ZC4LL, LZ1AF, LA3DE, VK0CC, 9M-2FL, BERS19S: BVIUS, CN8BK, CT3AN, DL-0BH, FF8BZ, FG7XE, GC2CNC, GD2FRV, HC4IE, HS1C, HVIAD, ISAAW, SUIMS, SV-0WP, UD6KAK, VK0CC, VP5RA/P, VP8DU, VQ5GJ, VR2DK, VS8MB, XZ2TH, ZBINB, ZD-2GUP, ZD7SE, 9M2DW, 9M2FO, LA5HE/MM, LA8UD/MM, SL8AY/MM, WA6DFH/MM.

14 Mc. Phone.—2AMB: YS2SA*, ZK2AB, 3AOM: CT2AI*, CN8JE*, HC1FG*, JA5MC*, KA2CB*, VE1E1*, VU2BK*, XZ2SY*, Ws*. 4DO: Ws*, KH6s*, JA5*, CE0CQ*, CE0ZB*, KA0IM*, UB5BG*, 9M2GA*, K6G, KM6, KX6, VK2FR, VE7JR. L2001: GM3MBL, W6YET, L2022: I1ALC, FK8AC, 9M2FL, L3065: Ws, KH6, ZLS, KR6S, KX6BT, KX6BR, KAs, VK9s, VE1, EI, VE3EIO, VK2FR, KL7CMI, I1LT, HC1SU, KJ6BV, KC4UOM, KW6CE, VQ5JA, BERS19S: G3HFD, ODSAG.

21 Mc. c.w.—2QL: GC3HFE, CN2AY, 5A5TO, 2ZR: G3WKSQ*, DL3ZM*, ON4GK*, PA0DN*. 4DO: Ws, KNS, KH6s, WV6CQJ.

21 Mc. Phone.—4DO: Ws, KH6s, KA2HA, JA6BC, KR6HI, VK9NT, L2001: JA4HM, JA-6AK, KB6BH, KR6JM. L2022: KR6HI, VS1GZ.

28 Mc. c.w.—4DO: Ws, KH6s, JA3GM.

28 Mc. Phone.—4DO: Ws, KM6s, KA0CC, KX6CA.

I have received very little information on 7 Mc. activities but from my own observations and some reports it seems as though some good DX is being missed. BERS19S heard the following: DL6DE, G3MWN, HL2AC, HL2AK, KH6s, JA0MM, OH2V, SP2KBC, UA1KGC, UA0FS, UB5TV, UC2KAC, UO5AA, UQ2CC, YU1JK, W8QOH/MM. L2022: Lots of U.S. Novices, W8QOH/MM of Bermuda.

I thank W4KVX for the use of his DX Bulletin, via 2QL. 2AMB, thanks for the phone call and help. 2QL has made it possible for me to pass on much information. 3AOM, your letter and remarks much appreciated. 4DO finds the bands good in the mornings on 14 Mc. especially after the cyclone. WIA-L2022 is still on 174 countries that now rx should help you. Don. WIA-L3065, if you keep the good work up it will be no time before you have 100 countries. WIA-L2001 has been doing fine with his rx on phone, last month he got a boost with his c.w. reception, hi! BERS19S, Eric's score is now 253/244 heard and is very pleased with his JT1AA QSL card. I need the help of everyone interested in DX so please give me a few minutes of your time each month by writing and letting me know what is doing on the various bands. You may have only one item, but send it along as each little bit will help.

INTERNATIONAL INTEREST IN BRIT. I.R.E. T.V. CONVENTION

The Convention being arranged by the British Institution of Radio Engineers on Television Engineering in Science, Industry and Broadcasting is attracting great international interest, and many members and other delegates from overseas have arranged to attend.

The Convention will be held in the University of Cambridge from July 1 to 5, 1959, and delegates will reside in the colleges of the University.

Among the distinguished engineers from abroad participating in the arrangements will be Dr. Vladimir K. Zworykin (Director of the Medical Electronics Centre Rockefeller Institute, New York), and Dr. S. K. Mitra, F.R.S., M.Brit.I.R.E. (Emeritus Professor of Physics, Calcutta University).

Dr. Zworykin, who will give the 4th Clerk Maxwell Memorial Lecture during the course of the Convention, is an outstanding pioneer in the field of television engineering.

Dr. S. K. Mitra's contribution to the Convention will be particularly welcomed in view of his world-wide reputation as an authority on the ionosphere. He is the author of a standard work on this subject—"The Upper Atmosphere"—and his achievements have been recognised by his election as a Fellow of the Royal Society in 1958.

Dr. Mitra has been a Member of the Institution for many years, is Chairman of the Calcutta Section, and a member of the Institution's Indian Advisory Committee.

VHF

Frank P. O'Dwyer, VK3OF
190 Thomas Street,
Hampton, Vic.

50 Mc. BAND

JA and KR6 to the fore with E's moving into the background were the features of the last month's activity. Most Divisions shared in the JA openings to varying extent with VK7 apparently the only one to miss out. OT Adrian ZHE, with renewed interest after a couple of years off the band, starting late, finished the Ross Hull Contest with 84 contacts, then went on to use up the E's by working VK5 on Feb. 1. VKs 4LK, 4ZAK and 4ZBE on Feb. 3, missed the VK3 and VK5 opening caught by ZCH and Z2BQ after 2100 E.A.S.T. on Feb. 15, couldn't raise 4NG on Feb. 24 at 1320, but satisfied himself by working JA1, 2, 5, 0 for 10 contacts, signals to S9 between 1350 and 1600. As Adrian puts it, "most of the time I had practically the whole of the continent on my back, just what the DX hound dreams about". A couple of VK4s were on for a time and had their share.

Feb. 8, VK5BC worked JA8 in the early afternoon and Z2BQ listened to JA4 at 1900. Feb. 13, 3CI, 80 miles north of Melbourne, worked a fistful of JAs, whilst Z2CG, E.S.E. of Melb., managed four of them. Feb. 23, VK2/JA, Feb. 24 ZABR, one of the P.R.P. 100 worked 4ZBE and 4LK between 1800 and 1830 and followed up next day by contacting JA2 and 3 for six QSOs between 1227-1430. In the meantime Hughie 5BC had almost daily openings to JA during the period Feb. 20-27. The northern VK4s once again treat these JAs as locals. The gang up there have had daylight openings at least every couple of days with evening openings about every third day.

The end of the month and into March found VK5 almost daily with JA to natter to, sigs. good to indifferent. Jock Z2DG heard weak JA sigs. at 2300 on March 1, but the VK3 gang were really stirred into action at 2240 Mar. 5 when JA10 and others appeared, though sigs. were not too good. Jim ZAZY had contacts before sigs. went out about midnight. Mar. 6 Z2JN and 4ZAZ appeared on the band in VK3 to tell of their doings up north. March 8 ZL4GY (51.02 Mc.) was QSOed by David Z2AT at 2145 and was heard by the rest of the gang. This is the first VK3/ZL contact since the ZLs shifted to 51 Mc. ZL4GY reported that the ZLs were once again working the Ws. Most important, the Ws are gathering down towards 51 Mc. for these contacts. But that is not all. The Divisional notes give more detail, highlighted by the KR6 story from VK4.

P.R.P.—The P.R.P. is now operating on a reduced scale, official reporters throughout the world being limited to 100, reporting being concentrated on "propagation paths which cross the equator, and for other openings such as E and BS which accompany trans-equatorial work." VK representatives are ZABR, 3AHL, JALZ, Z2DG, 4JO, 4NG, 4ZBI, 4ZGL, 6BE, 9XK and for ZL, 1ABL. Congrats. to these fellows for their appointment, a just reward for their consistent reporting to P.R.P.

Should you work that TE path or hear anything unusual, send details to your nearest P.R.P. reporter. He will vet it against his own log and enclose it in his report if not already noted through his own observations. Remember, these fellows cannot be 24 hours on the job and you can help them out on this vital project. Definite observation is required, doubts are out, they confuse the picture. An American voice would neither indicate a W signal nor that it originated over the equator, the national prefix of the station calling would be needed to spot its location. Help these boys out, they have done and are doing a mighty job and may possibly be the deciding factor in our continued occupancy of the v.h.f. bands.

T.V.I.—First up comes from Garth Z2FA who found this series trap, which consists of a parallel resonant circuit, most effective for clearing up trouble on Channel 9 when placed in his feed line. Mounted in a 3-inch square by 1½ inch deep steel box, co-ax connectors each side, 3 turns of 16 s.w.g. wound on a pencil, tuned by a Phillips trimmer. In his case about two-thirds of the way out. This offers a very high impedance at its resonant freq., in this case about 200 Mc., but a low impedance to all other frequencies. This idea is simple, you may know what it is for and what it is; but the info. puts you approx. on Channel 9, allowing for variations in construc-

tion, and could save a lot of work in working out LC figures, building Lecher wires, borrowing meters, etc. Simple, detailed, yet effective. —30F.

NEW SOUTH WALES

Meeting, February, saw a good roll up to hear a lecture by John Z2AV on his re-building of a Command Tx to 6 mx v.f.o. operation and use of the unit as a 144 meg. exciter. Using the original 6J5 v.f.o. stage only, and by the addition of an isolator and multiplier (12A7) the rig finished with a 2E26 in the final. All agreed on the excellence of John's lecture. Details of 50 meg. coils for the Group's project converter were given and complete circuitry of the unit has now appeared in February and March issues of a well known Australian magazine, all of which the Group is justly proud.

Day Fox Hunt, Feb.—This was a really enjoyable day and most successful for some time with nine cars participating as follows: Z2BX, Z2CP, Z2CF, Z2AL, Z2PM-2ER, Z2ANF-ZAWZ, Z2ASZ, Z2OA, Z2ZAV, Z2JC and Z2BG. The run took us through Boulkam Hills, Glenhaven, Maroyla, Cattai, Sackville and Glenorie and was won by Z2PM and Z2ANF dead-heating, followed by Z2BG and Z2OA also tieing.

Night Fox Hunt, Feb.—Another good roll up with Z2AV, ZAWZ, Z2CF-Z2AL, Z2PM-2ER, Z2ASZ, Z2JK, Z2OA, Z2BX-Z2CP, Z2FC, Z2CW. The fox, Aien Z2RX and Ron Z2BG, provided an excellent signal and were run to ground in approx. only 45 minutes by John Z2AV, then followed by ZAWZ, and Z2CF-Z2AL. Congrats. to John. All then, except Kev. Z2FC, whose battery ran flat, enjoyed an excellent hot dog and tea supper by courtesy of the foxes.

April Meeting.—Will hear a discussion entitled Winch (ZOA) versus the rest (you) on noise figures and antennae at v.h.f.s. With so much thought on the subject lately, together with conflicting viewpoints expressed, this meeting should informatively settle many arguments (or start some).

April Autumn Field Day, 12/4/59.—We would like to see a maximum effort on this event, a message handling contest for home and portable stations between 10 a.m. and 4 p.m. Remember, chaps, we need many stations in the field to make it a success and as far from Sydney as possible so that country stations can participate to their full numbers. Details, rules, etc., will be given via the Bulletin and 40 metre broadcast.

April Night Fox Hunt.—On a date to be fixed at time of writing. This will be a night hidden Tx Hunt with Keith Z2JK as fox. Our new handicap rules and placing of the tx so that the beam is visible and accessible from a car will apply.

2 Metres.—A welcome is extended to new stations heard, Gordon Z2TW at Cammeray and Arthur Z2BV, Z2BU is now operating from his new QTH at Hornsby and Z2FC and Z2CW are new mobiles. Activity on the band is good and contacts between Neville Z2DR at Blayney and Z2CF and 2ANF are being made again. Dick Z2CF and his brother-in-law, Alan Z2AL, are now monitoring Explorer satellites with good signals being received. Wal 2MZ has been heard portable from his holiday location at Patonga.

6 Metres.—On 23/2/59 Adrian ZHE worked 10 JAs between 1420 and 1644 hours, our first break-through to JA this year, and we congratulate Adrian on his perseverance. Also on 25/2/59 and 1/3/59 JAs were heard. Z2MS at Greta and Z2BX are now on six mx. Righto, chaps, times us, so will see you next month and keep the wick going on v.h.f.—ZAWZ.

VICTORIA

8 Metres.—Activity on the 8 metre band for Feb. was quite low compared with 1958 and the awaited JA break-throughs only materialised on one occasion when George Z2CG and Sld 3CI managed to work into JA at mid-day. During 1958, March proved to be the best month for JA and perhaps next month's "A.R." will give details of long-awaited openings. About 14 stations were active for the Feb. scramble which resulted in a draw between Peter Z2FP and John Z2AL.

2 Metres.—Local activity on this band has increased somewhat of late, especially in view of the decrease of activities on 6 metres. Conditions from Melbourne to the country districts have been consistently good and signals to Ballarat and Moe have been S9 plus. Max Z3CW, at Ouyen, has been worked by a number of Melbourne stations and made it to Moe when he worked Z3CG at S9. Activity at Ballarat is still consistently high and during Feb. Ballarat stations worked Z2DP in Sale, Z2AB in Traralgon, Z2EA at Rainbow, 3NN at Yanac and Z3CW in Ouyen. Interstate DX from Ballarat includes 5BC at Renmark, 5GJ at Mt. Gambier and 7FF. Stan S3E should soon be heard again on 2 mx and new call signs on the band include 3VG (R.A.A.F. Station) and Kevin Z3HH. So far Ballarat stations have had no luck with Z2JO at Coolamon, but have

worked two new Melbourne stations—Ken Z3FL and Dick Z3RZ.

1 Metre.—Feb. saw the realisation of reliable two-way communication between Ballarat and Melbourne on 1 metre. Les Z3CN, who is holding up the Ballarat end of things, has installed a 48 element beam and is running 90w. to a QQE08/40 final; his rx is xtal locked and uses a cascade 6BQ7-A into a grounded grid 6Q4 in the front end. Perhaps the greatest stalwart at the Melbourne end is Jock Z2DG, who is using a QQE03/20 final running 30w., a 6 ft. yagi and a xtal locked converter using two 6BC4s in the front end. Signals have been over strength 9 on a number of occasions. Others worked by Les, either two-way or cross-band, arc: Geoff JAUX, Ian Z3EP, David Z3AT, John Z3AI and George Z3CG at Moe. Jock Z2DG has also worked Ron Z3ER, operating portable at Castlemaine.—Z3AL.

QUEENSLAND

Feb. has passed, and what a month. Many nights spent up until the wee small hours of the morning, but not without reward. Bill 4ZBE got himself that KR6AK, "Cas", and got some information out of him. 4ZBE heard, and was heard by VS6CJ, but JA QRM ruined that one, but he is still listening.

KR6AK reports as follows: "Have worked the following stations (in order) VK4NG, KH6, VK4ZBE, VS6CJ, DU1CF. Also quite a few carriers on the band and he has heard Russ 9XK, but Russ went QRT before Cas could call him" (don't pull that switch before that final QRZ, never know what DX is listening to or calling you). KR6AK offers this word of warning to all VKs. "Please do not call quickly." He has heard a number of stations he could not identify because of slurred call signs, particularly, 4DI, but because of the quickness of the call sign could not identify the national prefix. KR6AK operates on any of 30 frequencies from 50.002 up to 50.275 Mc., but can usually be found around 50.080 on phone, but would like c.w. if you can use it. Some carriers are too weak to read the modulation, but would make 100 per cent. f.b. c.w. QSOs. Look for him when the JAs are pouring in or just after they have folded.

George VS6CJ is on 50.090 Mc. on c.w. only after 1300 GMT. Next month I should have information on DU1 and DU9 activity. Hear VK4ED worked VE—congrats. There was an excellent opening in VK about two weeks ago. Only VK3 contact was 3CI. No sign of VK6—would anyone over there like a sked. 4ZBE worked 5ZAX by back scatter one dinner time. 4ZBE has worked over 200 JAs during Feb., but still requires that JA6 card for A.J.D. There appears to be hundreds of new JAs on, mainly JA1.

Local ionospheric prediction service has it that the prediction for April-May show an m.u.f. of over 45 Mc. to Europe, Egypt and Asia. Who is going to be the first VK to work all continents?—4ZBE.

SOUTH AUSTRALIA

When is the DX going to break? JAs have been heard off and on around 1230 hours on week days by a fortunate few. I understand that Hughie 5BC has been doing better than most with signals 8 to 9. Most reports from the city vary from 1 to 5. At one stage, 4HD was heard working JAs, but no sign of them here at that time.

A newcomer to the band is Neil 5ZDH. Neil uses a v.f.o. working on 50 Mc., isolating the final with a buffer. Quite a nice effort Neil, and it sounds as good as many of the v.f.o.s, whose fundamentals are 4 and 3 Mc. Neil's location is One Tree Hill and should be a good position for working JAs.

The Fox Hunt was quite a success with many lessons learnt by the participants. Seven cars took part, all loaded with gear and secret weapons. One even sported a card table in the back seat with maps and dividers. The fox, Ken 5KC, was eventually found at a hillside suburb called Skye. Col. 5ZBD and yours truly being first home, and as Keith 5MT put it, with a lot of luck and celestial navigation. Hughie 5AV actually passed within 60 yards of the fox about 10 minutes before we arrived and he eventually finished second, a very good effort. Ron 5MK eventually turned up on his motor bike and I believe he has a snoop-loop under construction for the next fox hunt.

Clem 5GL has his mobile gear going again. It was necessary to convert it to a 12 volt system, using a 3/12 in the final with Helsing modulation to the plate and screen. Bill 5HD heard testing the other night on low power. Wonder if its mobile gear? Keith 5MT has a mobile tx coming up and Rodney 5SX is building a xtal locked converter and tx for his A40.

More v.f.o.s. are coming up. Graham Z3AP has been heard testing with his and it seems quite stable. Barry Z3EB has one under way and having seen his present gear, I can well

Imagine that it will be the best made v.f.o. in VK5.

Was having a chat to Sid 5ME, who tells me that he is very keen to get going with a t.v. signal on 288 Mc. with the phone on 144 Mc. Sid is anxious to contact any locals who could receive his transmissions.

The v.h.f. meeting was a huge success and VK5 now has its own V.h.f. Group, subject to ratification by Council. The constitution was agreed upon and passed at the meeting and the ballot for the Committee resulted in the election of Barry 5ZBZ, Al 5ZCR, Col 5RO, John 5ZBA and Neil 5ZAW.

Cheers for now. See you at the next fox hunt.—5ZAW.

On Sunday, March 8, John 5DJ, Doug 5KK, and Colin 5XY, situated at the top of Mt. Lofty, established contact with Vic. 5JH, situated just south of Snowtown, on 288 Mc. Signals were received at S8 at Mt. Lofty and about S7 at Snowtown. The distance covered was about 85 miles. Only time prevented greater distances being covered. Further attempts at greater distances are to be made later.—5XY.

WESTERN AUSTRALIA

Perhaps the main item of interest this month is the opening of the 50 Mc. beacon, put on by the V.h.f. Group of Western Australia. The frequency is 50.00 Mc. and the tx runs 20w. to an 807. Identification is by c.w. (auto) and call is VK6VF. At present the station is running into a yagi beam, but it is hoped that a stacked collinear array will be in use soon. Hours of operation are limited to those that an op. can be in attendance, roughly 1600 W.A.S.T. to 0800 W.A.S.T. This does vary from day to day. One thing you can be very sure of—if you hear it, someone is around so call like the dickens. A break in the transmission means that the op. is tuning the band from 50-51 Mc. The aim, of course, is to work Africa; this should help a lot.

JA broke through again during Feb. and many stations were contacted by the VK6 stations who have been on the band. The openings so far have been as good as last year's. In one sitting, 6ZBU worked 40 JA stations in one opening. HLKA has made daily appearances with signals running for hours at a time. Also around the 49.6 plus mark several f.m. networks have been heard. The origin of these is shrouded in mystery, but one could be in Okinawa; the voices are good old Ben.

The last Fox Hunt was run by Kevin 6ZCB and Cedric 6ZBC. The fox was very cunning, hiding behind a steel bridge on the wrong (for me) side of the river. At the last Group meeting a very enjoyable lecture was presented by Wally 6LW. He showed, and demonstrated, a 50 Mc. transistor powered tx. Unfortunately, a hold up in supplies of v.h.f. transistors prevented a complete demonstration in that the final was not running. However, results with the exciter really surprised those present. One at least is obtaining the bits to get something similar going himself.

Noel 6ZBG has been absent in the East. He has now returned and can be heard most evenings with the beam on Africa and India. Persistence.

Jack 6ZBU has been "trans-portable" in Mandurah, putting a 5/9 signal into Perth (45

CORRESPONDENCE

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

AUSTRALIAN DXCC AWARD

Editor "A.R." Dear Sir,

I feel that I had better rise to the bait of VK2QL's letter in the March issue of "A.R." For goodness sake don't do away with the Australian DXCC, as I have been trying to make the grade for years and don't want to be "pipped on the post" because a few are discontented!

I am quite happy to accept the W.I.A. list of countries. It is published in the January issue of "A.R." each year, so there is no excuse for members feeling "frustrated" in "trying to assess their countries worked"—you just check off against the W.I.A. list!

The objection to the use of the A.R.R.L. countries' list by N.Z.A.R.T. for the VK-ZL Contest seems trivial—if the N.Z.A.R.T. are to run it, let them run it their way. If you don't like the rules, why enter?

Re there not being room for two DXCC awards, there is one very good reason for having an Australian version—no one wants to risk sending his precious cards overseas, and perhaps losing them in the mails when he can qualify locally. In conclusion, I can see point in VK2QL's and VK3CX's criticism of the A.R.R.L. countries' list, but I think that is all the more reason to retain the W.I.A. DXCC. (I hope you get some more bites, VK2QL.)

—W. Stevenson, VK3AWS.

Editor "A.R." Dear Sir,

Reference the letter from VK2QL in March issue concerning the Australian DXCC Award. I regret to disagree with my friend Frank in some aspects.

Let us retain the Australian DXCC Award—it's only a little behind the times and when the list is brought up to date it will be the same as the A.R.R.L. list.

miles). He also worked mobile between Pinjarra and Mandurah (50 miles)—no mean feat for 5w. and a mobile whip. Willie, the whiting, eluded Jack's line and bait, but we believe he made do with some cobblers.

6BO has almost finished the main part of his building operation and has started on his new shack. The "old man" has been having plenty of trouble from noisy power lines, and brother, we mean noisy!

Heard 6WG in Albany being called by JAS in one opening, which appeared to be general all over Australia, since VK7 was called also. 6ZBP was in the same opening.

6MG was worked from Kalamunda again on 6. Unfortunately signals were well and truly on the down grade by the time Mac was heard so the contact was not a good one.

That's about it for the month. Cheers.—6BE.

Think of the time and money you save in not having to send your hard-earned QSLs over to U.S.A. in order to obtain credit.

This is a service which the W.I.A. is performing for its members. Let us make use of it.

We, the DX minded Hams, can make it what we want by the simple expedient of telling our own elected representatives on Federal Council just what we need in the way of an Australian DXCC. Let's do some lobbying and achieve our objective.

The reference by VK2QL to the number of countries in the A.R.R.L. list is simply explained. Some time ago "QST" published the rules which the DXCC follows in deciding what is a country. They still follow these rules. The July list of 290, to which VK2QL refers, is amended from time to time when new claims are put forward. Additions to the list are notified regularly in "QST" and by WIAW in official broadcasts. The DX fraternity know of them—they even know when applications are refused, as does happen.

I'm all for the W.I.A. and its Australian DXCC—thanks to the Institute for another service to the Australian Ham.

—Alan Brown, VK3CX.

50 Mc. W.A.S.

Editor "A.R." Dear Sir,

As I, like many others, have worked all States on 50 Mc., but because I am unable to work anyone in the Northern Territory, which is a VK5 area, I am not able to claim the W.A.S. Certificate.

As there has not been anyone on 50 Mc. for some years and may never be, must I and others be penalised through no fault of ours? I worked all States but the Northern Territory in 1951 and twice since (including this year). Isn't it about time something was done about it so a few more call signs can be added to the 17 published each month?

—A. W. Rushby, VK2ABR.

SURPLUS RADIO EQUIPMENT

Editor "A.R." Dear Sir,

In the March '59 issue of the magazine there is a summary of surplus radio equipment. One of the pieces of equipment mentioned is a R/89/ARN-5A (page 8, left hand column, 4th item from bottom) and this is listed as having seven 6AG5s. This is incorrect; the tubes are 6AJ5s, or at least in the two units I have, they are.

It may be of some interest to note that this unit contains three tunable, co-axial lines, ideal for use in 288 Mc. converters.

—David Rankin, VK3ZAQ.

PROPER UTILISATION OF THOSE BANDS

Editor "A.R." Dear Sir,

Perhaps the following might create a little interest and be of assistance to the fight for the retention of frequencies for the use of the Amateur service.

Last night I had the very good fortune to hear the very fine address given by the Federal President of the Wireless Institute of Australia, Mr. Max Hull, over VK2WI. It is indeed a great pity that this splendid address will only be heard by possibly a relatively small percentage of those who profess to be Amateurs.

As one who has listened around the bands, at all times of the day and night for many years, I can fully appreciate the difficulties confronting the worthy delegate to the I.T.U. Very little assistance, other than financial, is being given by many of the Amateurs. This is well illustrated by the very poor use made of the bands, especially in conducting experiments. There are some who use the bands regularly, but unfortunately, indulge in endless inane chatter, sometimes sheer drivel, or in using their privileged position to moan about wool prices, discuss religion (especially a certain visitor), decry the efforts of those conducting emergency nets (how dare they want to keep one frequency clear), make personal attacks on others (in their absence of course), or to boost some commercial gear—quite often indulging in blatant advertising—none of these things help the status of Amateur Radio, especially when one remembers that there are interested observers taking note. How on earth can the I.T.U. representative justify the retention of the frequencies when such gross abuse of them is taking place—remember that these observers are not deaf, but very much on the alert!

If you want to retain the existing frequencies, give your I.T.U. representative your active support by using the bands and conducting worthwhile experiments, with of course a moderate amount of individual natter.

—Ian Drysdale, Assoc. Member VK3 & VK2, Assoc. N.Z.A.R.T. and R.S.G.B.

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NOTES

FEDERAL

AMENDMENTS TO THE FEDERAL CONSTITUTION

Under the direction of the Federal Council of the Wireless Institute of Australia, the Federal Executive hereby gives notice that it is intended to alter the Federal Constitution (1947) of the W.I.A. as follows:—

Interpretation: By adding the following—
"Fiscal year" means one calendar year commencing 1st March.

Para. 9: By deleting the words: "Commencement of the Federal Convention" and inserting in lieu thereof the words "Conclusion of the fiscal year".

Para. 15: By deleting the word "annual".

Para. 21: By deleting the words from "annually" in the third line to "attend" in the fifth line and inserting in lieu thereof the following: "at least 30 days prior to the conclusion of the fiscal year and shall take office not later than 60 days after the conclusion of the fiscal year or at the conclusion of the Federal Convention, whichever is the sooner".

Para. 28: By adding at the end of the first sentence after "Federal Executive" in the fifth line the words "who shall lay down their terms of reference".

Para. 24: By deleting all after the word "possible" in the 13th line.

Para. 40: By deleting the entire Paragraph 40 and inserting in lieu thereof the following: "At the conclusion of the Federal Convention or within 30 days of the conclusion of the fiscal year, the Federal Treasurer shall present for the approval of the Federal Council statements of receipts and expenditure, balance sheet and Auditor's Report for the preceding year, together with a budget of expenditure anticipated in the ensuing year".

Para. 56: By deleting the words "by a special levy on all full members of each Division" from the second and third lines and inserting in lieu thereof the words: "from the Divisions by a special per capita payment based on all full members of each Division".

Para. 72: By inserting after the word "Divisions" in the first line the word "voting" and by deleting the words "voting in the negative" in the fourth line and inserting in lieu thereof the words "abstained from voting".

T.V. OPERATOR'S CERTIFICATE OF PROFICIENCY EXAMINATION

The Australian Broadcasting Control Board has notified the following candidates that they were successful at the examination for the Television Operator's Certificate of Proficiency held in Sydney, Melbourne, Brisbane, Adelaide, Perth and Hobart on 9th December, 1958:

Sydney: N. L. T. Ancher, R. J. Aylett, A. A. Bell, E. Berlage, S. J. H. Brown, R. M. Catchpole, M. Cowan, E. J. Eckert, M. J. Johnson, R. A. Lapham, C. K. P. Louer, K. W. Marsden, A. Pearson, J. G. South, H. B. Stockwell, P. Sallinger.

CONTEST CALENDAR

Compiled by W.I.A. Fed. Contest Com.

★

NATIONAL FIELD DAY:

Comments on a change of date and on holding extra field days during the year would be appreciated.

OZ C.C.C.:

Date: May 3-4.
All Bands.

REMEMP. DAY CONTEST, 1959:

Dates: Saturday, 15th August, to Sunday, 16th August, 1959.
Duration: 1800 hrs. E.A.S.T. to 1759 hrs.
Rules: As for 1958.

VK-ZL DX CONTEST, 1959:

Dates: Phone—1000 GMT, Saturday, 3rd Oct.—1000 GMT, 4th Oct.
C.W.—10th Oct.—11th Oct., 1959.

Melbourne: S. B. S. Backhouse, R. K. Burbridge, W. A. Fulton, P. C. Gorman, R. E. A. Grigson, R. D. Haggith, A. R. Henley, I. R. Israel, E. M. Kennewell, G. P. Lee, A. J. Lyons, R. C. G. McGowan, B. E. Martin, W. S. Morrison, F. J. O'Callaghan, R. R. O'Neil, J. T. Pease, A. Robinson, B. S. Swinburne, M. P. Titchener, F. G. Westaway, A. Zylewicz.

Brisbane: W. H. Marshall.

Adelaide: B. G. Hammond, B. M. Hall.

NEW SOUTH WALES

The February monthly meeting of the Division was held as usual at Science House, Gloucester Street, Sydney, on Friday, the 27th, at 7.45 p.m. Members were looking forward to this gathering as a lecture on Single Side Band was on the agenda for the evening. The attendance was in the vicinity of ninety, including some guests in the form of country members, also YL Amateurs. The lecture, entitled "Cheap and Easy Side Band" was very well conducted by Dr. Leo McMahon, VK2AC. Leo is well known to all through his consistent appearance over the years on 14 Mc. s.s.b., and of recent months he has been very active on the 7 Mc. band with the proverbial "Duck Talker".

The lecture covered many aspects of single side band, the systems used, and those systems which appeared to be of easy construction and most practical for the Amateur of today who intends to take the new approach to Amateur two-way communication in the form of s.s.b. Dr. McMahon's address, with its consistent insertion of humorous remarks, brought widespread applause and laughter which made the lecture very absorbing. Members went away from Science House very much enlightened and full of enthusiasm. Stan 2EL ably assisted the Dr. in the form of "black board rubber-outer". Many pieces of equipment were on display from portable to home units. Much interest was shown in this gear at the conclusion of the meeting during the usual "coffee break".

A vote of thanks to Leo for his very fine lecture was moved by our old friend, Wal 2SA, and Science House reverberated with one of the greatest applauses given in many months. Everybody went home with the same idea in mind, and it should not be long before many more s.s.b. signals are heard on the various Amateur bands in this State.

The usual business was conducted after the lecture and it was brought to the members' notice by the Chairman that the fourth Friday in March, being Good Friday, Science House would not be available for the March general meeting. Council are endeavouring to obtain a suitable hall for one night during this week if possible. Because of this, the Annual General Meeting will take place on April 24 at Science House. Information from the Secretary leads us to believe that the membership in VK2 is rapidly approaching the 1,100 mark, which is very gratifying indeed.

A suggestion by Max 2OT on his 2WI broadcast a few Sundays ago that members turn out their pockets for small change and forward same to the Secretary as an extra donation to the rapidly approaching close of the I.T.U. Fund brought forward something over £20.

Some very good suggestions were brought forward by Joe 2JR regarding color slides and tapes for future lectures to be done for the benefit of country members in the form of club groups, etc.

The meeting closed at 10.35 for coffee and a general ragchew of events during the evening.

HUNTER BRANCH

The February general meeting was held as usual and the following boys were lucky enough to be in attendance to hear a well delivered lecture by Maurie Findlay, VK2PW: VKs 2CS, 2AS1, 2ZDL, 2RJ, 2AFA, 2ZL, 2SF, 2AEE, 2ZDF, 2QB, 2ZK, 2AQR and associates Sutherland, Hall, Bailey, Jackson, Roberts, Rugg, Gray, and Stobbs. Apologies were received from 2XT, 2ARV and MacLaughlan. Maurie certainly went to town with a clear and precise talk interspersed with colour slides of equipment and circuitry. With the excellent array of lecturers and their subjects I am more than surprised that there are not greater attendances, particularly from those close at hand. One quarter of those who attend, invariably come more than 14 miles. The same applies to the social get-togethers at Bill 2XT's tavern on the fourth Wednesday of the month.

However, getting back to the point, Maurie was sincerely congratulated for his oratory and information and I am sure the mobile seed has been sown.

Sid 2APS spent some time in Newcastle and visited some of the locals. Congrats to Mac 2ZMO on attaining his Z call; Mac has not long returned from a holiday down south.

Bill 2ZL and Bob 2AQR, with their spouses, took a quick trip to Wal 2AXH at Terrigal to see what the ZLers had done to him. However, Wal looks bigger and brighter than ever. Worked Rodney 2CN, who was on his mobile 7-watter, quite a good signal Rodney, but Pop 2AHL got you better; at least he was more generous with his report. Let's hope that Stan 2ZDL has found the trouble in his 144 mc. rx; Stan told Stuart 2ZDF that his signal was playing tricks which no respectable 144 mc. signal should do over such a short distance and thought it must be the rx. Little did he know that the Prince of Franksters, Gordon Sutherland, was turning Stuart's beam round and round. No flowers by request!

By the time you read these notes our annual meeting will be history and maybe there will be a few new names in office. Next meeting, John 2JU, your I.T.U. Representative, will be here demonstrating his stereophonic equipment. If you have not sent in your donation to the I.T.U. Fund, here's your chance to square your conscience. See you there at the University of N.S.W., Tighes Hill, at 8 p.m. on the 10th. Of course, Bill will again be host (mine and yours) around the billiard table on the 22nd.

VICTORIA

At this particular time when the frequency allocation fight, to be conducted at the forthcoming I.T.U. Conference, is just around the corner, you would expect members to be interested in finding out what it is all about, but such does not appear to be the case. This is evidenced by the fact that only 24 turned up at the last meeting to hear our Federal President, Max Hull, give an address on tape on this particularly important subject.

Admittedly the night was wet and there were other attractions such as the Fair to keep people away, but our frequencies are our life blood and unless we put more effort into keeping them than others are putting in to take them away from us, then the results must be obvious.

The upsurge in the use of radio for every conceivable purpose has been so great over the last few years and the pressures so high for more and more frequencies, that the allocation of these frequencies is becoming a tremendously complex task. The job was allocated to the International Telecommunications Union who operate on a world-wide basis and in turn have to make their decisions on the claims lodged by the users of all countries. Our Federal Executive is doing a tremendous job on our behalf in this matter by raising our voice at Governmental levels where the resolution of these things is started, but they need our support in a big way. Not the lukewarm effort we displayed at the last meeting. The captain of any team must have the support of his team mates if he is to stand any chance of winning and that's where we come into the picture.

No doubt a tremendous amount of interest is being displayed in these things as is evidenced by the support given to the I.T.U. Fund which was started to finance our own representative in the person of John Moyle in attending the Conference, but it needs much more than this to win the day. It needs effort, constant effort on the part of all of us. We must use our bands, attend our meetings, and generally get fired up for the cause. Yes, I know, it's very difficult sometimes to justify in our own minds the effort this takes, but we must do it. We simply can't afford to leave it to the other chap any more, otherwise one sad morning we are going to wake up and find that our diffidence has cost us our bands. Don't kid yourself that this can't happen because although the A.R.R.L. and R.S.G.B. will most likely hold the allocations in their zones through their well substantiated claims, there is no guarantee that this time we, in Zone 3, will automatically obtain the same

NEW ADDRESS FOR MAIL TO "AMATEUR RADIO"

All manuscripts, notes and correspondence to "Amateur Radio" should be forwarded to:—

P.O. BOX 36,
EAST MELBOURNE, C.2,
VICTORIA.

benefits. This is borne out by what happened at the last I.T.U. Conference when we missed out rather badly. On that occasion we had no representative and relied on the generosity of others to state our case.

This time it is up to us to a large extent and if we back our representative to the full, there is every chance that he will be in a position to influence the issue to our advantage. If we don't use our hands we stand to lose them. This is fundamental, and what proof are we giving that we really need our present allocations? Take a look around the bands sometimes. Others do and become vocal at the lack of activity displayed. How many chaps have had licences for years and never been active? You would be surprised if you knew. Officialdom and frequency seekers have eyes and hands the same as we have and this is not the sort of thing that wins friends and influences people to our way of thinking.

We have plenty of evidence to prove conclusively that we need our bands and can put them to far better use than most of those who would deprive us of them, but what are we doing to prove these points? Yes, I know, there are active groups here and there plugging away doing their bit, about 1,500 blokes have contributed to the I.T.U. Fund and we are endowed with a solid core of enthusiastic workers of the calibre of Max Hull pushing our case, but theirs is a voice in the wilderness without amplification. We need all the Amateur fraternity to be lending their weight to the cause, not the willing few. In this way the willing few will be spurred on to even greater efforts and we could really go places.

The average chap does not appreciate how disheartening it can be for an office-bearer in an organisation to be left on his own and not have the active support of his members. When it is all boiled down, this matter of frequency allocations is not something that affects only the upper strata of the Institute as some chaps seem to believe, it affects all of us even posterity if we like to look that far ahead.

It should be quite clear then that unless we can find time to throw our weight behind the wheel and take a keen interest in what is going on, the cause which has been so carefully built up to its present state is going to be lost. Maybe not entirely but to what extent—who knows.

Therefore resolve to get into this business. Find out the facts by listening to our Federal

President's address. This shouldn't be hard because it is recorded on a number of tapes and will no doubt be available to groups to hear. It will also probably be broadcast over 3WI and should appear in the magazine, so for goodness sake make it your business to hear it. It will open your eyes to some very interesting facts and if taken to heart will be the means of obtaining that united effort which is essential if we are to advance and justify our existence.

Remember, there are not nearly enough frequencies to go around and most of those seeking them have loud voices and stiff backing. At the moment the Amateur organisation is a recognised service for the purpose of frequency allocations and we must keep it that way. This state of affairs has been mainly due to the efforts of the A.R.R.L. and the R.S.G.B. With the pressures that now exist it is too much to expect that these organisations can fight our cause any longer and we must stand on our own feet. Executive has done its part most ably by obtaining an accredited representative to accompany the Government team to the Conference. It is now up to us to give them the necessary backing to give substance to their arguments.

Don't say you haven't been warned. The writing is on the wall and if you want to keep your bands, then you must give your active support to the utmost of your ability. There is no alternative to this I am afraid, so get cracking!

New members admitted at the meeting were W. J. Hewitt (3PH) and A. F. Nickson (3NB).

The next monthly meeting of the Division is the Annual General Meeting. There will, therefore, be no lecture on this occasion.

EASTERN ZONE

Activity in the zone is very lax at present. What about it boys, don't you remember we have a zone hook-up on Sunday at 8 p.m. on 3650 Kc. Believe Ron 3PR is rebuilding the rf. generator in an effort to cure t.v.i. The 2 mx gang still appear to be active, including 3ZAB, 3ZCR, 3ZDP, 3TH and 3ZD. Reg 3ZCR is going for the full ticket. David 3DY is home building and filling in spare moments constructing an 813 final.

NORTH EASTERN ZONE

Things very quiet up this way with not much activity reported. 3AGG now moved into his

new shack complete with beam motor, electrical indicators and what have you. A very nice set-up if I may say so. Brian 3ASF now has a quad in the course of erection and in due course hopes to be amongst the DX on 20 mx. Like to welcome to the Ham fraternity 3UW at Bandiana and 3ZGI of Shepparton, while a newcomer to the Zone is 3FN at Mangalore. Sid 3CI is off on another jaunt to Gippsland and I suspect it is for fishing.

Most news of the month comes from Kyabram where 3AHO has a Sterba curtain, a rhombic for 10, 15, 20, and a t.v. antenna surrounding the QTH. Bill has been getting good results on 10 mx during the afternoon, 15 mx treating him very well as he has worked and confirmed 100 countries for his DXCC (confirmed) in the last six months. This is really good as many of us have been struggling for years to obtain the confirmations for DXCC with little results. Bill tells me that the rhombic is really OK on 10 and 15, but the

W.I.A. SOUTH WEST. ZONE CONVENTION

will be held at
GEE LONG

on

11th and 12th APRIL, 1959

A welcome is extended to all those interested to attend. Activity mainly will be centred on 3.5 and 7 mc. and v.h.f. Hotel and dinner bookings must be made not later than one week prior to Convention—10/- deposit for hotel booking.

Further information is available from Geelong Amateur Radio Club members and Sunday morning VK3WI Broadcast.

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Sterba is the best on 20 mx. I must add that the input to Bill's rig is only 10 watts. Now that IS rubbing it in. A new rx adorns the shack and the s.s.b. rig is consistently used.

Only thing from Wang, way is that Jim JJK concluded his swap deal successfully and my offer of bottle tops was ignored. Associate Jim Harrington contemplating buying a new car. Wonder if the mobile gear for the bush fire net will have a place in it?

Members are advised that the address given in the notes for the zone correspondent, North Eastern type, is a little out of date. The correct address is JJC, Park Street, Tatura, and now I expect to get a little information by mail. (Due notification of a change of correspondent on a separate sheet of copy, will effect the necessary change.—Ed.)

Ken 3KR please note. Film can arrive every Tuesday from you or Keith, both Hams, both in Benalla, so I expect Benalla news for next month, or else.

I would like to hear from the President and the Secretary of the zone also, understand the Secretary is a long way from a post office—about five yards, so please, a few lines on your activities. I'm on the phone, too.—3JC.

GEELONG AMATEUR RADIO CLUB

The main item of club news for April is, of course, the S.W. Zone W.I.A. Convention. This is to be held on 11th and 12th. For those not able to listen to VK3WI on Sunday mornings, here, briefly, is the programme.

Saturday, 11th.—Check in at the club rooms at the rear of the Congregational Church, Gheringhap Street at any time during the afternoon. Geelong stations will be on the air to "talk-in" mobiles throughout the afternoon, operating on 3.5, 7, 144 and 288 Mc. The dinner will be at the club rooms at 6.30 p.m. with the meeting to follow at 8 p.m. Ladies who attend the dinner and do not wish to "sit through" the meeting are invited to watch t.v. at 3BU's studio.

Sunday, 12th.—Those taking part in the h.f. (3.5 Mc.) and v.h.f. (144 and 288 Mc.) tx hunts are to assemble in front of 3BU's studio in Gheringhap St. at 9.45 a.m. Sealed maps will be available for those who have any doubts about reaching the hidden tx's unaided. These tx's will be on from 10-11.30 a.m. At 11.30 we tune into the W.I.A. news and lunch is at 12 o'clock.

The assembly place for lunch and the afternoon events is at the Eastern Gardens. A portable station will be on the air from the location should anyone require directions during the morning. An interesting programme has been arranged for the afternoon including an all-band (3.5-30 Mc.) scramble and a v.h.f. scramble (50-288 Mc.). Mobile a.w.'s. have not been forgotten, neither have the ladies and harmonics. Afternoon tea is timed for 3.30 with the distribution of prizes, to close the show, at 3.45 p.m.

It has been suggested that the v.h.f. boys hold a meeting during the Convention to discuss the use of frequencies within the v.h.f. bands. However, more information on this will be available on the Sunday morning broadcast prior to the Convention.

Club activity on Wednesday evenings recently has centred around the receiving side of Ham Radio. Several v.h.f. converters are being built following a discussion night on the subject. Rx's for the lower frequencies were fully covered at a later meeting. 3ALG gave a very interesting talk on an efficient t.r.f. rx, 3SY told us of the British Racal RA-17 rx, 3ABT had a few words on the current trends in building Amateur rx's and Eric Coxall had some really good information on Command Set modifications.

Syllabus items for April: "Transistors for Amateur Use" will be the subject of a lecture on April 8 by Ron 3AYB, and tx hunts will be held on 1st and 29th. See you all at the Convention.—3ABT.

QUEENSLAND

TOWNSVILLE

Quite a considerable number again turned up to the monthly meeting. A lively discussion took place on the various reports given. Our publicity officer, 4PF, outlined the various ways in which he intends to bring before the public, via newspaper articles, the doings of the local Amateurs and the Amateur body as a whole throughout the world. Had a piece in the local paper during recent cyclone, which was also mentioned over the air in the news session. Keep up the good work, Frank, don't let the interest wane.

It was decided to appoint a liaison officer between the Club and the official body of the W.I.A., 4RW being appointed to this post after many stirring addresses given in his favor for his previous services in keeping the Northern

boys in the limelight. (Sorry boys, I belong to the Blue Ribbon Society, no 807 next meeting.)

The technical officer, Graham 4BX, mentioned the local furor caused by a modulated carrier on 500 Kc. and woe betide the culprit if he found. Glad to report the local Amateurs have been absolved from this interference.

John 4DD, the librarian, staggered along under a load of books for the boys to choose from. He will need a trailer before long. George 4TQ offered back copies of radio publications for use and disposal. John is grabbing some for use in the library.

Two old members rejoined the club, namely 4EL and 4LD. Hope to see you both at the next meeting and give benefit of your experiences. The Z boys are really having a field day on 50 Mc. and could not care less for the lower frequencies to gain a full licence. But wait till conditions fade and then there will be a weeping and gnashing of teeth as they try for c.w. Bill 4ZBE quite proud in working a KR8, but bemoans the fact the JA would not let him work VS6. He has heard VK8 too, but so far no contact. 4ZAK and 4ZAW are also busy ragchewing, helped out by Vern 4LK who patiently draws them along in the pursuit of higher frequencies. Bob 4CR just returned from Sydney on leave. Believe 2ALY lost his favorite seat in front of the t.v. set while Bob was there.

Heard that Colin 4CE has moved from his old QTH and now causing local QRM in Townsville. Alan 4BE back at work after sojourn in the South. Alan 4PS trying hard to co-ordinate his various jobs—radio club, moon watch and couple of others in running his business. Just as well Alan you are single, an XYL would soon stop your various activities. Bert 4LB quite happy chasing DX on 14 Mc., but wishes he were on the other bands when he listens to the locals doing their stuff on them. Charlie 4BQ looking forward to Easter holidays to finish his tx. Wal 4RU and Ed. 4WH not yet on the air, but should be very soon. Don 4PW resigned from Railway Department; no longer can I send him memo re loss of black diamonds. Taken up private business in Mackay at Service Station. You will be sorry, no more 40 hours per week, daylight to midnight every day in future, hi!

Following forwarded by 4ZW of Far Northern boys. A great number of the local stations have been conspicuous by their absence this month. Heard Claude 4UX belting Basils (4ZW) says one night about transistor preamps. Claude has been transferred to Townsville. Alex 4MA, I believe, has been sunk by that tin dredge they have out there. How about coming on the air Alex and let's know you are still alive? Bert 4BP, with his 125w., flattened my rx one night when he checked in to the W.I.A. emergency net. A very good signal Bert. Harry 4HO, the milkman from Mossman, is still having trouble with microswitches; pulls the switch, no h.t. Arthur 4SM has his 813 perking on 14 megs, works Ted 4MH daily, earbashing, telling about the big uns that got away.

After a long absence, Roy 4AX put his rig on the air, reckons he may as well use his call as everybody else does; got a bit of trouble in the modulator, though. Young Bob 4TK, from Innisfail, getting corns on his typewriter fingers, don't know what he is doing, remember, Bob. I want the 1,000,000th copy autographed. Have heard c.w. signals going between 4TK and 4ZW, getting their hands or should I say wrists in again. Basil has two budding Hams on the go, so has to practice the Morse so that he can keep up with them. Sir Vernon 4LK still listens on 8 mx, won't work the Japs though, says he had them; try working them on 2 mx Vern! Vern has a theory, a high pressure system over the Tasman low over the Central of Australia, and the Southern States pour in on 8 mx. Seems to work, too.

SOUTH AUSTRALIA

The last meeting was a dual affair, Annual General Meeting with all its trimmings, followed by the usual monthly meeting, and it was very pleasing to see the large number who attended, indicating a good interest in the straight administrative affairs of the Division.

It may, or may not, have been a coincidence but the only visitor there was a spy from VK3, a pal of Pincott's, by the way, that lead to darker thoughts on the matter, none other than David 3ZAG, and strangely enough he was seen in the company of Fanny 5PS, so it looks like Fanny is also suspect.

Anyway we cannot do better this month than to quote the President's report complete, which Brian 5CA delivered in his usual style, being as follows:—

Gentlemen,

It is my privilege as President of this Division to present the Annual Report, which is a summary of the activities of the Division for the fiscal year ending 28th February, 1959, and which incorporated the reports of the Honorary Secretary, the Communications Officer, and the QSL Officer.

Membership.—There has been another slight increase in membership during the year in both Full and Associate grades, the figures now being 267 Full members and 166 Associate members, making a total of 433 compared with 385 last year and 350 the year before. There are 81 Full members and 39 Associate members located outside the metropolitan area.

Council.—Following the 1958 Annual General Meeting, members of Council appointed the following officers—President: B. W. Austin, (5CA); Vice-Presidents: L. F. Brice (5OK) and E. C. Daw (5EF); Treasurer: H. E. Vivian (5FO); Minute Secretary: L. F. Brice; Divisional Sub-Editor: E. C. Daw; Federal Councilor: R. Richards (5DO); Technical Officer: E. A. Barbier (5MD); Membership Organizer: L. Duncan (5AX); Operator of the Official Station SWI and Institute Representative on the Moonwatch Committee: G. M. Bowen (5XU). W. W. Parsons (5PS) remained the Public Officer, and N. Coltman was again appointed Associate's Representative.

Mr. J. C. Haseldine (5JC) was co-opted to Council and was appointed Honorary Secretary. During the year Jim Vivian resigned as Honorary Treasurer and Clem Appleby (5ZBV) was co-opted to Council to take Jim's place.

Finance.—The financial position of the Division is very sound, due mainly to the close watch on the finances kept by the Treasurer, whose report will be given separately.

Wireless Institute Civil Emergency Net.—The net has now been in operation for over a year, and a number of practices with various E.F.S. centres have been held. Aerials have been erected at seven country E.F.S. headquarters and are ready for use in an emergency. In January, during the bushfire in the Victor Harbour-Goolwa area, the net was called upon for assistance and communication was established between Goolwa and Adelaide and maintained for a period of seventeen hours.

Jim Sullivan (5JK) resigned from the W.I.C. E.N. Committee due to ill health and the position of Chairman was filled by John Bulling (5KX). Jim did a great deal of work on behalf of the net and it is not too much to say that without him there would have been no W.I.C.E.N. in this State.

Advisory Committee.—This Committee functions under the Chairmanship of H. M. Brown, one of the local Radio Inspectors, and its duty is to advise Amateurs of any breach of the regulations, rather than have official departmental action taken. The Institute has 50% representation on the Committee.

Contests.—The Federal Contest Committee was again supplied by this Division and consisted of Messrs. G. Bowen (Chairman), R. Richards (Contest Manager) and Messrs. R. Richards (5RR), L. Clifford (5LC) and R. Galle (5QR). They will be laying down their burden and the members of the Committee will be supplied by another Division.

Official Station.—The weekly broadcasts have been maintained throughout the year on each Sunday morning at 10 on 7148 Kc. These are carried out by Gordon Bowen (5XU) and the programme is relayed on 50, 144 and 288 Mc. Norm Coltman regularly gives notes to Associate Members during the broadcast.

A.O.C.F.—Classes in electronic theory and Morse Code have again been conducted by Messrs. John Allan (5UL) and Bruce Bussen-schutt (5OR). The 1958 class started with 21 members, of whom the majority passed the P.M.G. examination. The 1959 class has got off to a good start with 17 students.

I would like to congratulate the successful students from last year's class and to thank the lecturers for their efforts.

Disposals Committee.—The Committee consists of Messrs. Barbier, Vivian and Austin, and they have been active during the year on your behalf. A contact has been made with a firm in London and it is hoped that disposals gear will become available from this source as well as locally.

Test Equipment.—Members are reminded that the Equipment Officer, E. A. Barbier, holds a Cathode Ray Oscilloscope, Modulated Oscillator and a Phiscope, all of which are available on loan to members, and in addition he will test any valves which are brought to him. Equipment borrowed should be returned as soon as possible, to prevent others waiting.

T.v.i. Committee.—Mr. Ray Tuck (5BT) is Chairman of the Committee and members may seek advice on t.v.i. and b.c.l. problems, and have measurements made on their equipment by contacting the Committee.

Magazine.—Mr. E. C. Daw is Divisional Sub-Editor of the Magazine, and he does a fine job with the Divisional notes. He is always anxious to obtain news items of interest for the monthly notes as well as technical articles. During the year this Division contributed several articles for the magazine and I trust that during the next twelve months those of you who have items of interest will forward them to Comps.

The v.h.f. notes were supplied by Neil White (SZAW).

Silent Keys.—During the year Doug Whitburn passed away. Doug was one of our earliest members and served the Institute in many capacities. To most members he is associated with our Buy and Sell nights, and they have, in a way, become a memorial to him. To his widow and to his three children, we extend our deepest sympathy.

Lectures.—Five lectures on various technical electronic subjects were delivered during the year and in addition a special meeting was held at the Physics Department, University of Adelaide at which a number of brief talks were given on radio and electrical theory. The other monthly meetings were taken up with two Buy and Sell nights, two Picture evenings, a display of members' gear, and the Christmas Social.

To all the lecturers, and to Messrs. Parsons and Coltman, who conducted the Buy and Sell nights, I tender my thanks.

Associate Representative.—Norm Coltman has done this job for several years, bringing to Council's notice many things of particular interest to our Associate members. Unfortunately, he is unable to continue in the position in future and I would like to take this opportunity of thanking him for his many hours of work.

Communications Officer.—Mr. J. Kilgariff (SJT) continued as Communications Officer and has handled all inter-Division traffic during regular weekly schedules. He reports as follows: Messages handled—Outwards: 18 messages, 323 groups; Inwards: 45 messages, 1,458 groups.

QSL Officer.—George Luxon (SRX) has been QSL Officer for many years. This service is one which is appreciated by all members, and our thanks go to George for the quietly efficient way he handles it.

General.—This year has been a very busy one for the Institute. Council members generally and, in particular, members of Committees have spent many hours in the performance of their duties, and to them I would like to express my appreciation.

W.I.C.E.N. and the Satellites have brought much favourable publicity for the Institute.

The notes in the "Advertiser" are still supplied by Warwick Parsons in spite of the occasional dearth of news, and I would like to thank him for his efforts on our behalf.

My first year of office has been made easy by the co-operation and assistance, not only of Council members, but of all members of this Division.

Finally, I would like to express my gratitude to the members of Council for their confidence in electing me to the Presidency, and to thank each member for his loyal support and guidance during the past year.

Needless to say the report was adopted, as also was that of the Treasurer who dazzled us with figures, but once again informed members that as a result of the healthy state of finances no membership increases were contemplated.

Next month we will bring you up-to-date on the new Council personnel and the officers for the year; space will not permit at this juncture to enlarge any further.

WESTERN AUSTRALIA

At the last meeting we had the pleasure of renewing acquaintance with Uncle Dave, W2APF, who is on a world tour. Dave addressed the meeting in his own inimitable style. Following on, we were addressed by George 8GH, our patron, who has just returned from a tour of Japan and the U.S.A. Both talks were very much appreciated by all.

Present also at this meeting were two of our country members—Francis 6WD and Bob 6ZBY. Francis went on the next day visiting 6BE and then 6WL in Brookton. Unfortunately Francis had car trouble all the way home, suffering some damage to the internal works of the vehicle, due to a most unusual fault.

6KW, Federal Councillor for this Division, has already left for Melbourne and Sydney. During his stay he will attend the Federal Convention of the Institute in Melbourne. One item submitted by this State is that the next Convention be held in VK6 during the Empire Games year, 1962. It is realised that some considerable amount of finance must be con-

tributed by this Division to compensate the other States, but we think it should be worthwhile. Financially, we must remember that VK2 and VK3 contribute most of the fares to the Convention held in Melbourne; the extra we will have to put in will not cover what has been subsidised by the larger States during the last 35 years. Incidentally, the last Convention to be held in VK6 was the second one in 1925. Present members 6AG, 6BB and 6WP, were all present at that Convention, all in official capacities.

A new meeting place has been found for the general meetings in the main Trades Block of the Technical School. This was necessitated by the demolition of the Annexe buildings to make way for the Freeway for "That Bridge".

6GB and 6ZBU (at present tram-bound in Mandurah) continue their nightly Owlhoots, this time all on 50 Mc. Getting past the cross-town natter at 45 miles.

6HC and 6TK can be heard scheduling nightly on 3.7 also. Don't hear much of you these days, Terry.

Mal 6SM has really got it bad on the DX bands. He can be heard nightly on 10 or 15 metres. Believe Mal has passed the century and very nearly has the required number of QSLs. Nice going for 12 months or so of operation.

News is scarce this time. Not much doing at present, so will give it away for this month. Cheers.

TASMANIA

NORTH WESTERN ZONE

Hello, chaps! Yours truly at his typewriter once again. Another month has slipped by and it's time for these notes once more; I seem to be always scratching notes together for the zone. Our last zone meeting, in the form of a night of instruction, was held on March 3

HAMADS

1/- per line, minimum 3/-.

Advertisements under this heading will only be accepted from Institute Members who desire to dispose of equipment which is their own personal property. Copy must be received by 8th of the month, and remittance must accompany advertisement. Calculation of cost is based on an average of six words a line. Dealers' advertisements not accepted in this column.

DISPOSAL: Prop. Pitch Motor. 2 Selyns, Transformer to suit, both lot for £15. 2 mx Tx and Rx, both xtal controlled, built around a 3-6 meg. Command Rx as an i.f. Also in same unit, d.f. equipment for 80 mx Tx hunt. Complete with xtal mic. and 300v. 125 ma. 240v. a.c. 8v. d.c. power supply, no speaker, £17/10/0. 829B, £2/10/0. Double spaced variable condensers suitable for split-statoring, 110 pF., 10/- each. 3 elements for 10 mx beam, £2 the set. 3 elements for 15 mx beam, £2 the set. Ring UM 7221 (Bus.) for further particulars. R. Yeats, 28 Elizabeth St., Clayton, Vic.

EXCHANGE or Sell: Triplet Signal Generator, Model 1632, 100 kc. to 120 mc., crystal calibrator, output meter, etc., with instruction book and circuit diagram, for Communication Receiver in good order. Cash adjustment if necessary. What offers? J. Rintoul, 11 Cintra Street, Ipswich, Qld.

FOR SALE: BC348 Rx with p.s. and spkr., £30. No. 11 Trans., works well, £5. Power trans., meters, etc., cheap. Want 22 or 122 Trans. Fisher, Fairview Av., Glen Waverley, Vic. UL 2428.

FOR SALE: Front end for Amateur Receiver, r.f. stage, bandspread, switched bands 3.5, 7, 7-11, 14 and 21, 28 mc. Only had few hours use. £12 or offer. M. A. Jones, 6 Powell St., Mt. Gambier, South Aust.

at the usual QTH. 18 chaps turned up to both absorb and radiate knowledge. A lecture by Peter 7PF had to be postponed owing to a misunderstanding, but I guess we will hear that at a later date. Questions were asked for and duly answered by an appointed panel. A goodly talk on Regulations was delivered by our Secretary. Another of those colossal suppers was partaken of and enjoyed by all. Many hands made light work of the washing up too. A very small quantity of junk was disposed of and the evening ended with small groups gathering all round the meeting room and having the inevitable ragchew over their pet subjects and aversions.

A tx hunt (two in fact) was held on Feb. 22 with yours truly, TTT, operating the hidden "source of annoyance". TJO was first to show up on the first run, locating the hiding place by pulling down the antenna and following it into the bush. Signal reports were better with the antenna on the ground! A second hunt was provided after dinner, with associates Alan Baptist and Ray Schulze making a very quick catch. New associate Geoff Sharp was third in. Good work, Geoff! Afternoon tea was shared with the flies and I think a good day was had by all. I also believe there is to be another hunt organised before the weather breaks for winter.

What do you know chaps, Sam 7SM has got that last State, so has now (W.A.S.) worked all States.

Max TMX has got his new rig in operation using about 60w. on all bands, I think, and is getting some very good reports using controversial screen modulation, too. You ought to see the modulator, it will fit into any decent-sized coat pocket—mike as well; seems to save that extra power supply and the usual costly modulation transformer also.

Don't forget the next general meeting will be on April 7. (Thanks for double spaced legible copy, Terry. Greatly appreciated.—Ed.)

FOR SALE: Imported Panda PR120V Transmitter, 120w. input phone, 150 c.w., 2/807s parallel output pi-net to co-ax. outlet. Band switched 80 to 10. Completely enclosed in solid steel case, filtered leads, t.v.i. proof, carries maker's service, £285. This is not a mini-mitter but the full rated job. FS6 Transceiver, modified to crystal operation on 40 metres, and to plate and screen modulation, complete with vibrator power supply, phones, mike, cables, etc. £20. Inspection and enquiries invited. E. C. Daw, Box 44, Gawler, S.A.

FOR SALE: Tx-Rx Type 3 Mk. 2, complete with carry-case, perfect working order, £25. Universal Taylor 90A Test Meter, 40 ranges covering AC, DC, resistance, capacity, decibels, size 8" x 5½" x 4", £7. Photax Professional Photographic Dryer (flat twin sided 24" x 18" rotatable) AC 200-250 volts, thermostatic control, with glazing plates, chrome plated stand; perfect, unmarked, as new, £25. Gnome Master enlarger (35 mm. to 2½ x 3½) with extension column, base board and masking frame, as new, £25. A. Swindon, 87 Brighton Rd., Elwood, S.3, Vic. XA 1432.

SELL: 150 watt shielded 6146 pi final Tx with Gelooso v.f.o., 6146 AB1 modulator with compressor on same chassis. Heavy duty power supply A & R Transformers. 866s, voltage regulated v.f.o. and modulator screens. VR tube keying. Complete in two units. All new components, no junk. Circuits to buyer. Offers in vicinity of £100 to P. D. Williams, Kent-Hughes Rd., Eltham, Vic.

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MAY, 1959



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EDITORIAL



THE VALUE OF CONFERENCES

There is nothing as valuable to an institution as its ability to hold regular conferences, whether it be in the form of meetings of members, at a technical level, or at an administrative level. It is only by such means that the requirements of the members of any kind of organisation can be properly discussed and policies affecting its operation determined. This applies to clubs, associations, institutions, business enterprises—in fact to any group of people who form themselves into an organisation to carry on any kind of pursuit whether it be as simple as a sports club or as complicated as an institution with widely spread branches or divisions as in our own Wireless Institute of Australia.

At Easter time, during March this year, the Federal Council of the W.I.A. met around the conference table in Melbourne to discuss and determine many matters which directly concern the licensees of the Australian Amateur Radio Service, short-wave listeners and the general members of the Institute.

The results of the discussions, which covered a particularly broad field of the activities of Amateur Radio operators, were determined by direct representation of members throughout Australia through the office of the Federal Councillor who attended from each State of the Commonwealth on behalf of the members in his Division. Such discussions and determinations would be quite impossible by any other means than a conference. It is only because the delegates can actually meet each other and convey their Divisions' requirements in detail that makes it possible to arrive at satisfactory conclusions to problems that inevitably

must arise in an institution as far flung as the W.I.A.

On the occasion of the Conference this year it was more important than ever before that the Federal Council meet at the conference table, for in August commences the Extraordinary Radio Conference of the International Telecommunications Union in Geneva—a Conference of the highest administrative level in our modern world of communications and one which could have far reaching effects on the Radio Amateur Service not only in this country but in every country in the world.

Such are the problems of engineering the radio frequency spectrum on an equitable world wide basis that the possibility of reaching satisfactory conclusions would be completely and utterly beyond the realm of feasibility if it wasn't for the fact that the countries of the world hold a conference. The representatives to an international radio conference directly represent the requirements of their country around the conference table and it is only by this means that any sort of agreement can be reached.

To many who take no interest in the administration of their club, association, institute or other body organised to protect and perpetuate its activities, a conference may seem a boring procedure. But if there was a simpler means by which the same results could be achieved, the funds of such organisations would long ago have been channelled elsewhere.

In the case of international radio conferences the cost runs into astronomical figures but a better solution than a "conference" has never been devised.

FEDERAL EXECUTIVE.

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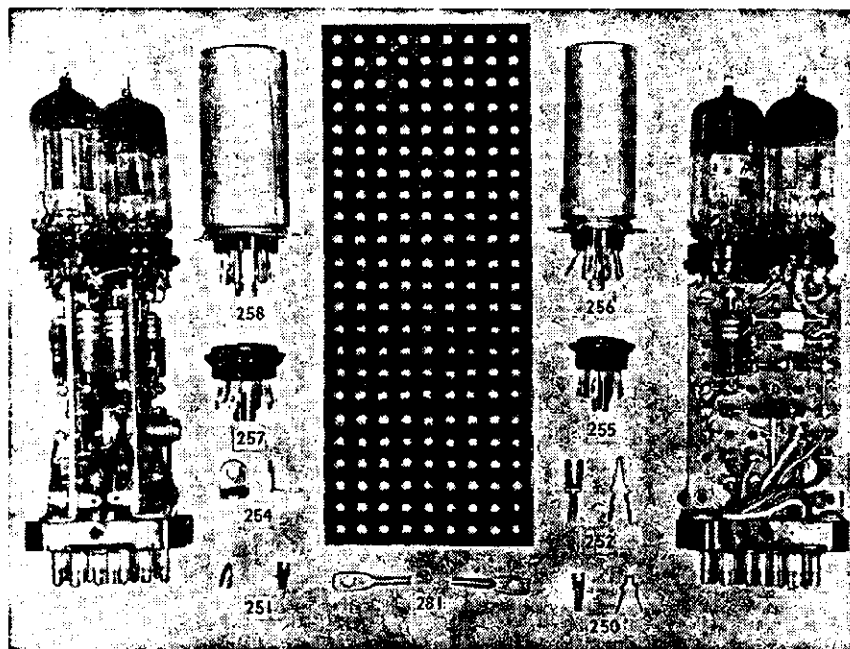
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SIMPLE SIDEBAND*

PARTS THREE and FOUR

LESTER EARNSHAW, ZL1AAX

THE PRODUCTION OF S.S.B. How to Eliminate One Sideband and the Carrier

It is a very easy matter to balance out the carrier of any modulated signal and confound those who insist that a.m. is envelope modulation. (Believe me, there are many who do. I found that out after I wrote Part 1). Fig. 1 shows a circuit which is known as a **balanced modulator**. If you look closely you will see that it is identical with a push-push circuit with which we are all familiar save that in this case the tuned circuit in the plate of the tubes is tuned to the same frequency as that of the grid. You may amuse yourself any old time trying this out on your a.m. rig so long as it has two tubes in the output. If you put the thing on the air you may be surprised to find that you have double sideband suppressed carrier. It is not proposed though to discuss d.s.b. suppressed carrier in these articles, so let's pass quickly.

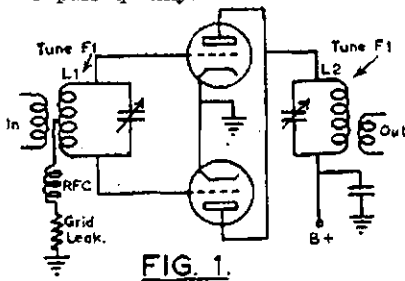


FIG. 1.

The carrier may also be suppressed in diodes, either of the tube type, or of the simple germanium. These are merely connected up in the push-push arrangement we used with the triodes. So the suppression of the carrier offers little difficulty. Indeed, it is simpler than the process of modulation itself, so have no fears on that score.

Removing the unwanted sideband is a different story. It cannot be balanced out as is done with the carrier. This is unfortunate for this would indeed make sideband simple.

There are two methods mainly in use for suppressing the carrier. One method used by telephone companies and Amateurs is the filter method. This may consist of high Q circuits used something like a wave trap. Actually, it's just a little more difficult than that but the principle is identical. The wave trap may take the form of crystals; it may consist of low frequency i.f. transformers, or as in the Post and Telegraph Department, on their carrier circuits, it may use toroidal filters. Whatever the means, the end is the same; the one sideband is filtered off. The carrier may be removed in the same way or it may be removed with the balanced modulator. The filter system is a good one and once constructed seldom requires adjustment. It is not easy to construct though. The various components need very careful adjustment to obtain pleasant quality. The

sideband suppression may be made near perfect at the output of the filters, I will have more to say about this latter, later.

The other method, and the method I propose to discuss first, is that known as the **phasing**. In this system the audio is divided into two components, usually at a low level, and the phase of one is shifted 90 degrees in relation to the other. Likewise, an r.f. component is divided into two and the phase of one shifted 90 degrees in relation to the other. These four components are then mixed in the balanced modulator which at the same time suppresses the carrier and Bingo! the job is done.

What happens in that little old balanced modulator is very easily explained with a little chalk, a blackboard and a couple of vector diagrams. If, though, I am to get through this course without those, sufficient if I say that the one sideband cancels out. There are some things you need take for granted and unless you are prepared to get stuck into the maths. book, this is one of them. To digress—would you be any better off if you knew where the light went when it went out?

The phasing method is perhaps the simpler method available to Amateurs who would construct their own equipment, for it does use more readily available components. The quality should always be excellent if reasonable design practice has been followed. As against this, phasing rigs require more frequent adjustment and the sideband suppression at the output of the balanced modulator cannot be made as good as that from a filter rig. Subsequent amplifiers, though, will, in all cases, degrade the suppression so that the unwanted sideband is attenuated by about 35 db. in both cases. Therefore, as far as unwanted sideband is concerned, there is little to pick and choose from in regard to the two methods. This is often a fact which is overlooked yet easily substantiated merely by looking up the third harmonic distortion percentages of various amplifier tubes. At the best, you'll find these around the 35 db. mark.

In a previous article I said that once you got hold of Donald by the neck and peered down his throat, you'd be surprised at what little mechanism there is to cause all the quack. This you will truly realise when you have followed me through the block diagram and circuit, in this article.

Beginning with the mike we come to the audio pre-amp. This may well be ordinary circuitry perhaps borrowed from the a.m. rig, though it is an excellent idea to use a form of audio filter to limit the audio response. This should also be done in a.m. circuits of course, but is not. The same is applicable to s.s.b. Three triodes are a very common pre-amp. arrangement, but any other configuration may be used.

The audio is then fed into a transformer or cathode follower so that the impedance is lowered to somewhere around 500 ohms. This figure is necessary to match up the usual type network available. The next portion of the diagram is known as the **audio phase-shift network**. This network shifts the phase of the two components which are presented by the transformer and about which I am going to say little. Instead I refer readers to the excellent articles written by Noel Southwell, VK2ZF, in "A.R." (August, September, and October, 1957), which cover the matter very well indeed.

A little about phaseshifting in general may not go astray at this stage for I do find that not much is generally known about this subject. If we connect a condenser across a battery it will be found that there will be a sudden rush of current flowing from the battery into the condenser and this high surge will create a voltage drop across the internal resistance or reactance of the condenser which in turn means that though there is a high flow of current in the condenser, the actual voltage there is low. But when the flow ceases the voltage will be high. This then means that when the voltage is high, the current is low, and when the voltage is low, the current is high. These two therefore are out of phase. The same is true of an inductance but in a reverse sense. There the voltage leads the current.

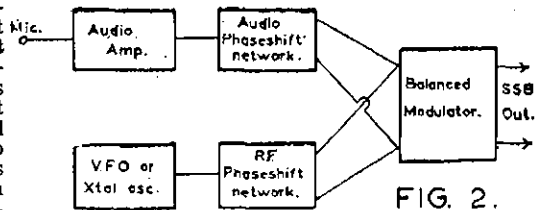


FIG. 2.

A Block Diagram of a Phasing Type Rig.

From this it may be seen that either capacitance or inductance may be used to shift the phase relationship of a voltage and current and this is quite true. Any condenser or inductance will give a phase shift. It is merely a matter of sorting out the condenser or inductance that will give you the required shift.

Getting back to our simple sideband, we arrive now at the balanced modulator in which the carrier suppression and mixing take place. I will give a practical circuit of this later.

Meanwhile, we must have a source of r.f. and this we obtain from a v.f.o. or crystal oscillator. As we did in the audio circuit so do we now divide this into two outputs, shift the phase of one 90 degrees in relation to the other, and then feed both into the balanced modulator. This r.f. phaseshifting may be accomplished much more easily than was the case with the audio because we are dealing now with only one frequency. Whereas in the audio we had to hold the phase constant over a band of frequencies, now we are concerned

only with one frequency at a time. When you install an element behind the radiator in your antenna system, by detuning this element you shift its phase by a factor something like 90 degrees and make it into a reflector. Conversely, when you detune it 90 degrees in the opposite direction you make it into a director. Thus, from this we learn that merely by detuning a tuned circuit that is coupled not too closely to a source of power, so do you alter the phase of the voltage induced into that circuit. And that is the method I propose to use here. There are other ways: You may put a condenser in one leg and an inductance in the other of the two r.f. circuits and accomplish your shift that way, but the method I am using simplifies the modulation of the r.f. for this must still take place of course. You must remember at all times that s.s.b. is a.m. with the carrier and one sideband taken out.

Look now at the circuit diagram of Fig. 3. Into the step down transformer we feed our audio from a pre-amp. The phaseshift network requires an unequal input (ratio 2:7) to get equal output. We adjust this with the pot. P1. Then we have an ordinary amplifier tube which has a pot. in the cathode circuit to adjust for different audio outputs from the two tubes. Then come the two 6:1 step-down transformers. These two transformers deserve special mention for it is most important that they do not create phaseshift. You have gone to all the trouble of buying or constructing an audio phaseshift and you must not now destroy this. The coil must have ample core area so that it does not saturate under any condition of operation. Cathode followers may be used in place of the transformers but the transformer is simpler and by careful design may be made to shape the audio characteristics. The two 0.005 μ F. bypass condensers keep r.f. out of the windings.

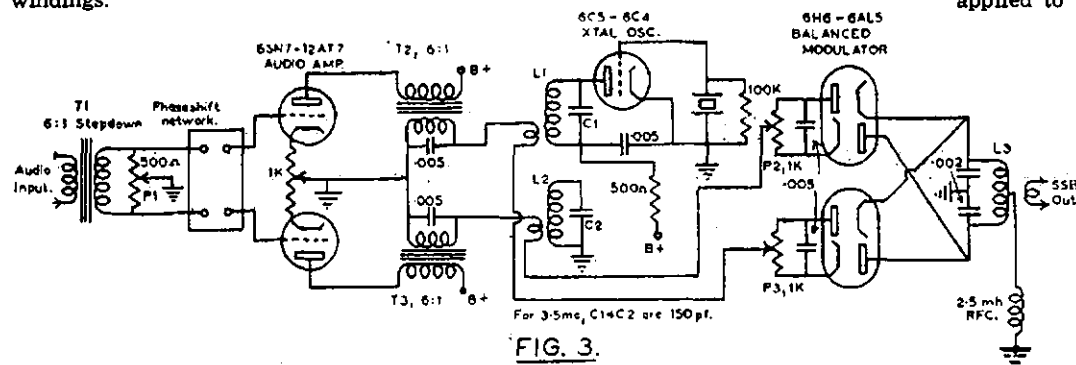


FIG. 3.

No doubt you have already noticed that the transformer outputs each go through a link winding to P2 and P3 at the input to the balanced modulator. L1 is the plate coil of an ordinary crystal oscillator, but well might be the plate coil of a buffer from a v.f.o. or may even be used without the tube and instead link coupled to a Geloso signal shifter as was done in my case for some time. L1 and C1 are merely a source of r.f. and it matters little where the r.f. comes from. If you have a discerning eye you may have noticed that L2 and C2 is not coupled to anything. According to the diagram you would be right, but in practice this coil is coupled to L1 in the manner some-

what similar to the two coils in an r.f. transformer. L2 and C2 is the under-coupled tuned circuit mentioned earlier which is detuned to obtain phase shift.

For 80 metre operation L1 and L2 may be each wound on $\frac{1}{2}$ " formers. C1 and C2 may each be 150 pF. and the two circuits grid dipped to 3.8 or thereabouts. The two coils are mounted so that nothing comes between them or within 1" of them and one is placed $\frac{1}{2}$ " from the other. The links are each 6 turns of hook-up wire. But these two coils must not be inadvertently coupled to L3 or any of the output stages. If there is any coupling between L3 and either L1 or L2 you will not balance out the carrier. P1 and P2 are the pots. which balance out the carrier. You move first one for the null, then the other. Return again to the first and so on.

The balanced modulator is a kind of push-push arrangement as mentioned earlier. Keep lead lengths to its output coil equal and the coil away from surrounding objects. L3 may take any form that strikes the fancy so long as the wire each side of the centre tap is exactly equal. With the condensers shown there will not be many turns. Grid dip the coil to your crystal frequency and you are in business. The link may have two turns of hook-up wire.

This then is the whole means of producing our s.s.b. signal. A 6AG7 output tube tacked on behind and you are in business. T1 might well be the output transformer of an ARC5 (or Command receiver). Some of these receivers have transformers with both low and high impedance outputs. Place say 100 volts of a.c. across the primary and measure the output voltage from the secondary taps until you get the correct ratio. I would not suggest experimentation with T2 and T3 though, for various tests here showed varying

amounts of introduced phaseshift and this must be avoided.

If you construct your own network, use only high stability resistors for tests here showed that in three months ordinary components, through absorbing heat and moisture, changed value by as much as 20%. This amount of change will mean that you are on d.s.b. in a big way.

If you use a v.f.o. instead of a crystal oscillator, you must adjust L1 and L2 each time you shift frequency. This may be overcome to a certain extent by connecting a small two gang condenser across the two coils and tuning this to the new frequency. It is the difference

in tuning between the two coils which must remain constant.

The alternative is to generate the sideband of say 9 megs and then feed the output from the balanced modulator into a receiver mixer valve. By feeding a 5 meg. v.f.o. from say an ARC5 (Command transmitter) into the injection grid, your output i.f. frequency may be the sum (20 metres) or the difference (80). Now your adjustments need not be altered and secondly, if you use voice control, the crystal oscillator and the v.f.o. may be left running and the mixer circuit switched. This will prevent "tails" as the oscillator dies and will also prevent all sorts of blurps in the receiver.

Lastly, do not underestimate this transmitter. I used exactly the same thing for six months or more, using a Geloso v.f.o. driver link coupled to L1. Driving a 6AG7 into an 813, I worked all W prefixes plus KL7s, KH6s and others. This was done on 80 metres.

CIRCUITS PERTAINING TO THE GENERATION OF S.S.B. AND OTHER CONSIDERATIONS

Fig. 4 is the complete circuit of the audio line-up in use at this station. I mention that I have built this circuit in many different rigs now and have found it excellent in all respects. You will find that it is completely free from "bugs" so long as normal wiring precautions are observed and just so long as you use it as it is. Many, to whom I have given the circuit, have introduced little "frills" of their own and then have wondered at the poor reports. For example, if you indiscriminately bypass the cathode resistors you not only completely alter the shape of the audio bandpass, but you give the amplifier more output. To get distortion-free output it is necessary that you have one volt of audio for every 10 volts of r.f. applied to the balanced modulators. If

the balanced modulators give insufficient output to drive the following stage, use further r.f. amplification, not more audio amplification.

No doubt you have often noticed that some stations are harder to "tune-in" than others. Assuming the difficulty is not due to receiver adjustment, it may well be that there is a good reason for this. Your audio phaseshift network is designed to pass only a certain band of frequencies such as from 300 to 3,000 cycles, with not more than 1.5 degrees of error. Frequencies above or below this will not be attenuated on the unwanted sideband to lesser or greater extents, dependent on the frequency. Consequently, you will be producing double sideband at the low frequencies and as the two sidebands are, at those frequencies, only cycles apart, you are going to get a peculiar "roll over" effect and of course the phase distortion one always gets with double sideband without carrier unless special detectors are used. This is why—no doubt you have noticed—we use 0.001 μ F. coupling condensers and low value grid resistors. The 0.0015 μ F. from the grid of V2 (Fig. 4) to ground restricts the top end to

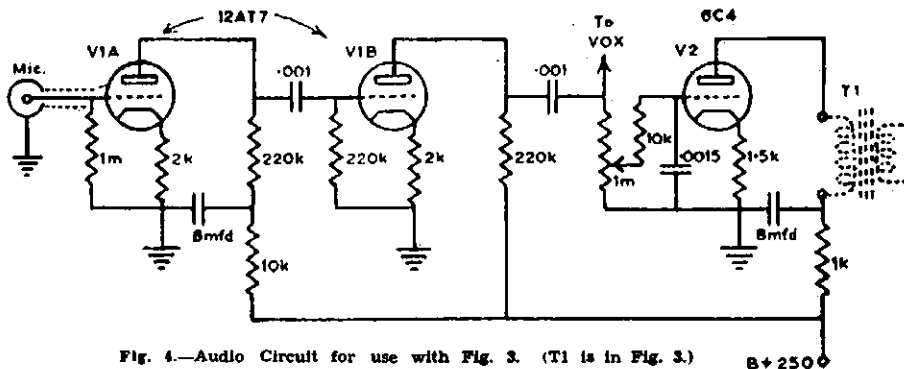


Fig. 4.—Audio Circuit for use with Fig. 3. (T1 is in Fig. 3.)

limit the bandwidth of the signal. A.m. enthusiasts could do worse than to adopt this circuitry for use in their audio pre-amp stages. They would find a greater freedom from hum and a restricted bandwidth.

If you would further restrict the audio, you might use the filter of Fig. 5. Note that this must be used after a 500 ohm line and be terminated in a 500 ohm impedance. These requirements are satisfied in the s.s.b. circuitry shown.

In the interests of simplicity, Figs. 1, 2 and 3 do not make provision for switching sidebands. All that you need do here is to reverse either the two leads to the primary of T2 (T3 will do if you so choose) or the two secondary leads.

Reversing the secondary may re-introduce carrier, therefore it may be better to do your switching in the primary. If you open the primary of this transformer so that no audio can get to the transformer you will have double sideband. Wind a little carrier in with the pot. P3 and you will have a.m. Actually, this is not amplitude modulation as such, but phase modulation. However, it will sound the same and that is the main consideration.

In case your crystal should stop oscillating I would suggest that you put a 1K resistor bypassed by a 0.005 μ F. condenser in the cathode of the 6C4. If the crystal "flops out" the tube plate will dissolve rather quickly. From experience gained here, if the plate dissolves, you are finished with that tube!

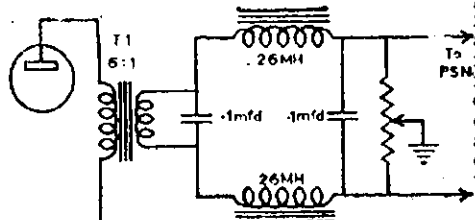


Fig. 5.—Audio Filter restricting bandwidth, 300-3,000 ohms.

Fig. 6 shows the circuit of an r.f. amplifier which may follow the balanced modulator. This amplifier will give several watts' output and is sufficient to drive the final I will give in a later issue. In dealing with r.f. amplifiers that are designed to amplify r.f. signals without carrier or with car-

rier but in a linear manner, there are one or two points I will make. These are very important points and are the cause of more frustration to those who build their own exciters than anything else I know.

- (a) The amplifiers must be extremely stable.
- (b) As above.
- (c) As above.

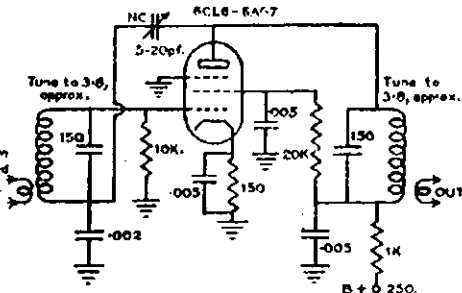


Fig. 6.—Neutralisation may not be necessary with good layout.

I repeat this to show just how important it is. To give you an idea: If your amplifier is not stable you may not be able to balance out the carrier. Also, you may generate a carrier with or without modulation on a frequency far removed from the operating frequency. A friend of mine who was operating on 40 metres caused QRM to shipping channels on 800 metres! When your carrier is balanced out there should be no indication of output of any sort, not even with a diode field strength meter coupled close to the final. Incidentally, next month I will give the circuit of a suitable carrier indicator. In addition to self-oscillation at low frequencies, amplifiers must be free from parasites. Parasitics, apart from producing signals perhaps 50 kc. each side of the intended signal, may cause a hum not unlike v.f.o. hum in a.m. Alternatively it may cause frequency modulation due to feedback to the oscillator.

Your amplifiers must be properly loaded, otherwise "flat-topping" may occur. Just as Inland Revenue Dept. is a nice name for Tax Dept., so is flat-topping a nice name for splatter! It is even more important to load your s.s.b. amplifier than it is your amplifier. What happens is that when a signal is applied to the grid the plate current in the final goes up. If the load is not sufficiently high the plate current is not able to rise further, yet the signal at the

grid does so. The top of the signal is squared off in the plate circuit and you get a square wave. A square wave is composed of an infinite number of harmonics, and . . . well, you should be able to work that out for yourself

The amplifier I have shown should run Class A, which means that it should never run into grid current. It is designed for Class A operation and should stay that way. The coils, etc., are exactly as for a.m. and no further comment.

Next month I will endeavour to give the adjustment of the phasing type rig. The adjustment will mostly concern those which use the twin coil system of obtaining the r.f. phaseshift but if you separate the oats from the chaff, you will find that it applies equally as well to all phasing type rigs.

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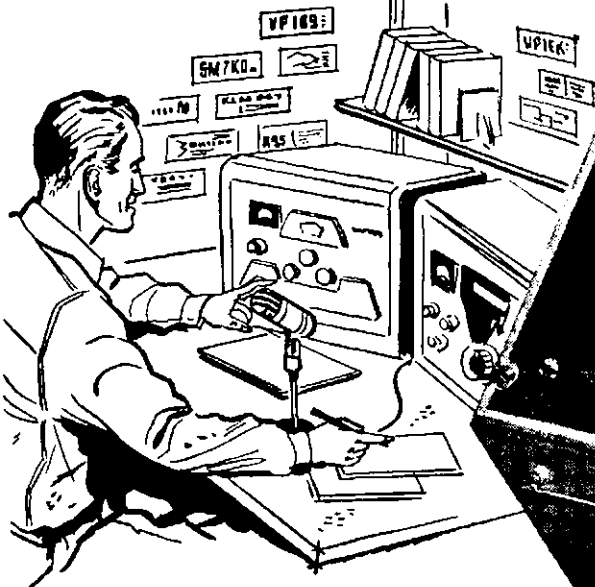


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Solid State Radio Frequency Amplifiers

PART TWO

C. S. RANN,* VK3AAK

PARAMETRIC AMPLIFIERS

IN the first article of this series a description was given of the operation of a maser solid state amplifier. At the present stage of the art it would be rather impractical for any independent experimenter to undertake the construction of a maser amplifier due to serious practical difficulties such as the use of liquid air. The amplifier to be described in this series, however, is well within the bounds of Amateur construction; furthermore, this type of amplifier is only in the initial stage of development so Amateur experimenters could perhaps contribute some useful ideas.

The amplifier is referred to as a "parametric amplifier," "reactance amplifier" or a "MAVAR"—a recently coined acronym for "Mixer Amplification by Variable Reactance." The original idea was suggested as long ago as 1916, however the present types of amplifiers have only evolved within the last few years.

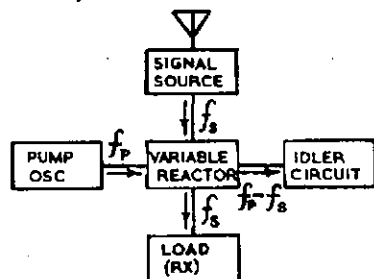


Fig. 1.—A Typical Parametric Amplifier Circuit.

The amplifier is shown diagrammatically in Fig. 1 and Fig. 2. There are three tuned circuits; one circuit is tuned to the pump oscillator frequency as in the maser, another circuit is tuned to the signal frequency, and the third circuit is tuned to the "idler frequency", the purpose of which will be described later. The three circuits share a common reactance, shown here as a condenser. This reactance is called a "varactor" (variable reactance) and is the heart of the amplifier. The varactor must have a non-linear characteristic, i.e. if it is a condenser, the non-linearity exists between the charge on the condenser and the voltage across it. If the varactor be an inductance, then the non-linearity exists between the flux and the current through the coil. The most convenient varactor at present appears to be a back biased diffused junction silicon diode. The capacity of such a diode varies with the applied back bias voltage due to the change in the width of the depletion layer at the junction of the diode. For examples of suitable diodes, see "QST", Feb. 1959. It should be pointed out that the diodes used in u.h.f. mixer circuits rely on non-linear resistance characteristics and in general, no gain can be had from them in parametric amplifier use.

The pump oscillator, as in the case of the maser, provides power which is converted to the signal frequency and provides amplification. The amplifier can exhibit negative resistance when operated in a certain way, this leads to amplification by regeneration. Operation by a different method leads to an "up converter" which can show a useful gain without resorting to regeneration. Amplifiers have been constructed showing gains of 20-30 db. and noise figures of about 1 db.

HISTORICAL DEVELOPMENT AND RELATIONSHIP TO A MODULATOR

An explanation of the reason these amplifiers show gain would involve a digression into the Fourier summation of the various frequencies involved. I will try, however, to give a description using simple modulation theory. This approach is actually similar to that of the early investigators who developed the theory of this type of amplification. Hartley, in 1936, described a capacitance modulator using a moving plate condenser, the capacity of which varied with the sound waves of the voice. The capacity of this condenser controlled the power, at the signal frequency, to be passed to the output. He showed mathematically that the modulation could under certain conditions become unstable. If the radio frequency current being modulated were increased in power the moving plate condenser could be made to burst into mechanical oscillation at an audio frequency. Later Hussey and Wrathall verified experimentally that this was so.

Since that time interest has seemed to lapse. The results were applied in the case of magnetic amplifiers to explain spurious effects, but in general the electronic engineers have been too preoccupied with new fields such as microwaves, computers, etc., to investigate this effect which on the surface would not appear to have many practical applications. Recently, however, the subject has been revived because of the problems of obtaining low noise amplifiers in the v.h.f. and u.h.f. region. At these frequencies there is not much external noise to be received and it becomes possible to detect very weak signals if equipment is available which is free of noise. Unfortunately electron tube amplifiers lead to no further gain than simple crystal mixers. This is because they generate noise internally, so in spite of the amplification they perform on the signal the resulting signal-to-noise ratio is the same or worse than that coming in from the aerial. Parametric amplifiers utilising these earlier effects are able to eliminate electron tubes from the front end of a receiver, the amplification being obtained with low noise solid state devices such as the crystal diodes mentioned. It may be said that the wheel has completed a turn and we are once again back to crystal sets, even though we may have to look hard to recognise them.

Getting back to the explanation of the amplifier we can start by consider-

ing an amplifier as a modulator. That is, small power alternations at the signal input frequency cause variations in the amplifier's energy source resulting in the flow of higher power alternations at the amplifier output. The energy source of the conventional amplifier is a direct current, and the output should be a higher power replica of the input signal. If this direct current energy source is regarded as an alternating current source of zero frequency, we can then see that the usual amplifier is only a special case of a more general series of modulators in which the modulator energy is an alternating current. The special properties of variable reactance type modulators are less widely known than the more conventional type of modulator. These properties will now be described, and they provide the fundamental working principles of the parametric amplifier.

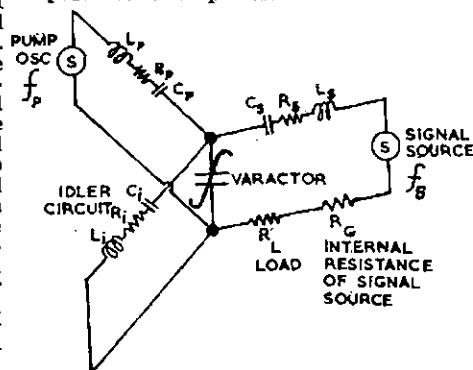


Fig. 2.—Equivalent Circuit of Fig. 1.

GENERAL THEORY

The general case of the mixing of two alternating currents through a non-linear reactance leads to the generation of an infinite series of beat frequencies. These are the sum and difference beats of the two signals mixed and all of their harmonics. If we confine our attention to the simple case of only four frequencies, namely the two signals being mixed and their sum and difference, then we can use two important results from the earlier work of Hartley.

(1) The two signals applied to the non-linear reactor supply power unequally, the ratio of these two powers being greater than the ratio of their frequencies. If one signal source has a much higher frequency than the other, it will supply most of the power to the modulator, the low frequency source will supply very little power.

(2) The power available at the sum frequency of the signals mixed, comes from both generators, i.e. this power is equivalent to a positive resistance in the circuit of both the sources. In the case of the difference frequency however, power is absorbed from the higher frequency source but not from the lower frequency source, in fact power is actually given to the low frequency source also; i.e., absorption of power at the difference frequency introduces a positive resistance into the high fre-

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frequency source and a negative resistance into the low frequency source.

The two equations given below give the power relationships between these frequencies, the only restriction being that the non-linear reactance be single valued, i.e., no hysteresis effect. The results are independent of the power of the two mixing signals, and the shape of the non-linear characteristic.

If P_h = power of higher frequency f_h ,
 P_l = power of lower frequency f_l ,
 $P+$ = power at frequency $f+ = f_h + f_l$,
 $P-$ = power at frequency $f- = f_h - f_l$.

$$\frac{P_h}{f_h} = - \frac{P+}{f+} - \frac{P-}{f-} \dots \dots (1)$$

$$\frac{P_l}{f_l} = - \frac{P+}{f+} + \frac{P-}{f-} \dots \dots (2)$$

UP-CONVERTERS

If after mixing the two frequencies f_h and f_l we extract power at frequency $f+$ both the source of f_h and of f_l supply power. In this case no power flows at $f-$, hence $P-$ is zero. For $P- = 0$ the circuit must show an open or a short circuit at this frequency.

$$\frac{P_h}{f_h} = - \frac{P+}{f+} \dots \dots (3)$$

$$\frac{P_l}{f_l} = - \frac{P+}{f+} \dots \dots (4)$$

The algebraic sign of each term is important, if power is going into the unit it is positive, if it is being extracted from the unit it is negative. In equations (3) and (4) it is obvious that for power to be extracted at frequency $f+$, power must come from the power sources of frequencies f_h and f_l which are both positive. These equations are in the most general form deliberately; in an actual practical example we could make the following transformation:

f_h = frequency of pump oscillator.
 f_l = signal frequency from aerial.

Then using equations (3) and (4) we have f_h and f_l both positive as they are feeding power into the varactor. At frequency $f+ (= f_h + f_l)$ is a tuned circuit taking power from the varactor, hence $P+$ is negative. This example is actually a modulator (usually called an "up-converter") and it can be made to give considerable conversion gain. Using equation (4), gain $G = -(P+ \div P_l) = (f+ \div f_l)$, hence the further apart the signal frequency and the sum frequency, the greater the gain of the unit. In this example to obtain the original signal we would have to demodulate at frequency $f+$, with a high frequency receiver. The gain in power at the frequency $f+$ has been obtained mainly at the expense of the source of power of the amplifier, i.e., the pump oscillator at frequency f_h . Reference to Figs. 3 and 4 should demonstrate the types of modes usually used and discussed in this section.

Before passing on to the next basic type of converter it should be pointed out that these equations also apply to demodulators. In the case of a demodulator, the signal comes in at $f+$ and the output is at f_l . The gain on demodulation $-(P_l \div P+) = (f_l \div f+)$ is unfortunately less than unity.

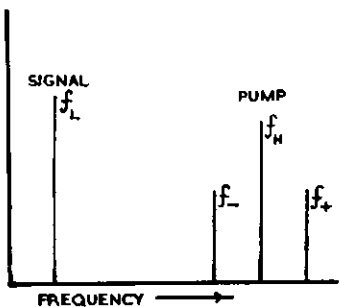


Fig. 3.—The case of a high pump frequency.

- (1) If power is absorbed at $f-$
 - (a) And output taken at f_l regenerative r.f. amplifier.
 - (b) And output taken at $f-$ regenerative up-converter.
- (2) If power is absorbed at f plus
 - (a) Output taken from f plus up-converter.

STRAIGHT AMPLIFIER

If instead of extracting power at $f+$ we extract power at $f-$, we get a different set of equations from (1) and (2). As $P+ = 0$, we get:

$$\frac{P_h}{f_h} = - \frac{P-}{f-} \dots \dots (5)$$

$$\frac{P_l}{f_l} = \frac{P-}{f-} \dots \dots (6)$$

In equation (6) it is seen that P_l and $P-$ are of the same sign, hence if power is extracted at $f-$, then $P-$ is negative and P_l will then become negative, i.e., power will leave the varactor at f_l , thus negative resistance and regeneration can be introduced at the signal frequency f_l . If regeneration is present the gain depends on this coupled with the various losses in the amplifier, and the equations are not used. Examination of equation (5) shows that the power for regeneration is obtained from the pump oscillator at frequency f_h .

It should be noted here that power must be absorbed at frequency $f-$ to get regeneration at frequency f_l , the signal frequency. The tuned circuit in the amplifier absorbing power at $f-$ is called the "idler circuit", as it does not seem to be doing anything. It will be apparent, however, from the equations that if power does not flow at this frequency no regeneration will occur at the signal frequency.

The amplifier described in this example seems to be the "original" parametric amplifier. It is virtually a regenerative r.f. amplifier of very low noise,

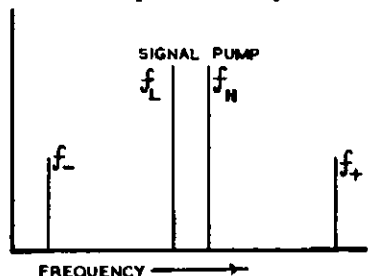


Fig. 4.—Signal and pump frequencies close together.

- (1) If power is absorbed at $f-$
 - (a) And output taken at f_l regenerative r.f. amplifier.
 - (b) And output taken at $f-$ regenerative down-converter.
- (2) If power is absorbed at f plus
 - (a) And output taken at f plus up-converter.

with the degree of regeneration controlled by the power from the pump oscillator. The main objection to this type of amplifier is that it is likely to break into oscillation at very high gain, and being regenerative, the bandwidth will be correspondingly narrow.

DOWN-CONVERTER

In the example of the previous straight amplifier we saw that power could be extracted from the varactor at two frequencies f_l and $f-$. We took the output from f_l which was the signal input frequency. The output could be taken from $f-$, again using regeneration to provide the gain. In this case the signal has been converted downwards, hence the designation "down-converter".

There are so many combinations that can be worked out in these converters that the nomenclature is becoming confusing. Whenever the output is below the signal frequency however, we have a down-converter unit of some sort. An interesting attenuator is described in "QST", Feb. 1959 in which a down-converter is run in a stable mode with the pump oscillator at a lower frequency than the signal. The gain or actually attenuation is $f- \div f_h$, in this case f_h is the signal frequency. (The sign convention is opposite to the one used in the "QST" article.)

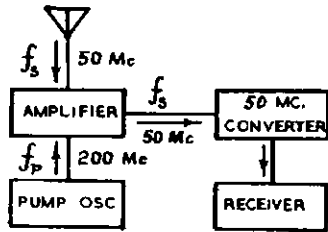


Fig. 5.—System for a Straight Parametric Amplifier.

GENERAL DESIGN

The diagrams should help clarify the various types of converters, and the general theory should help the understanding of any converters that have not been described. Before giving some examples from the literature, one more design point should be mentioned. In the above discussion four frequencies only have been manipulated. In the general case as mentioned before there are an infinite number of sum and difference frequencies resulting when two signals are mixed. These are given by $X f_h \pm Y f_l$, where X and Y are integer numbers representing the various harmonics. In normal radio practice, as in the above discussion, the only sum and difference frequencies used were those where both X and Y equalled one. In designing parametric amplifiers, however, there are sometimes advantages in picking higher members of the series. An example of this will be given where the pump frequency is below the signal frequency. In this case an electron tube pump oscillator may not be able to oscillate at an extremely high frequency as required by the normal operation of a parametric amplifier. The lower frequency pump mode of operation would then permit an amplifier to be constructed at these super high frequencies.

EXAMPLES OF AMPLIFIERS

Some examples from the literature may help to clear up any hazy thoughts on the subject.

Reactive Up-Converter: This mode of operation has not been examined in the foregoing discussion. A diode type amplifier receives the signal at 900 Mc. (f_1), mixes it with the pump oscillator at 9,900 Mc. (f_2) to give a signal at 9,000 Mc. (f_3). This signal at 9,000 Mc. is then mixed with a 9,070 Mc. local oscillator producing a 70 Mc. intermediate frequency signal. The noise figure for this unit is less than 1 db. The unit has a conversion gain of 18-20 db. and is used for tropospheric scatter communication.

On a 250-mile path the use of this unit enabled a cut in transmitter power from 10kw. to 1kw. Whilst this unit is an up-converter, it is regenerative because power is extracted at f_3 . It is rather similar to the down-converter in this respect. Presumably the unit could also have been used as an r.f. amplifier at 900 Mc., but would most likely have had a poorer noise figure.

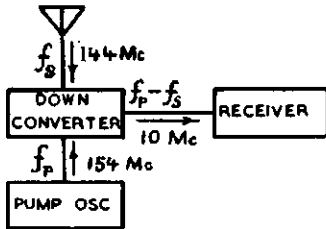


Fig. 6.—System for a Down-Converter.

Standard Parametric: A cavity was made resonant at 3,500 Mc., 2,300 Mc. and 1,200 Mc. A diode was placed within the cavity and a pump power of 100 mw. at 3,500 Mc. (f_2) caused oscillations to occur at 2,300 Mc. (f_1) and 1,200 Mc. (f_3). On reducing the pump power, amplification was obtained from either of these frequencies. Bandwidth at 19 db. gain was 1 Mc., at a power output of 1.5 mw. The noise figure was 4.8 db.

Parametric with Lower Pump Frequency: This amplifier again used a diode as the varactor. The signal was at 380 Mc. and the idling circuit at 220 Mc. The pump oscillator was at 300 Mc., a second harmonic of the pump virtually being used in order to get an idling frequency of 220 Mc., i.e., $f_3 = 2 f_1 - f_2$. $f_3 = 2 \times 300 - 380 = 220$ Mc. This amplifier gave a stable net gain of 20 db. at 380 Mc., using a pump power of 30 mw. Strong oscillations commenced at 380 Mc. when the gain was made to exceed 40 db. The noise figure was 10 db. and the bandwidth 1 Mc.

The amplifiers described in this article bear little resemblance to the example described in "CQ", Nov. 1958, in which only one tuned circuit is used for the whole amplifier. This is a particular case of the general theory in which the signal frequency and the idler frequency are the same. It is usually referred to as the "degenerate mode" and has several attractive features. It has been proposed mathematically that it contributes less noise, and it also is more convenient to construct having only one tuned circuit. There is no tuned circuit for the pump oscill-

ator, it is fed straight onto the varactor by a co-ax cable from the oscillator. The pump frequency is twice the signal frequency as shown by the general theory.

$$f_3 = f_2 - f_1$$

then pump frequency $f_2 =$

$$f_1 + f_3 = 2 f_1$$

as $f_2 = 2 f_1$.

The pump frequency could, of course, be any other frequency predicted by the general theory, and it is quite possible that a lower noise figure could be obtained by using much higher pump frequencies.

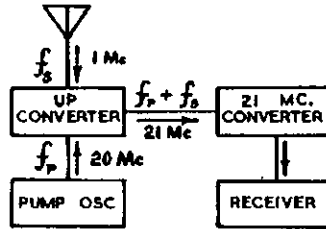


Fig. 7.—System for an Up-Converter.

CONCLUSION

These examples should suffice to illustrate the many combinations of frequencies that can be used in designing out a parametric amplifier. When designing your experiments remember all other frequencies except those in use should see either an open circuit or a short circuit. Very strange spurious effects may result if power at any of those many sum and difference frequencies is allowed to flow, or unwanted noise could be introduced.

This review article has only dealt with a few types of the many described elsewhere, so a study of the literature would be well worthwhile. Also, it will be noticed in so doing that the nomenclature associated with the components and the various types of amplifiers has not been standardised. In this article the most commonly used words have been applied. No attempt has been made here to describe a practical amplifier. Descriptions of practical amplifiers have been published, but there are not many descriptions of the basic theory available good enough to explain the multitude of receivers being described, or to allow the design of an experimental amplifier.

The amplifiers described at present are quite likely to be obsolete in a few

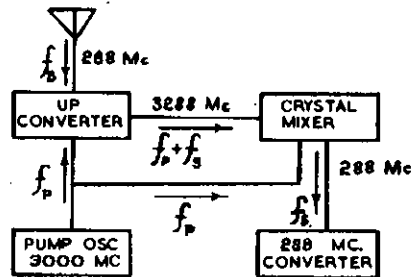


Fig. 8.—Up-Converter using unstabilised pump oscillator.

years. Electron beam mavar tubes are under construction in which an electron beam is used for the coupling in place of the varactor. Ferrite loaded coils are also being used, in which various ferro-magnetic resonances are excited. It is logical to assume that more efficient varactors will be developed, and be used in better designed amplifiers. At this stage all one can say is that there still remains a lot of experimental and developmental work to be done, and it is hoped that the experimentally-minded Amateurs will contribute. In the future, maybe, the pages of this magazine will contain many articles concerning experiments and construction of these amplifiers.

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C.W.

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OPEN

Call	Cer. Cnt- No. ries	Call	Cer. Cnt- No. ries
VK4FJ	32 251	VK3XU	61 221
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VK6RU	6 246	VK3FG	3 215
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VK3BZ	4 231	VK3ATN	69 210
VK3WL	45 225	VK3NC	77 209

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BOOK REVIEWS

"CQ" NEW SIDEBAND HANDBOOK

Don Stoner, W6TNS

The author, W6TNS, has set out to cover the whole subject of Amateur sideband in this handbook. The entire book is written in a very easy style with a complete absence of maths. and contains much of what the author calls "sugar coated theory".

The handbook is divided into eight chapters in logical sequence. Of particular interest are the chapters entitled "What is Sideband?", "Double Sideband", "Balanced Modulators" and "Receiving Sideband".

Almost all of the material in the "New Sideband Handbook" has not previously been published. A very good collection of circuit diagrams has been given including several extracted from various items of commercially made Amateur equipment. A number of constructional articles is included, but, as is usual in most publications originating overseas, some of them are not suited to our conditions here. Of particular local interest should be the practical articles in the chapters on "Double Sideband" and "Linear Amplifiers", an s.s.b. receiver built around a BC453 Q-5er and a "driftless" v.f.o.

The book is very well presented and the circuit diagrams clearly drawn. It may be recommended as an ideal introduction to sideband for the newcomer to this mode of transmission and reception and the wealth of information it contains should be very useful to even the most experienced "sidewinder".

Publisher: Cowan Publishing Company, New York. Australian price 31/- plus 1/- postage. Our copy from Technical Book and Magazine Co., 295 Swanston St., Melbourne, and McGill's Authorised Newsagency, 183 Elizabeth St., Melbourne.

THE RADIO AMATEUR'S HANDBOOK

The American Radio Relay League announces publication of the 1959 thirty-sixth edition of The Radio Amateur's Handbook (746 pages), the standard manual of Amateur Radio communication. Published continuously since 1926, the Handbook is a much-used reference work that has proven invaluable to many thousands of Radio Amateurs, Experimenters, Students and Engineers. A best-seller in every sense of the word, over three million copies have been sold in the thirty-odd years it has been published.

Its sections on the theory of radio communications have been brought up to date to keep abreast of the state of the art; and material on the construction of equipment includes new designs in all the categories. There are receivers for both the beginner and the advanced constructor; transmitters for every level of power and frequency range are described.

Special methods of Amateur communication, such as sideband and radio-teletype, are treated in sufficient detail so that any student of the art will be able to understand the basic principles.

The theory and practice of mobile radio equipment is thoroughly covered, including the fundamentals of transistor power supplies.

The important section on vacuum-tube characteristics has been completely revised and made current. It provides one of the most complete listings of vacuum-tube characteristics and tube-base diagrams to be found between the covers of any one book.

As it has for a number of years, the Handbook also contains a large catalogue section, featuring communications equipment of the nation's leading manufacturers. In most cases, complete specifications and measurements are given to assist the constructor.

Publisher: American Radio Relay League, Australian price 46/3 plus 2/3 postage. Our copies from Technical Book and Magazine Co., 295 Swanston Street, Melbourne, and McGill's Newsagency, 183 Elizabeth St., Melbourne.

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AMECO AMATEUR RADIO THEORY COURSE

By Martin Schwartz

Here is a complete theory course for those who are studying for the A.O.C.P. examination.

The course is divided into three parts. The first section takes in all the necessary a.c. and d.c. theory. The second is devoted to vacuum tubes and their uses, while section three discusses transmitters, receivers, antennae and

regulations. As the book is published in the United States the regulation chapter will have to be eliminated from study and the P.M.G. Handbook for the Guidance of Amateur Operators substituted.

At the end of each section there are a number of practice questions which will check your knowledge.

This book covers all you will need to know to pass the A.O.C.P., and is written in an easy to understand way.

Our copy from the Technical Book Co., Swanston St., Melbourne. Price 45/6.

COMMAND SETS

This excellent book encompasses in one volume most of the data printed in "CQ" on the Command series of transmitter and receiver conversions, and gives all the original circuit diagrams, plug connections, etc.

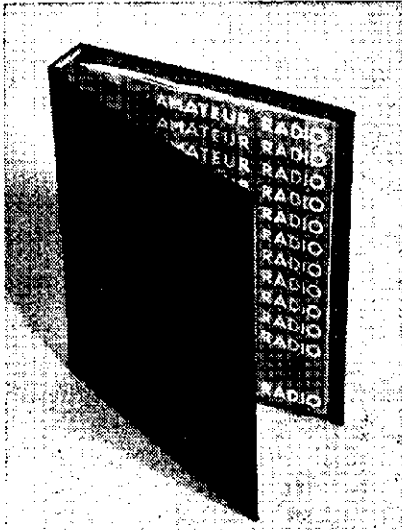
Some conversions selected at random include 80, 40, 20, 15 or 10 metre operation, keying filter, break-in, band-spreading, crystal control, ideas for mobile work, using as a v.f.o.; tuning knob, crystal converter, double conversion, noise limiter, Q-Fiver, improving signal-noise ratio. Also given are suggestions for modulators and power supplies.

As the Command units are still available from disposal sources this book should be invaluable for those Amateurs who are looking for conversion data.

Several articles on t.v.i. proofing Command transmitters are included which would be of great assistance in laying the t.v.i. bug.

All in all a very handy book to have in the Amateur library.

Publishers, Cowan Publishing Corp., New York. Australian price: 19/6 plus 1/- postage. Our copy from McGill's Authorised Newsagency, 183 Elizabeth St., Melbourne, and Technical Book and Magazine, Co., 295 Swan St., Melbourne.



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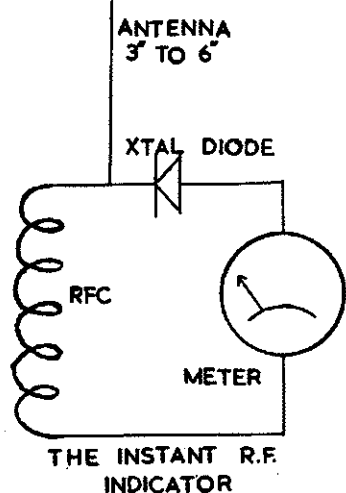
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THE INSTANT R.F. INDICATOR

K. B. POUNSETT,* VK2AQJ

THIS very handy item of test equipment is as simple to make as a cup of instant-coffee and takes less time. You don't have to wait for the water to boil! In addition to this, the indication is instantaneous compared to a thermo-couple r.f. meter which always lags that critical adjustment one is making. The instrument is by no means a new idea, it is probably a lot older than I am. Why it does not enjoy a greater degree of popularity amongst the fraternity is a mystery.

Three components are all that are needed, an r.f. choke, a crystal diode and a meter of about 1 mA. full-scale deflection. A more sensitive meter can be used but care must be taken not to overload it. My indicator was mounted in a small metal box that I made several years ago and is just large enough to take the three components. A pin-jack at the rear serves as an antenna connector. If you wish, you may add a phone jack as it may then be used as a modulation monitor if you still use a.m.



The uses to which this instrument can be put are many. It can be used as an output meter for the transmitter and if used in the same spot in the shack and with the same length of pick-up wire, it will show any changes in your transmitter or antenna system from day to day. I have found that used as an output meter, the transmitter and antenna coupler can be tuned to squeeze the last drop of r.f. from the equipment. It can also show if the various combinations to which one can tune a pi-coupler are putting out r.f. or not.

I have also found it most useful in tuning up my s.s.b. equipment. By introducing a small amount of tone into the speech input and aligning all the circuits for maximum output, it is a very positive indication that the transmitter is delivering the goods. I use d.c. meters mainly to remain within the safe ratings of the tubes and to stay under the legal limit.

In receivers and other equipment, it can give indications that the various

oscillators are working. Also r.f. on house wiring, piping and other places, such as t.v. and b.c. antennae, can be detected. Recently I had need to cure instability in a 14 Mc. class A driver amplifier in my s.s.b. rig. The pick-up wire was placed near the plate circuit of the amplifier and without drive being applied, the meter showed that r.f. was present. By applying a few general-rule remedies, I was soon able to effect a cure.

For the Ham who likes to experiment with beam and mobile antennae, this instrument can be used as a field

strength meter, with excellent results, especially if a 100 μ A. movement is used, as this greatly increases the sensitivity. Standing waves can also be investigated on feeder lines if you can reach that high! It can also be used as an r.f. indicator when neutralising an amplifier, BUT do not forget to remove the high voltage from the plate tank.

No doubt there are other instances that I do not call to mind, but if you ever have reason to detect the presence of r.f., this is the cheapest way out. It will cost you less if you use your multimeter as the indicator, but I prefer to use the separate meter as I use the Instant R.F. Meter as an ON-THE-AIR indication.

2nd ANNUAL CONVENTION OF WIRELESS INSTITUTE OF AUS.

Held at Perth, W.A., during August, 1925



Back Row (left to right): W. Phipps, VK6WP, Queensland Representative; W. E. Coxon, VK6AG; A. E. Stevens, VK6BN; F. H. Goldsmith, Official Reporter; J. C. W. Park, VK6BB, Hon. Secretary; F. H. Narroay, Hon. Treasurer.
Front Row (left to right): P. Oakley Fysh, VK7PF, Tasmania; Jermyn Masters, VK3LM, Vic.; E. M. Holt, M.I.E.S. (Eng.), Chairman, President W.A. Div.; H. A. Stowe, VK2CX, New South Wales; Clement E. Ames, VK5AV, Sth. Aus.

U.S.S.R. INTERNATIONAL C.W. CONTEST

Short wave Radio Amateurs of the world are invited to take part in this Contest organised by the U.S.S.R. Central Radio Club. There is a listeners' section referred to as "Observation."

A Radio Amateur of any country should score as many points as he can for contacts with Radio Amateurs from different countries, participating in the Contest, or for observations of contacts established between other Amateurs.

Time of the Contest will be 2100 GMT on May 9 to 0900 GMT on May 10, 1959, on 28, 21, 14, 7 and 3.5 Mc. bands, on telegraphy only.

All participants should exchange six-digit control numbers made up of RST and the ordinal number of the radio contact, e.g. 599001. General call sign during the Contest will be CQM (Peace).

Only one radio contact with the same radio station will be taken into consideration. In the case of observation, each radio station participating in the Contest may only be logged once. Contacts and observations within the

same populated area will be disregarded. The list of countries is that internationally used by Radio Amateurs.

The results obtained by each Radio Amateur in the Contest will be appreciated by the number of points scored for contacts with Radio Amateurs from foreign countries, including his own country, or for observations of contacts between other radio Amateurs. Each contact (observation) will yield one point. The total number of points gained by a participant will be multiplied by the number of countries he established contacts with, or which contacts he observed. Awards will be issued to winner in each country, likewise for listeners' section.

Logs should be mailed to the Chief Judging Board not later than May 15, 1959. Address: Post Office Box 101, Moscow, U.S.S.R.

Logs to include call sign, name, country, the town of, transmitter (watts), antenna, receiver, and made out in seven columns thus: Date, band, time, station worked, number received, number sent, points. At foot of page: number of points for contacts, number of countries, total number of points. Signature and date. Listeners should not fill in column 8 (that of number sent).

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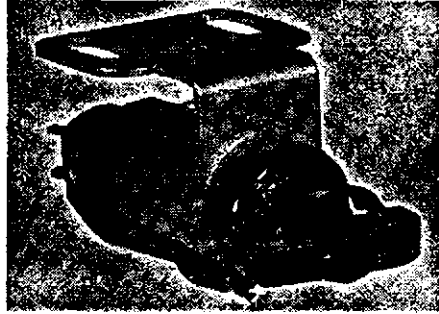
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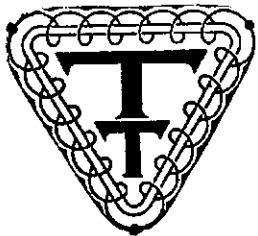
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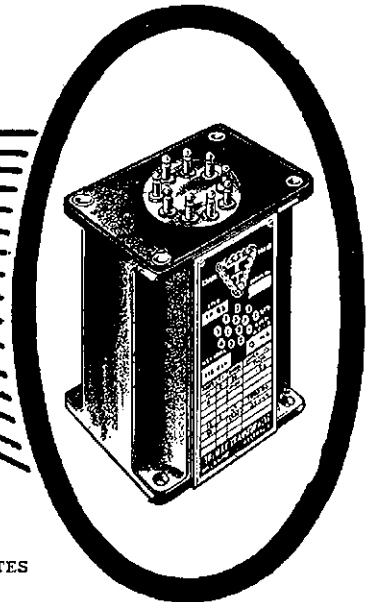
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TRANSISTOR DX

Editor "A.R.," Dear Sir,

You may be interested to hear of a QSO which may well constitute a record. During the evening of April 2, 1959, I was in contact with VK3AN on approx. 7005 Kc. and about 8.15 p.m. when he asked me to have a listen for his small crystal controlled two-stage transistor transmitter which was operating from a 6 volt supply. The input to the final was 3.6 (three point six) m.W. Sure enough there he was, calling me and coming through at RST 4/5-4-9 just like a weak "W".

Alan VK3AN was pretty excited and as for me, well it took me back to the old days of 1925 when as A2YB I used to work with my UV199 and 90 volt "B" battery.

To keep the record straight I told Alan to ask me a question on his transistor rig just to see how well he really was getting out, and when to his question, "How old are you?" I came back with "Fifty, hi, hi," I could almost see him doing handsprings in the shack.

Now, Mr. Editor, I must say that this little episode on "Old 40" gave me more satisfaction than a new country on 20 and proves that in Amateur Radio the unexpected is always turning up. Somehow I think it will be a sorry day when there are no more "key pounders" left in the ranks!!

—Ted Cawthron, VK3JE.

THAT WORD "HAM"

Secretary, Federal Executive, W.I.A.,
Dear OM,

I am pleased to see, by current newspaper publicity, that the Institute has decided to set its own course of action and depart from what has been recognised by all other Radio Societies throughout the world for the past 30 years or more—I refer to the use of the word "Ham".

Whilst I disagree with the Institute decision, it is refreshing to find that it is willing to make decisions of this nature.

Now, PERHAPS, something might be done in regard to the list of countries for the DXCC, in which the W.I.A. stands on its own—years behind the times.

—Alan G. Brown, VK3CX.

DX OPERATING

Editor "A.R.," Dear Sir,

Referring to your remarks in April "A.R." it is not correct to describe present day world wide DX working as an "obsession". Rather, it is a very intelligent phase of Amateur Radio. DX has not "killed short range, friendly, casual contacts" either. Your quotation may have applied in the U.S.A. in 1926 when it was written, but not in 1959.

Every Amateur is entitled to choose whatever field of activity appeals to him. Maybe in 1926 it was practicable to engage in the lot, but not in 1959.

A study of present day DX operating provides a wide field to which any Amateur may well confine his activities and it is most important to remember that the DX bands are provided and should be fully exploited for this purpose. When not open for DX, these bands are often useless for local contacts.

Your article contends that "local, friendly contacts built up the wonderful spirit of the Amateur body, etc." in 1926. Now extend your idea to present day DX and you have the 1959 world-wide version.

As you quote A.R.R.L. as your authority (with which I entirely agree), may I elaborate on the theme?

Much has been written in "A.R." on the subject of DXCC Rules, and in my view the only reference that came to the point was one by the Awards Manager that an attempt was being made to obtain uniformity through the I.A.R.U. I believe this has failed.

There is only one real approach to this matter. What we want is uniformity with the A.R.R.L. I am not influenced by any argument that we cannot have their Rules or that our DXCC is of necessity something different.

The A.R.R.L. Rules are the only ones soundly based, always up to date, and administered by experts. They are treated as standard by Amateurs all over the world. The only sensible thing to do is to arrange for uniformity with A.R.R.L. as soon as possible and I feel certain the people you have quoted will cooperate. No other course will finally settle the matter.

—A. Kloback, VK3KB.

DXCC

Editor "A.R.," Dear Sir,

Could I be permitted at this late stage to say a few words on the controversial subject of the countries list and DXCC. Whilst appreciating Alan Brown's opinion on the matter of the DXCC, I am afraid I must agree with Frank ZQL. The DXCC is not original, there should be only the one award of this nature in the world, as there should be a standardised list of countries. Maybe the present A.R.R.L. countries list is a little overdone, but I am sure that anyone with an ounce of common sense will agree that the two organisations should get together on the subject (if they have not already done so) and thrash the matter out. It could be done if both parties were willing to listen to reason and give and take a little.

On the subject of the Australian DXCC, I would suggest that it be scrapped without further ado, and a purely Australian award, covering the working of all States, with a set number of contacts for each State according to size be issued. In this way we would be doing something original and leaving the DXCC where it came from. I would suggest also that in conjunction with such an award, a similar one for s.w.l.'s throughout the world be issued.

For the benefit of s.w.l.'s who may be new to this hobby of ours, the listeners' equivalent of the DXCC is issued by the I.S.W.L. to their members only.

—Don Grantley, BERS1002.

Editor "A.R.," Dear Sir,

I fully agree with the sentiments expressed by VK2ABR in the April issue of the magazine. It is most frustrating to work hard for a 50 Mc. W.A.S. and then find that the N.T. is not represented on the band.

One solution would be to exclude the Territory as a necessary State, but this makes things too easy. After all, if an award is easy to get it loses value and those who have the award were faced with the same difficulty for some time. They solved the problem by encouraging Amateurs in the area to come on 50 Mc. Can't we do the same, and the next best thing would be to organise a DXpedition (they appear to be fashionable now) and then at least some names could be added to that list of 17.

I feel that on no account should the award be changed—another award is virtually made if this is done. Since the N.T. is still there, we should try and get some representation from there on 50 Mc.

I'm sure Mr. Rusby, when you finally do work that elusive VK5/N.T. you will appreciate that certificate much more than if you got one without N.T. now.

Have we any takers for a 50 Mc. operator in N.T. or for a DXpedition to Alice Springs or places north?

—David Rankin, VK3ZAQ.

40 METRE DX

Editor "A.R.," Dear Sir,

It is very gratifying to a short wave listener when he is able to tune in and jot down some choice DX in his log, but more so when those much sought after signals are to be heard emanating from the 40 metre portion of the spectrum. But such has been the case in the few weeks that I have focussed my attention (and receiver) on that band. I do not know if it is due to the publicity given to 40 metres recently, both here and in overseas magazines, but the results are there. So is the QRW, but with a bit of patience the good ones can be readily logged, also no doubt they could be worked by anybody willing enough to have a go. This applies also to the novice segment of 40 metres. I do a lot of novice logging, and eventually when I get cards back from the lads (many of them only 14 or so), there is more often than not a comment asking for, or begging a sked with a VK as they never hear one. Maybe they cannot read the few VKs I have heard calling them due to their crowded conditions, but whatever the cause I would ask any of the DX gang, if you have the time, spare a little of it for some of these eager kids, and who knows, you may even land that missing State or two.

Reverting again to general DX on 40 metres, I have heard some 25 countries, plus all American call areas in recent weeks, and I am sure my friend BERS195 has heard double that amount. Which all goes to prove that the DX is there. As for local calls, there has been an outcry about the lack of activity, but although the band is slack during normal working hours, there are always those few who can get on the air and do. And in the evenings and at week-ends and holidays, when the average Amateur is freed of his daily toil, then I would venture to suggest that the band is more than comfortably occupied. It must be realised that, at this QTH I am in the firing line from the two largest States (as far as Amateur population is concerned) and of course get more stations than a Melbourne or Sydney listener would.

But admitting that many of our members operate on other bands, others are exclusively v.h.f., and others are tied up with administrative duties, where are the remainder of the 1,000 or so members of the VK2 Division alone? Surely if even another five per cent. of the VK2 Division occupied 40 metres to the straining point, then we may have some argument for retaining the band, which I for one consider is well worth retaining. The s.w.l.'s are doing their part to bring the band to the fore in the limited scope which we have, so how about some of the missing links coming into action and helping to hold the band if it is at all possible at this late date.

—Don Grantley, BERS1002.

MODIFICATIONS TO NO. 122 SET

It was intended to publish in this issue some Modifications to the No. 122 Set. At the last moment a few more details were obtained which necessitated further tests being carried out. If you have done any modifications to the No. 122 Set please forward details to the Editor so that they can be included in the list to be published in a forthcoming issue.

HELP WANTED

Appeals have poured in from many countries for copies of the October 1958 issue of "A.R." This issue is out of print. Therefore we appeal to all Transmitting Amateurs, non-active members, and short wave listeners to forward any copies which can be spared to the Editor. Their action in so doing would help our overseas friends and would be greatly appreciated.

50 Mc. W.A.S.

Editor "A.R.," Dear Sir,

I support the opinion of Bill Rusby that, with the continued absence of a 6 metre operator in the Northern Territory, the 50 Mc. W.A.S. must remain impossible to acquire.

It was my misfortune to attend a Sydney v.h.f. meeting three years ago when this matter was discussed. I recall that the floor was firmly held by veteran 20 metre operators, possessors of an abundance of DX QSL cards and certificates who declared that: (a) There were too many VK awards; (b) That any misguided person who sought the 50 Mc. W.A.S. should not be given an easy task; (c) Antarctica should be substituted for N.T. with Fiji thrown in for good measure.

The real 6 metre operators sat quietly and listened, preferring to preserve their vocal cords for use on the band, and quietly resolving to attend the next W.I.A. social convention where those who have travelled the longest distance or the shortest distance, or any distance must receive an award.

Is it morally wrong that, in particular, the newcomer, who has put hours of endeavour into building gear, listening and calling should seek a certificate in return for his efforts and which is denied him on account of official ineptitude.

In reply to a letter to Melbourne regarding W.I.A. Certificates, I was asked if I would care to submit a design for a new one? Must one be a fisherman to be allowed to eat fish? If we, in our hundreds, are lacking artistic ability, let us consult the imaginative t.v. advertisers!

The position in other countries is clear. The attainable W.A.D.N.Z. requires four QSL cards or letters of confirmation, and if neither is forthcoming, N.Z.A.R.T. has informed me that they will help in obtaining them. Also W.A.J. A.D. is equally possible. Perhaps some ZL and JA operators would like to acquire the 50 Mc. W.A.S. How?

If this award is really defunct, then, by all means, let us inscribe those names on a marble slab and deposit it in the appropriate place.

—H. A. F. Rofe, VK2HE.

AMATEUR CALL SIGNS

FOR MONTH OF FEBRUARY, 1959

NEW CALL SIGNS

- VK— New South Wales**
 2ACA—P. C. Seaberg, 187a Beardy St., Armidale.
 2ANY—M. W. Beck, O.T.C., Bringelly.
 2AOK—H. Cox, 380 Lugarno Pde., Lugarno.
 2AQW—L. A. Wade, 8 Edgar St., Auburn.
 2ATV—K. R. Virtue, 31 Union St., Sth. Lismore.
 2AUN—J. G. Moss, 22 Fitzpatrick Ave., Frenchs Forest.
 2AWE—W. R. A. Evans, 10a Bradley Ave., Bellevue Hill.
 2AXE—A. Davis-Rice, 7 Raymond Rd., Neutral Bay.
 2ZJH—W. J. Hart, 83 Muston St., Mosman.
- Victoria**
 3EP—M. R. Robinson, 9 Springfield Rd., Box Hill.
 3HN—W. H. Berry, 52 McNamara St., West Preston.
 3NQ—G. E. Heinrichs, 68 Bernards St., Cheltenham.
 3AUA—M. C. Carpenter, 741 Elgar Rd., Doncaster.
 3ZDT—P. G. Thorne, 10 Dickinson St., Glenroy.
 3ZEL—J. W. Spicer, 413 Stephensons Rd., Mt. Waverley.
 8ZMH—K. T. Hughes, 208 Albert St., Sebastopol, Ballarat.
 3ZIM—J. F. McKenzie, R.M.D., Toolamba.

- Queensland**
 4GP—D. A. Crowley, 145 Nudgee Rd., Doomben, Brisbane.
 4HM—H. D. Marriage, Block 10, Nundubbers.
 4ZCD—E. L. Bishop, 38 Minnantine St., Stafford.

- South Australia**
 5EB—A. Havyatt, Carey's Gully Rd., Stirling East.
 6KT—E. A. Fletcher, 22 Holden Ave., Woodville West.
 6ZDD—K. Bartusek, 16 Maitland St., Mitcham.
 6ZDH—N. J. Pollard, Lot 11, Brian St., Teatree Gully.
 6ZDN—W. J. Harwood, 52 Davenport Ter., Wayville.

- Western Australia**
 6DC—H. E. Cole, 80 McDonald St., Como.
 6VF—West Australia V.h.f. Group (Inc.), 29 Central Rd., Kalamunda.

- Tasmania**
 7XX—D. B. McKelvey, 46 Athleen Ave., Lenah Valley.

- Antarctica**
 0AW—A. W. Sawert, Mawson.
 0EM—E. L. Macklin, Mawson.
 0VH—F. A. Van Hulssen, Mawson.

CHANGES OF ADDRESS

- VK— New South Wales**
 2HT—H. A. Harris (Rev.), The Manse, 46 Queens Rd., Brighton.
 2ID—F. T. Adams, 21a Caloola Rd., Wentworthville.
 2QU—G. A. Waddock, 3 Wrights Rd., Lithgow.
 2TE—A. Boyd, Cr. Corowa and Aldunga Sts., Blacksmith.
 2ALG—J. A. Ackerman, "Idlewild," 181e North Rocks Rd., North Rocks.
 2ASI—J. J. Sullivan, 13 Brooks St., Newcastle.
 2AXK—D. A. Kinsella, Christian Bros. College, The Boulevard, Lewisham.
 2AYB (previously 2AXK)—D. Robinson, 5 William St., Narrandera.
 2ZAD—B. Holland, The Vicarage, Railway St., Belunga.
- Victoria**
 3AJ—R. G. House, 54 Railway Cres., Moorabbin.
 3EG—G. D. F. Clarke, 53 Alwyn St., Mitcham.
 3IN—J. I. Young, Lot 4, Sesame St., Mount Waverley.
 3KI—T. P. Kirby, 61 Station St., Lower Fern-tree Gully.
 3PE—E. R. Elkin, 200 Johnston St., Collingwood.
 3UD—I. H. Denholm, 751 Thomas St., East Brighton.
 3UW—R. B. Wallace, Sgts Quarters, I C.O.D., Bandiana.
 3WI—W.L.A. (Vic. Div.), Station: 478 Victoria Pde., East Melbourne; Postal: P.O. Box 36, East Melbourne.
 3XZ—R. R. McGregor, 65 McDonald St., Mordialloc.
 3ALO—A. L. Lowe, 4 McCracken Ave., Blackburn South.
 3AOG—T. V. Savera, 86 Price St., Essendon.
 3ZAF—F. Furr, 108 Koroit St., Warrnambool.
 3ZGA—L. A. Maschettl, 8 Wright St., Laverton.

Queensland

- 4EP—E. J. Parow (Rev.), Station: Spencer St., Gatton; Postal: C/o. P.O., Gatton.
 4KA—K. A. Smith, 6 Lacon St., Holland Park, Brisbane.
 4KC—W. Beck, Upper Gay Ter., Caloundra.
 4OM—M. N. O'Burrill, 27 Humphrey St., West End, Townsville.
 4SD—A. H. Sharland, Station: 44 Bolsover St., Rockhampton; Postal: C/o. D.C.A., Aerodrome, Rockhampton.
 4XS—L. J. Salter, "La Novia," Wengenville, via Kingaroy.
 4ZBD—D. B. Hughes, 60 Mayne Rd., Bowen Hills, Brisbane.

South Australia

- 5FM—H. N. Bowman, Mals Ter., Crystal Brook.
 5FP—F. C. Purcell, Main South Rd., Darlington.
 5LJ—J. R. Lewis, 79 Henley Beach Rd., Mile End.
 5PO—A. M. Perriman, Flat 4, 361 South Rd., Black Forest.
 5VV—D. Wilson, Station 5AU, Port Augusta.
 5WA—C. J. Waterlander, 48 Victoria Rd., Birkenhead.
 5ZAF—D. G. Pfeiffer, 8 Hyde Ter., Tusmore.

Western Australia

- 6AJ—A. J. Jeffrey, Flat 1, 16 Forrest St., South Perth.
 6JE—C. R. Elabury, Nornalup.
 6JW—J. C. Watson, 118 Gugerl St., Claremont.
 6SF—J. C. Watson, Station: Portable on board vessel "Silver Fin"; Postal: 118 Gugerl St., Claremont.
 6ZAA—W. J. Howse, Flat 5, 1188 Albany Highway, Bentley.
 6ZBJ—B. J. Clarke, 210 Carr St., West Perth.

Territory of Papua and New Guinea

- 8DT—D. G. Taylor, Boboro Ave., Boroko, Port Moresby.
 9HI—L. Raebel, Budoa Ave., Boroko, Port Moresby.

CANCELLED CALL SIGNS

- VK— New South Wales**
 2AW—A. W. Dye.
 2IJ—D. A. Crowley.
 2TI—H. J. Trick.
 2AET—A. Havyatt.
 2AOP—M. B. Robinson.
 2ATZ—I. Zainuddin.
 2AWJ—K. J. C. Wordsworth.
- Victoria**
 3XL—W. H. B. Sydserrf.
 3ATV—J. A. Hampel.
- Queensland**
 4HO—M. S. Robinson.
 4OB—J. P. Baker.
 4OX—H. Cox.
 4ZBN—N. Bignell.

- South Australia**
 5PQ—P. Muscat.

- Western Australia**
 6FC—F. G. Clarke.
 6ZAJ—B. W. A. Jacobs.
 Territory of Papua and New Guinea
 9AH—A. J. Humphries.

- Antarctica**
 0AA—W. J. Stewart.
 0AC—C. S. Nilsson.
 0AS—A. H. Sandilands.
 0AT—E. S. Trigwell.
 0EG—B. C. Cook.
 0DA—D. A. Brown.
 0DC—D. R. L. Callow.
 0HK—H. Knox.
 0LI—D. R. Twigg.
 0KC—P. K. Chapman.
 0PC—P. E. Clemence.
 0PK—P. King.
 0FT—F. B. Turner.
 0EB—R. A. Borland.
 0RO—R. E. T. Oldfield.
 0RR—R. R. Arnel.
 0TC—T. J. Cordwell.
 0ZN—B. E. Shaw.

PERMITS GRANTED FOR TELEVISION EXPERIMENTS

- VK— New South Wales**
 2AVQ/T—R. R. McKew, 19 McKoon St., Maroubra Beach.
- Victoria**
 3ATJ/T—J. W. Walters, 221 Prospect Hill Rd., Surrey Hills.
 3ZIE/T—D. L. Seedaman, 49 Cookson St., Camberwell.
- Queensland**
 4GT/T—W. G. Heaton, 8 Gibbon St., East Ipswich.

PREDICTION CHART, MAY 1959

Me.	E. AUSTRALIA	W. EUROPE	S.B.	Me.									
0	2	4	6	8	10	12	14	16	18	20	22	24	45
GMT													28
---													31
---													14
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E. AUSTRALIA — W. EUROPE L.R.													
0	2	4	6	8	10	12	14	16	18	20	22	24	45
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E. AUSTRALIA — MEDITERRANEAN													
0	2	4	6	8	10	12	14	16	18	20	22	24	45
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E. AUSTRALIA — N.W. U.S.A.													
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E. AUSTRALIA — N.E. U.S.A. L.R.													
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E. AUSTRALIA — CENTRAL AMERICA													
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E. AUSTRALIA — S. AFRICA													
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E. AUSTRALIA — FAR EAST													
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---													14
---													7
W. AUSTRALIA — W. EUROPE													
0	2	4	6	8	10	12	14	16	18	20	22	24	45
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W. AUSTRALIA — N.W. U.S.A.													
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W. AUSTRALIA — N.E. U.S.A.													
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---													7
W. AUSTRALIA — S. AFRICA													
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---													14
---													7
W. AUSTRALIA — FAR EAST													
0	2	4	6	8	10	12	14	16	18	20	22	24	45
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---													14
---													7

DX

John C. Pinnell, VK2ZR
15 Summit Avenue,
Earlwood, N.S.W.

The beginner launching out into the "DX field" will sooner or later discover that he must have some kind of filing system. Get one going before you work too many stations and so avoid a lot of confusion later. It is important to keep a record, or quick reference, of all contacts; names of operators; if you have met before; sent or received a QSL card; etc. A filing system is the answer. Each operator has his own "pet scheme", some good, and others not so good, while others depend upon their memory.

Depending on memory did not work in my case so I set up a filing system which is a bit elaborate but very effective. This is how it operates—a card is used for each different station worked—the call sign is placed on top then followed by the name and address. Each contact is entered with date, QSO No. and frequency on one line. A cross on the top left-hand corner indicates a QSL card has been sent and one received. The QSO No. gives quick reference to the log book records. Each card is 1 1/2 x 3 1/2 inches, cut from drawing paper. My file of 12,000 cards fit into a drawer 16 x 18 inches. It takes less than ten seconds to get the information of all contacts with any station worked since 1929. How nice it is to call a fellow by his name even if it has been 20 or more years since the previous QSO.

Reports this month indicate much improvement on the 21 and 28 Mc. bands. At times signals were very good. The 28 Mc. band opens for Europe and Mediterranean area around 2000z and lasts for at least a couple of hours. 21 Mc. is fair over several periods of the day; best times appear to be 0500-0800z, 1000-1300z, and again at 1900-2200z. Although there was some improvement in conditions as far as the 14 Mc. band was concerned, reports indicate considerable "patchiness", some evenings stations came through very well, yet on other evenings there was almost a complete "black-out". These conditions were very noticeable with the Europeans. It is hoped the band will be better as the season advances. Again, many good DX signals have been reported on the 7 Mc. band, especially from Europe.

"Slow Handclaps" to the VK3 who sat right in the middle of the c.w. band with broad fone during the second week-end of the A.R.R.L. C.W. Contest. You effectively prevented many contacts for VK and ZL OM.

The DXpedition to Serrana Bank, an uninhabited shoal which has been given separate country status for A.R.R.L. DXCC, took place in March for approximately five days, but was delayed in getting on the air by the party's inability for two days to find the spot. They ran short of fuel and decided to return to San Andre (HK0) to refuel. Worse was to come as they could not locate San Andre and had to call at Corn Island to get sufficient fuel to reach San Andre. They eventually got on the air as KS4BB for A.R.R.L. C.W. Contest when they normally would have had the trip over. If you worked them, QSLs go via W4KXV or W4JUV.

ZLSDX, who made the very successful Chatham Island trip recently (ZL3DA), plans another round trip to include British Samoa operating as ZM6AC on May 14, 15 and 16; Friendly Islands operating as VR5AC from May 19 to 25; Miua Island operating as ZK2AC on May 26 only; again British Samoa operating as ZM6AC from May 28 to 20. VR5 has had no Amateur Radio activity for many years. Evidently 20 metres will be the most used band as he is taking a 2-element 20 m. beam. He will also use s.s.b. at each location.

SUIKE, Mohamed Rashed, says there are five amateurs in Egypt, all in Cairo. They have great difficulty in getting parts for their equipment, so find it hard to keep on the air (W0AJU).

Someone is having a great time at the expense of ZD7SA for he is receiving lots of QSLs for s.s.b. and he has never been on s.s.b. (W2ZGB).

* Call signs and prefixes worked.
z zero time—GMT.

Guatemala has a new prefix, TG5. There is only one active station whose call sign is, I believe, TG58RO. He was YN4CB until a few weeks ago before he moved in from Nicaragua. A rare one is FJ2MB, he came on the air from Sint Maarten a few weeks ago on 14 Mc. Ex-V82DQ is now 9M2DQ and is the only station on Langkawi Island, off the coast of Malaya. It does not count as a separate country from Malaya.

HVICN is the only licensed station in Vatican City. All other HV stations are phonies. He has been unable to get any of the cards sent via the A.R.I. If you are entitled to a card send an addressed envelope and postage, also QSO information.

VP2AR has just received his ticket and should be on the air anytime now from Antigua.

VK9XM and VK9XN are the only stations active from Christmas Island.

VR1B is active on all bands from 3.5 to 28 Mc. His signals are very strong in Sydney. VK2QL reports working him on three bands—14, 21 and 28 Mc. Chas. is ex-VK1AC and VK0AB.

Nepal.—The Cook Laboratories in U.S.A. is under contract to supply and instal electronic equipment in Nepal soon. It is being considered to include a Ham in the party to go to this rare spot.

VK4XJ reports working JAs almost every night on 50 Mc. He also worked KH6UK.

ACTIVITIES

28 Mc. C.w.—4XJ: OH6RE, 4DO: Ws*, JA5*, KH6S*, DUTSV*. L202Z: Ws, Js, VR2DA, UA6KOB, SP4JP, SM7MS, GSDQ, CN8JE, G2YK, OK1KKQ.

28 Mc. Phone.—4XJ: VR2BC*, XE1OM*, HC1KV*, CRTLU*, ZD6DT*, ZE2KL*, SM5CO*, DJ3CN*, ZS8AS*, HC1KV*, VSIJT*, KAs*, VRs*, lots Ws*, ZS6WZ*, Gs, XE2JE, VP1EE, 4DO: KAs*, Ws*. L202Z: KR6HI, G3CAS, ZS6AJX, Cw.

21 Mc. C.w.—2QL: CN2BK*, ZB2I*, SV0WAE*, ZD2GUP*, ET2VB, YNIWV, MP4KAS, Z2R: EA9AQ, DJ3FE, 4ND*, DL3BJ*, 6ZZ*, F3DM*, DT, G2CKK*, 2GM*, GPD*, 3ASG*, JQX*, MIX*, JOC*, DQO*, MLX*, GWA3QV*, GANL*, 6GM*, ZO*, 8PD*, ON4NI*, LA5MG*, SP7HX*, VR1B*. 4DO: Ws*, Ks*, PJ2s, KM6BJ, SPIKAA, 4X4DR.

21 Mc. Phone.—L3065: ZLs, Ws, CN8IT, JE, 9CJ, F8J, LE, FK8AU, CTIPK, DL4AT, G3JAF, G3CGK, KH6s, VRs, VS1HU, VE7EH, KR8HI, KG6GH, KA0IJ, XE1DT, LATRF/MM, KL7FAK, HL8KS, YV5AEC, JA4HN. 5AB: KB6BH*, s.s.b. phone: KH6BP.

14 Mc. C.w.—20W: KC6JC*, VP8D*, UA4KHC*, 0CN*, OA4FA*, BV1A*, BV1USB*, XZ2TH*, VS9MA*, ZS6R*, ZK1AK*, UR2BU*, 4X4CK*, 4X4HK*, KV4BO*, ZS6AMC*, ZS6R*, VSSJA*, ZC4IP*, VK0CC*, ITITAI*. 2QL: SM5WN/LA/F, XW8AI*, OQ5J*, CR7BN*, KS4BB*, VS9AC*, LA2JE/P, SA5TO, SA3TP, Z2R: DJ2DL*, DL4MG*, DM2ANN*, OE5MM*, ON4AU*, OH8NC*, OK3MH*, OZ9AO*, G3MAN*, SP9RB*, LA2Q*, UA3CK*, UA1KA/E*, VO1DX*, KR6RP*, KB6TM*, F8VQ*, IIBAY*, LU4DM*, PY1DG*. 2AMB: VR1B*, KS4BB*, LU5ABL*, YN1AA*, VP8EP*, KP4AR*, LA3G*, EA8CG*, FB8BX*, ET2VB, VP4TR, KG1BO, XZ2AD, 9M2MA, FM7WP, VQ2AB, CR9AM, VP9EN, VSSJA, VS5AD, KW6CU, CR9AI, FO8AU, 4DO: Ws*, VE3*, KH6S*, KAs*, DL1UZ*, DM2RVN*, DL1EM*, DJ2KS*, F8QD*, G3BKF*, HB9VW*, HB9YL*, I1CTS*, F88AE*, HB1VL*, JZ0DA*, LZ1KSZ*, LA4DD*, LA9CE*, OH2QQ*, OH2LX*, ONAUT*, OQ5BC, PY2EU, OH2LX, OH2HX, OH1QE, OH1W, LUSHBZ*, SM5BVF*, SM3BTU*, SM2DR*, SP8HU*, SP6GB*, SP8DT*, VP8EP*, VK9AD*, XW8AI*, EA8CG*, ZB2I*, ZB7IE*, UA3CG*, UA03CF*, UA0FF*, FB8X, FB8C, HB9HF, H4SFR, HA8KA, CR8AX, CR8AR, FQ8HF, UBSKRF, UOSP*, UOSKAA, UP2KCB, Y00RI, YU3AB, YU3L, YU3CA, 4X4CT, 4X4HK, 4X4IR, 4X4JL, BE8S195, BV1US, CE8AA, DUIDR, EA8CG, ET2VB, FA4HM, FB8Z, HC4IE, JZ0DA, K6TSQ/KG6, KM6BL, KX6CO, OQ5BC, OR4RW, SV0WC, TI2PZ, UD, 6KAK, UL7KAA, VK0CC, VQ3CF, VQ4KRL, VQ6AB, VQ8AQ, XW8AI, ZC4FN, ZETJF, ZS5VJ, 4STFJ, L202Z: UB5SE, OQ5IG, PY6AC, GW5TW, SA3ATQ, VP9EP, GW3LEF, TI2WD, ET2KY, LZ1AF, OX3RH, YV5AO, UO6PK, UO5KAA.

14 Mc. Phone.—2AMB: W4JRD/KS4*, YS1MS*, MP4BCC*, FO8AX, YS1WV, SA0M*, DL1DX*, F9NW*, KA2CB*, OA4FP*, UR2BU*, VE1E1*, VE1HY*, VE5NK*, VE5VL*, VE7JB*, XE1BBA*, XE1CW*, XE1DE*, 4DO: VK2FR/LH*, VK9AD*, Ws*, VE3*, OH4NC, FM7WN*. 5AB: ET2US*, HL2HH*, HB9ET*, HL8KR*, Gs*, I1EZZ/M1*, JA3MO*, K3DKZ/VO1*, KX6CN*, KA0IM.

KS4BB*, KG1AA*, G13CWV*, MP4BBW*, PJ2AN*, PY2CK*, OA5H*, OK1MG*, PA0DV*, SV0L*, SV1AB*, T210*, UA1BE*, UP2AR*, VQ8AL*, VS1HT*, VSAJT*, VU2RX*, XZ2AD*, YV5FK*, SA2TK*, on s.s.b. KG6FAE*, K8LYK/KM6*, KM6BI*, KC4USM, LU3EQ*, ON4DM*, VP2GDW*, VS6HZ*, VP2LW*, VQ1ERR*, FO8DZ*, XZ2SV*, 9G1BQ*, L202Z: OZ1PS, HZ1AK, SM4AK, L3065: Lots of Ws, KH6CUQ, KB6BH, KM6BL, KW6CJ, VK0CC, EA3JE, KJ6BV, VK9AS, WA6DFH/MM, KA5MC, KA2DO, VE5YL, KX6CQ, KX6BU, I1ADX, TI2AB, KA0IT, KR6RO, KR6IT, ZLs.

7 Mc. C.W.—2AMB: LA4FM, 2QL: JA3BBX*, JA1ZF*, KG1AB*, KS4BB*, CN8JE 0800z, L202Z: Ws, UA0KIA, KH6LG, KL7SFN, JA2AAQ, UAOKSA, JA1VX, KH6BXE, ZS5FH, VQ4VQ, UB5FF, many Ws, BE8S195: G8RF, I1RAY, JA3, KAs, KL7APD, OK3AL, PY7JL, SL3AG, SP8KBE, UA1KCG, UA9KCC, UBSKBB, UC2KAB, DM2XL0, UOSKAA, UQ2AB, UR2KA, UL7JA, VETAOU, XE1U, VR2CC, YU2ARS, ZC4AM, ZB8JJ, ZS8ASX, UA0LS/MM, L202Z: UA6LI, OH5FJ, DL7GX, DJ2ZQ, 3AKN; Ws, HA4YB, Gs, Y030S, Y04BA, UBSKO, VU2ND, ZS1TU, ZSSAT, ZS6AVO, 5JE: W* (77), VE*, KH*, KL*, UL7JA*, OA4FM* (all in the evening); ZS4KJ*, ZS6APS*, ZS6AUP, DUNZ (around 2100z), OA2DR, YU2ARS, GW3NDB, OH2HK, UB6FB, SM5YF/MM (English Channel).

QSLs RECEIVED

2AMB: FA3QV, HC4IM, JT1AA, LX1DE, TY1HQ, UQ2AB, VP8BJ, XZ2TH, YU3RM, ZD2GUP. 20W: KH6MG/ZK1, ZK1AK, FP8AR, HA5BW, HA5DU, KC4USN, UH8KAA, ZENYJ (Marjorie). 2QL: CR7BN, CT2AI, CX3BH, UO5AA. 2ZB: ZP5CF, VP8EP, 4X4WF and 43 Europeans. 3AOM: HL9KS, HL8KT, JZ0HA, XE2TM. 5WP: G31VJ, HP1CC, UA6KOD, UA9OI, UR2BU, BE8S195: FR7ZC, HC4IM, HB1UE/HE, KP4VU, UA3XZ, UA0IA, UD6AM, VQ4FM, ZE4JZ, ZS4LB, 4X4WF.

QSLs for ZD2GUP and VS9AC should be sent via R.S.G.B. (2QL).

ZL1ABZ: QSLs for Kermadec Island contacts have been distributed to the U.S. Amateurs. It is not known if any have been issued to VKs due to the ban that was placed on VK cards by the W.I.A.'s refusal to accept ZL1ABZ cards even for the 3.5 Mc. contacts made (2QL).

VK5AB is handling VK9AD cards and all QSLs may be sent to him direct at Box 1, Hyman, South Australia, or via VK5 Bureau. They will be answered in the usual way.

It appears that all DX phone men are worried about the idea of losing the top 50 Kc. of the 14 Mc. band to the Ws. 5AB suggests everybody write their protest to the A.R.R.L. individually.

Much of the news in these notes was supplied by W4KXV DX Magazine via 2QL 2AMB, thanks Laurie for telephone call and help given. 2QL has been a power of help again this month. 20W notes much appreciated. 3AKN, welcome to the DX page Don, we all had to make a start and it should not be too long before you add new countries to your list 3AOM never misses to supply some interesting items. 4XJ has given the 28 Mc. notes a boost this month. Sorry your notes were one day too late last month. 4DO: thanks Hal for that very impressive list. 5AB, Brian has given a couple of interesting points which are included in the notes elsewhere. 5WP, thanks again for your letter. BE8S195, thanks for your words of appreciation and good wishes. Eric, L202Z, your long letter is very interesting Don and I will be using some of your points in a future DX page. L3065 is doing well on 15 Mc. and heard 23 countries during the month; hope you will find time to send some notes now you are back to study again.

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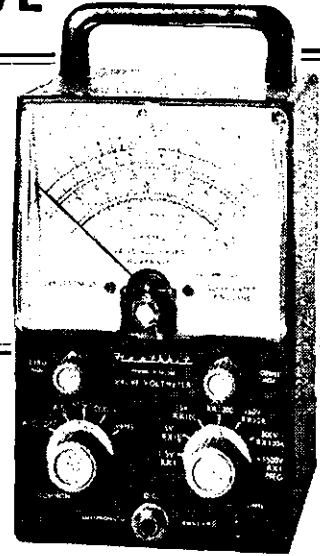
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Industries

VHF

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A mixed bag this month with the emphasis on a high level of activity for those in the north and reasonable to indifferent results for those in the south. The story unfolds in the Divisional notes: the highlights from VK4 being daily openings to JA and KH6, the first W contact this year and the swamping of KR6AK and VS6CJ by the JA QRM. The ZLs are still through to W land. It would pay dividends to watch 51 Mc., the chance could be there to work them either by ES or possibly direct. Down south, in VK3, the JAs had a frustrating habit of popping in and out so the bandwatchers had to be sharp off the mark to secure a contact. At times JAs were heard calling all Divisions, indicating that openings were general over VK, though on a sliding scale of effectiveness from north to south. Though VK7 were heard being called, no news has come through of any contacts.

A run through of VK3 activity gives us on March 1 ZAC hearing JA1 at 1300, while from 2315 ZHE beaming north east heard two Spanish speaking stations on 50.24 and 50.29 Mc., the first being R5, S6-7, March 6, Bill ZABR worked JA1 and 0, 1239, and 1300; March 8 ZAC and ZJK worked JA3, while at the same time ZHE made use of Es to contact VK4ZBE. The 12th found ZABR QSO JA1 and 8, 1409 and 1519. The 18th, a world day, next came up with weak JA8 and other carriers at 1320 for no contacts. The 28th proved the best day of the month when VK3 ZHE, ZABR, Z2CF and Z2DE successfully competed with VK3, 5 and 6 between 1100 and noon for contacts with JA8. At 1250 a JA tv. signal came up on 48 Mc. The video carrier was so strong Dick Z2CF tried for a picture but failed because of a poor antenna. Last in for the month was JA1IGV on 50.9, the morning of the 31st, heard by Bill Z2AC.

BOSS HULL CONTEST RULES

Food for thought. An extract from a VK2 letter. "It is a tragedy that VK7 is now F.C.C. with the possibility of other bands besides 50 Mc. being used for the R.H.C. to the advantage of VK5, 3, 7 and southern VK2. If I went to Griffiths, southern N.S.W., I could work VK3 and possibly VK5 almost daily on 2 and 6 mx. Best that they make the R.H.C. a handicap affair, the handicap being that ACE HIGH scorers of the past, 4NG, 4BT, 3ZER, 5QR, 6BO, etc., be forced to operate from this non-resonant bowl called Sydney. They would then realise how frustrating 50 Mc. listening can really become."

The implied plea is that the rules be based on a National, not a parochial viewpoint. The F.C.C., handling all contests run by the W.I.A., has this problem-child, the R.H.C., to cope with. The resolving of the rules to satisfy all Divisions calls for wisdom of a very high order and a complete divorce from pressure groups and local outlook plus the co-operation of all interested in the contest in that their views should be submitted for examination. Official views of the V.h.f. Group in each Division and also the views of each member. Group meetings as such cannot be attended by all those who participate in the contest, family and business life may enforce absence from meetings for the city fellow, while the country man has no say at all. The characteristics of 50 Mc. are entirely different from those of any other band, 144 Mc. included. For that reason alone, those members chosen for F.C.C. will need to examine closely and become fully informed about 50 Mc. and 144 Mc. activity, usage and the opportunity for each member to participate on an equal footing in the contest before they re-examine or revise the rules.

TECHNICAL INFORMATION

T.V.I.—Severe cross hatching on Channel 2 from 144 Mc. tx. Cause, stable r.f. on t.v. station's freq., no overloading, which would be indicated by blackout. Same may be caused by tx on other Amateur freqs. In use, a 5763 tritex osc. Cure: a 0.01 uF. disc ceramic across the heater pins 4 and 5. Not effective if from one heater pin to a ground point some distance away. Cause of trouble, 8th harmonic from 8 Mc. xtal being radiated from the heater wiring. In general, all power leads must be shielded and filtered. A point worth stressing. Like

any other rec., a t.v. set can handle only so much signal without overloading despite the normal a.g.c. used. With this maximum amount of signal present to a t.v. rec., it is still possible to cause cross hatching with an r.f. signal on the same freq. as the t.v. station. A g.d.o. does not generate much power (usually), but try the effect of one set up on the vision freq. of a t.v. set 100 yards away. Thus because a station is located in a high signal area he is not automatically exempt from t.v.l. problems. (3ZAQ).

T.v.l. V.h.f. Converters, and Reverse Action.—Adrian ZHE was plagued by Channel 2 getting into his 50 Mc. rx and blotting out all signals. The trouble was due to the use of a harmonic osc. in his converter. Cured by changing the osc. over to the Robert Dollar overtone circuit. David 3ZAQ found it necessary to watch the choice of freq. in his xtal locked converter for 144 Mc. His 6J6 multiplier (.21 to 63 Mc.) generated enough r.f. to cause cross hatching on a set 20 yards away. Trouble rectified by making the 6J6 double to 42 Mc., then tripling to 126 Mc.

RF25B Converter Modifications.—Replace the 2.7K shunt feed resistor to the r.f. anode with an r.f. choke. Output improves enormously. Add an external cathode follower for best results. 6C4, 2.2K to 10K in the cathode, anode by-passed, 1K de-coupler to B plus, 0.001 uF output capacitor from cathode. Grid leak 100K to 470K, input coupling 100 pF. The i.f. coil feeds directly into the output, without a cathode follower the input impedance of the main rx damps things horribly. Converter covers from 43-70 Mc., about 800 Kc. fully sensitive on each of the five bands. Band 5 is the highest frequency. (3ZDG).

Valves.—6CK6: This is a video output pentode which is excellent as a crystal osc. multiplier, or multiplier. Can be used in place of a 6CL6 or 6AG7, same values, different socket. Short by-pass leads, direct to cathode pin, otherwise parasitics due to high gm. It is cheap. ECC189: A new double triode for cascade service. Gm 12.5 mA./V., base as 6EQ7, price about 20/-, limited supplies available. (3ZDG).

NEW SOUTH WALES

Meeting, 6/3/59.—A good attendance to this meeting heard three lecturers, firstly, by Keith Z2JK on a transistorised voltmeter, Bob ZASZ described the conversion of a 522 to 50 Mc. operation, and ZAWZ discussed a transistorised field strength meter. The lecturers were practical and interesting and gear was displayed by each speaker.

DX Trophy.—A proposal by the committee for an annual 2 mx DX award was approved by the meeting and was ratified in a subsequent committee meeting. The contest is now named "The VHF DX Trophy" and is to be awarded to the N.S.W. member or members of the W.I.A. who establish 2 mx communication over the greatest distance during the period of from 1st April and concluding 31st March the following year. The trophy shall be awarded for a period of 12 months together with a suitable miniature to be retained permanently. In the event of two N.S.W. members qualifying, the trophy shall be held by each for six months and each shall receive a miniature. Claims in respect to the contest should be forwarded to the N.S.W. V.h.f. Group Contest Manager. So there it is chaps, go to it and best of DX.

Coming Events: The May lecture is anticipated to be on 580 meg. gear and the usual day and evening events will be determined by the new committee.

2 Metre Activity.—Contacts over the 100 mile path to Newcastle have become more frequent and Z2DF and 2DL are worked consistently. Also Z2DC at Wyong has a good signal in Sydney. We welcome to the band Tim Z2TM who came on the air very smartly after receiving his call. Bob Z2QZ is back after a quick trip to India. Z2FC now has a good mobile sig. with a 3/12 in the final. Reports in to the 2 mx v.h.f. broadcasts at 7.30 p.m. Sunday evenings have been good, with up to 18 stations reporting.

6 Metres.—On Saturday of the Easter weekend 28/3/59 the band opened to JA8 and amongst those who participated were ZHE, ZABR, Z2CF and Z2DF, each of whom would agree that this was as good an Easter present as anything else; congrats, lads. Barry Z2AG has fired up on this band with a very big signal from a 6146. Local activity has also increased on 50 Mc.

Right, chaps, well that is about all this month and next month these notes will come via a new scribe as will the direction of the Group be determined by the new committee. Each of us on the committee have enjoyed our job and trust to have made some small contribution to the benefit of the Group.—ZAWZ.

VICTORIA

Skeds.—288 Mc.: 3ZCN (Ballarat) to Melbourne from 2000 each night Monday to Friday. Watch 144 Mc. around this time for the liaison set-ups. Freq. 290 Mc., 288.15 Mc. approx. 144 Mc.: 2AJ0 at Coolamon (near Wagga) on 144.31 Mc. Friday nights only 2030 hours. He transmits 2030, 2035, then listens. 80 Mc.: I am going to try and prepare a list of overseas "beacon" transmission times, and publish them next month.

80 Mc. DX: 1st March saw 3XD hearing two unidentified Ws at 0845 rag chewing. 18th March 3ZEN heard W6BSR or BSX at 0615. 28th March, JA8 stations worked at good strength in Melbourne from 1020-1215. 30th March, 3CJ worked JAs during the afternoon, HLKA was audible off and on from 1100 to 1500, and other signals were heard. 31st March, HLKA audible 1500-1505 (report from 3AZY).

3XD has his beam up over 70 ft., and looks like being one of the "big noises". He is willing to send c.w., so don't forget him if you want a few minutes practice (hope you don't mind me saying this, Dick). 3ALZ is disposing of all his gear, except for six, and is pursuing his studies at the University; best of luck, Ian.

144 Mc.: 3ZCW at Ouyen has been worked (in Ballarat, at least) most nights, and the reliability of contact seems very good. Activity is pretty poor, and you can't blame six, because very few of the old 2 mx gang seem to work on 6. Its probably that the old hands have tired of it, and the new blood has gone to six—if this is the case, there'll be renewed interest in two, when the new stations become established and go looking for fresh fields of endeavour.

Ballarat news. George 3ZEA has put in quite a good signal on a number of occasions. Hugh 5B was worked on Mar. 12, and 9, his signalling. 5B, Mar. 12, Peter 7FF was also worked. The sked with Ron 3ZER at Alexandra produced no results. Ron is now porting near Ararat until further notice. Gordon 3AGV at Colac has his new final in operation and has made his already paralysing signal in this area even more so. Stuart, the voice in the background at 3ZGG, has passed his A.O.C.P. and is building gear. Stuart will operate from Avoca. Several of the d.c. boys at Rainbow are now interested in 144 Mc. and should shortly be on the air. Ray 3ATN, Elrich is getting the v.h.f. bug again and plans to put up an umpteen element phased array for 144. 3AKR, Westmere, is planning on coming back on the air again.

288 Mc.: The Melbourne-Ballarat skeds seem to have temporarily lapsed since 3ZCN went on his holidays, but never fear, they'll start again as soon as we can catch Les! The following stations are crystal controlled on 288 Mc.: 3ZDG, 3ZAT, 3ZDO, 3QO, 3ZBP, 3ZAI, 3AUX, 3AAK, 3ZER, 3ZBP and 3ZAI have perfectly respectable v.f.o.'s! Ron 3ZER seems to have deserted us, as the word is that he is installing 6-2 mx in his shiny station wagon—but something had to go.—3ZDG.

QUEENSLAND

Another month of hectic activity in these northern parts which should make the other States envious. Last contacted KR6AK on Mar. 1, but both he and VS6CJ have been heard almost nightly under the mighty JA QRM. 4ZBE finally achieved the One-Day AJD award issued by the Himagi Radio Club to any station able to contact all JA districts in one day. Believe he is the first station to do this.

March 7 brought the good DX back with the appearance of KH6 BCF, CTC, UK4. Over the last month nearly every active VK4 has heard and worked them. KH6UK is the more consistent with his automatic c.w. and 700w. to a pair of 626s. They have been in almost daily and 4ZBE has had over 30 QSOs with them, many of the locals reporting likewise. At times the band has been open to KH6 from VK9XK up north to 4ZAK, 4ZGL and 4ZAA in the south. The KH6 gang do bemoan the fact that they can neither hear nor work VK2, 3 or other Divisions. Strange the Inverell gang cannot hear them. They have some rock crushing signals up here. Beaming on KH6 a pulse station with occasional a.m. is heard on 49.85 Mc. using the call signs 5KR and 3W2. Any information about these stations would be most welcome. A tape recording of the transmissions has been made, anyone interested can hear it by dropping 4ZBE a line. March 18, listened to a KO in contact with a W for one over, but nothing further. Bob 4NG has heard a KL7.

Here at last is enough information on that raw carrier on 49.8 to settle all arguments. The carrier is that of DUIGY, used for research on Back Scatter transmission and reception. His power rating is 5kw. The JAs monitor this for openings to DU. They say when DU-

(Continued on Page 20)

I.T.U. FUND DONATIONS

The Fund to raise money to send a W.I.A. delegate to Geneva later this year representing the Radio Amateurs of Australia is still open for subscriptions. Our original objective of £2,500 has not yet been reached, so that extra efforts are called for by individual Divisions and Radio Amateurs alike. Further efforts by way of official broadcasts, fund raising schemes by disposal of gear, etc., in Divisions and individual approaches to those who have yet to subscribe will all help—every little helps no matter how small. Many have already subscribed two and three times. If YOU are as yet a non-subscriber do not leave it to your fellow Amateur to subscribe for you—subscribe yourself—the small amount requested is little enough to pay for the benefits that can accrue from our delegate's presence at the I.T.U.

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A further list of subscribers to the end of March are as below:—

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ZLIPPJ—SCOUT JAMBOREE'S STATION

By J. F. Freeman, ZL1VA, President N.Z.A.R.T.

The original planning of the Pan Pacific Scout Jamboree's own Amateur Radio Station had provided for the station to be set up under canvas in Cornwall Park, One Tree Hill, Auckland, and from a radio point of view this would have been most desirable. However, as plans for the Jamboree developed it became apparent to the Boy Scout Association that a large scale Exhibition was desirable under cover and so our plans were changed to fit in with this altered thinking and ZLIPPJ was found a home in the special broadcasting studio in one of the permanent buildings at the Showgrounds, alongside the Jamboree Headquarters. This was a very satisfactory arrangement as we had a weather-proof, comfortable station with power and telephone facilities provided and were in a prominent position from a public relations point of view. The main worry was, of course, the much higher electrical noise level encountered, but now that the Jamboree is over it is felt that this disadvantage was outweighed by the fact that the location enabled more members of the general public, as well as Scouts, to visit the station and learn more of our hobby.

The station operated on all Amateur bands from 3.5 Mc. down to 50 Mc. and used four modes of transmission—c.w., a.m. phone, s.s.b. phone, and radio teletype.

Transmitters: On 80 and 40 mx ZL1AKW's rack mounted tx was used, comprising a Gelsoso v.f.o. and 6146 final amp. with a multi-band tank. Associated with it was all ZL1AKW's RTTY equipment which included a page printer.

20 mx: ZL1ARH's compact s.s.b. tx, which incorporates an Earnshaw Electronics Type 9A exciter, did service on this band. The p.e.p. was about 100 watts.

15 and 10 mx: On these bands two sets were used. ZL1AFW's rig (Gelsoso v.f.o. and 6146 final with a pi-net tank and multi-band aerial tuner) and ZL1KG's compact table-topper (Gelsoso v.f.o. followed by a QQV06/40 final amp.) shared the honors.

6 mx: On this band we used ZL1AKW's tx using p.p. 807s built into the same rack and using the same modulators as the 80 mx rig mentioned above.

Receivers: Various rx's were used on the several bands. They were: Collins 75A2 (ZL1AFW), G.E.C. BRT400 (ZL1AKW), R.C.A. AR77 (ZL1CH), National NC98 (ZL1ARH), and Hallcrafters S27 (ZL1MO). Also a special home-built s.s.b. rx by ZL1AAK and ZL1KG's all-band rx which uses plug-in converters. Both the latter were a real credit to their owners.

Aerials: A multiplicity of aerials topped the "Manufacturers' Pavilion"—many of them built "Scout fashion" with bamboo and rope! After all, the station was only on for nine days! We had 3 el. beams for 10 and for 15, and a two el. job for 6 mx. In addition, doublets were put up for 10, 20 and 80, while an 80 mx Windom was also used for the few contacts we had on 40 mx. Most of the 20 mx work was carried out on a ground plane.

Activities: Unfortunately the period of operation proved to be a poor one from a DX point of view and we did not have as many DX contacts as we hoped for. On the 3.5 Mc.

band all contacts but one were with ZL stations—one odd one was with VK2AD in Norfolk Is. on s.s.b. On 7 Mc. the main activity was the radio teletype circuit which operated twice a day to ZL1WB in Whangerei. A few other c.w. and phone contacts were had on this band mainly within New Zealand.

As was to be expected, the main DX activity took place on 20 and 15 mx with 10 mx active to a lesser degree due to the conditions prevailing. In the earlier part of the week it was the s.s.b. tx on 20 mx which brought in most of the DX but as the bands opened up later in the week the honours tended to become more even.

V.H.F. activity was limited to 6 mx. Most contacts were with ZLs but we were able to work ZL1GY in Invercargill and several VK3s in Melbourne.

By the end of the week the station had had 574 contacts in 40 countries and in all continents.

The station was on the air from 1320 hours N.Z.T. on 2nd January, 1959, and closed at 0058 hours on 11th January, the final contact being on 80 mx s.s.b. with ZL1GA in Invercargill.

Alongside the ZLIPPJ stand, which was behind plate glass windows in the broadcasting booth, another stand was laid out with examples of Amateur Radio equipment—both past and present—and this stand attracted a great deal of interest among Scouts and visitors to the Jamboree Exhibition. Possibly the greatest attraction was a Creed tape perforator upon which visitors were able to punch their own names and hear them played back on an oscillator at about 10 w.p.m.—a simple but attractive exhibit.

To conclude the story of ZLIPPJ, I feel safe in saying that those who took part, thoroughly enjoyed it all, and Amateur Radio gained a lot of worthwhile publicity. To those 574 stations who were able to contact ZLIPPJ we advise that QSL cards will be distributed through the various QSL Bureaux in the near future.

VHF

(Continued from Page 10)

1GY is heard the band is open to DUI and DU9. Have heard him pounding in here, but there has been no sign of other DU signals. Peak reception unfortunately does not coincide with the DU-VK speed period. They listen for VK at both 1200 and 2200 EAST, times when DUIGY never appears to be at his best. The more active DU stations appear to be DUIGF and DU9VVL.

For those interested in LU and other South American stations there is an f.m. station running 5kw. on 47.48 Mc. located in Argentine. One active station in India is VU2RM, but there are no further details to hand about him yet. A newcomer to the band here is Blue 4EY, running 15w. to an 832A, v.f.o., 5 el. yagi and using both m.c.w. and a.m. March 8 had a good Es opening to VK2, 3 and 5 for five contacts, but still no VK6—4ZBE.

The Badertin Story—JAs made their first appearance in force on Feb. 8 and have since been worked every day with the exception of Mar. 29 when no signals were heard. Some JA signals have been strong enough to copy without an antenna on the rx, sigs to R5. Incidentally, there was one VK/JA contact in Jan. 4HD worked JASAB on Jan. 11 at 0850 EAST, his signals 559 (A1). KH6 first came in this year on Mar. 7 and are still coming in. Number of contacts to Mar. 31 are KH6s BCF, 8 CTC, UK 11, CN1, W6BJG/KH6 6, KH6CAU, K9KVV/KH6. Sig. range all the way from 339 to 5 and 9 plus on phone. To KH6 land the band opens almost regularly at 1745 EAST for c.w. Phone from KH6UK a little after 1800. KH6 had their first opening of the year to ZL on the night of Mar. 30. Russ 5XK is also working into KH6. During the week ending Mar. 31, KH6 had good openings to LU, CE, CX and TL.

W6NLZ and W6PUZ made a welcome appearance for the first time this year on Mar. 30 at 0901 EAST. First QSO with 6NLZ at 0925, RST 335, second 0938 for 559, last 1006 for 589. W6PUZ first contacted 0942 for 339, again at 1015 for 599. Last sig. heard was W6ABN at 1055, his signals 339. The conclusion is that W signals are fewer, but peak signals higher. C.w. is a MUST. Had a scratchy contact with KR6AK, Mar. 14 at 2145. Worked Hughie VK5BC at 1245 EAST on Mar. 6, sigs. R5 S9. Still using 120w. to a 100TH, a 5 el. yagi, and a c.c.c. AR7—4HD.

Hore, VK2ZCH; W. McInerney, N. F. Black, K. C. Matter, R. H. Mondel, J. E. Shrubbs, J. G. Challenger, N. J. Finch (N.S.W.).

L. Laughton, VK3APL; L. White, VK3ZEW; K. Maroney, VK3IR; A. Miller, VK3AR; J. Cattons, VK3ALP; A. Lowe, VK3ALO; I. Thomas, R. Davey (Vic.).

O. Nattrass, VK4NO; R. Collins, VK4XK; A. Taylor, VK4BE; S. Armstrong, VK4SA; T. Barber, VK4ZBH; L. Murray, VK4ZBL; W. Van Der Est, VK4Z—; A. Boekholt, VK4LB. R. Champness, VK5ZCD; A. Mutton, VK6SZY; R. Fawkes, VK5FK; J. Porter, VK5PM; A. Drew, VK5LN; K. McLeod, VK5MT; E. White, VK5OW; R. Martin, VK5TM; B. K. Hajnski (S.A.).

K. Cook, VK6CA; F. Brown, VK6FB; F. Beadle, VK6FW; W. Redden, VK6ZAX; I. Clinch, VK6CL. A. Nutt, VK9ZAN.

Under £1/0/0:
E. Ashley, VK2AE (10/-); L. McGarrigle, VK2YG (10/-); A. Cheatham, VK2ADB (10/-); F. Pearson, VK2ACQ (10/6); A. McMahon, VK2ADM (10/-); D. Robinson, VK2AXR (5/-); H. Carter, VK2HC (10/-); D. Haberecht, VK2RS (18/-); B. Reed (N.S.W.) (10/-); Mrs. J. Reed (N.S.W.) (10/-); S.W.I. Group of W.A. (10/-).

The total subscriptions to the 31st March are: £2,115/5/0.

NOTES

FEDERAL

OVERSEAS COMMENT OF LOCAL INTEREST

The following, from the R.S.G.B. "Bulletin", is of interest to all Australian Amateurs:—

"So that the interests of Radio Amateurs in Region III, (Asia and Australasia) shall be adequately safeguarded at the forthcoming Radio Conference in Geneva, the council of the Wireless Institute of Australia has decided to apply to the Australian Government for one of its most experienced Amateurs—Mr. J. Moyle—to be attached to the official delegation.

"The cost of sending an Amateur Radio delegate from Australia to the Geneva Conference is expected to be in the order of £A2,500, the bulk of which has already been subscribed voluntarily by public-spirited members of W.I.A. and others interested in the Amateur Radio movement in Australia. But how pleasing it is to learn from "Break-In", the official journal of the New Zealand Association of Radio Transmitters, and from the "News Letter" of the Hong Kong Amateur Radio Transmitting Society that members of both those organisations are also making voluntary contributions to the fund opened by the W.I.A."

FEDERAL QSL BUREAU

The C.C. (DX Hunters' Club) in Beira, Mozambique, is again staging an International DX Contest. This year the dates and times set down are from zero GMT August 15 to 2359 GMT August 25. The contest is for both c.w. and phone. Full details have been sent to all Divisional Bureaux.

A DXpedition is being undertaken by IT1ZGY to the Pelagias Island. He will be active from 2000 GMT April 24 to 27 except, as he says, for time off for meals and smoking. Due to lack of early advice his trip will be over before these notes reach the printed stage. IT1ZGY is confident of the Pelagias Island being recognised as a new country and he hopes to be issued with the call sign IF1AA or IP0AA and plans to use 14 Mc. both phone and c.w. If a new call sign is not issued to him he will use IT1ZGY/IP. Address for QSLs is via IT1TAI, Box 300, Palermo, Sicily. S.a.e. will secure direct replies, otherwise via Bureaux.

The V.R.Z.A. have issued a Dutch DX Certificate. Requirements are contacts with 25 PA stations, with two PJ stations situate in dif-

ferent districts of the Antilles, and one PZ station. Applications with QSLs and five I.R.C. should be sent to V.R.Z.A., Box 190, Groningen, Holland. Contacts must be subsequent to December 31, 1945.

OE1HJ under date of 26 Dec., '58, bemoans the non receipt of QSLs from VKs 2FU, 2ZR, 4CG, 4ZB and 5NO.

Anyone who contacted the Chilean DX-pedition to the Chilean Juan Fernandez Islands in January last should send QSLs to R.C.C.H., Box 761, Santiago, Chile.

KZ5BB, Geo. Hamilton, writes notifying that the station was closed down in November last consequent on his return to the U.S.A. States that any station who has not received a card should apply via the W4 Bureau. George hopes to have the call sign K4AE by now.

According to BERS195, MP4DAA is located on Das Island, 150 miles s.e. of Bahrain. The owner, Andy Goodwin, says Das Island is one of the many links to the Trucial Oman States and efforts are being made in the right quarter to have Das Island recognised as a separate country. (Where will this new country racket end? Probably with the issue of a "Fly Speck DXCC" Award). Cards for Andy should be sent to Box 330, Bahrain Island, Persian Gulf.

Erik Friedmann, operator of 4X4WF, is a very thorough Ham and a stickler for minute details on his QSL card. Early post-war Erik operated SP6WF. Erik, who is a Doctor of Medicine, enjoys rag chewing as well as DX hunting and his 25 watt sig. on 7 and 14 Mc. c.w. is heard near and far. QTH is Box 200, Tiberias, Israel.

Unless more notes are received, these notes will appear at quarterly intervals, as writer now too busy to do much "snooping" and "mail reading".

—Ray Jones, VK3RJ, Manager.

NEW SOUTH WALES

TENTH ANNUAL URUNGA CONVENTION

The tenth Annual Urunga Convention was conducted during East week-end and was attended by 36 licensed Amateurs, 9 Associates and numerous XYLS and harmonics made up as follows:

VKs 2BZ, 2EO, 2ER and XYL 2FH and family, 2FP and XYL 2GC, 2JS, 2PM and family, 2PY, 2RU and XYL 2SF, 2UG, 2WQ, 2XO and XYL 2XS, 2XT, 2ZX and family, 2ABU and family, 2ACU and XYL 2ADN and XYL 2AGS, 2AHA, 2AHH, 2AJQ and family, 2ALJ and XYL 2ASZ and XYL 2AUM, AWG, 2AWY, 2ZBX, 2ZCQ, 2ZEL, 2ZJC, 2ZMO, 3ALQ and XYL, and 4GG. Associates Bob Bailey and XYL, Barry Cartwright, Norm Dash, E. Leszinsky, Ken Mattie, Snow McCawley, Harry Miller and XYL, Norm Moody and XYL, and Fred Reid.

As you can see, Urunga has not only maintained its attendance figures over the last few years, but has increased in popularity. The fellowship and fun to be enjoyed at this gathering cannot be surpassed and many have in fact already reserved their accommodation for 1960 so that they may once again renew friendships, hold post mortems on all subjects and thoroughly enjoy themselves in pleasant surroundings.

Organisation this year was in the hands of Red Pike, 2ACU and a committee which included Crie 2XO (the originator of the convention) and congratulations go to them for a successful function. Particular mention must be made of their XYLS, Betty and Jean, who did so much to entertain the other XYLS.

The various competitions resulted as follows: (1) 40 metre tx hunt: 1st 2FH and Assoc. Norm Dash in conjunction; 2nd, 2PM. (2) 144 Mc. tx hunt: 1st, 2AHH; 2nd, 2PM. (3) Urunga Scramble: 1st, 2PM; 2nd, 2AHH. (4) Longest distance travelled to Convention: 3ALQ. (5) Lucky registration number: 4GG.

The 40 mx tx hunt was a new innovation for Urunga and it provided a new experience even though it was accompanied by much wailing and gnashing of teeth! Most entrants used last minute manufactured loops which were rendered useless when heavy rain fell and shorted out tuning condensers, etc. The successful competitors "talked" their way in on 40 mx whips with the aid of clues given from the hidden tx crew.

The 144 Mc. hunt was much easier than in past years, mainly because the wet weather precluded the use of some forest roads. Nevertheless, some finished up in strange places, including 2ASX who finally found the tx by emerging from between two doors, one being labelled "gents" and the other "ladies"! By way of explanation, the tx was hidden on a hill which provided a magnificent panoramic view of Bellingen and the Bellinger Valley. Alongside the hidden tx was a rubbish (now perishable) dump which among other things

contained two discarded buildings, bearing the aforementioned name plates. Unlike the rest of us who drove to the site, Bob had to be different and deserted his car, climbed the back of the hill on "shanks" and emerged from between the doors! Alan 2FH found the tx even though he was using a walkie talkie with a dipole antenna! A good effort Alan.

Crie and Jean Retallick again entertained us in their "Do-Me" boat shed, where Jack Gerard screened several films including one of his own taken during his recent visit to U.S.A. and Canada. The company then feasted on bananas (courtesy 2AWG), biscuits and cheese, hot dogs and of course an 809 was left with no emission whatsoever.

The official part of the Convention concluded on the Sunday night with a concert presented by Jack Gerard and a spirited auction conducted by Alan 2FH, together with a delightful supper provided by the Urunga Progress Association.

Our thanks for a successful convention are due to many people, some of whom have already been mentioned, and some who are unknown to your scribe, such as the person who kindly donated the clock which raised just over £12 for the I.T.U. Fund. We thank you all for a job well done.

Many reminiscences can be enjoyed when one thinks back over the convention. For instance, a passing pee-wit successfully dive bombed Ted 2ZX and left a dash of white right in his eye. We've got photos to prove it too! The stories that were told and experiences related will never be forgotten. If you want to join in the fun, plan now for Urunga in 1960.

—Noel 2AHH.

HUNTER BRANCH

Another Branch year is behind us—quite successful in lots of ways, but larger attendances at meetings would be more pleasing. Your President, Lionel, read his concise and excellent report after thanking the Divisional President for his attendance. Meetings were held every second Friday of the month with the exception of January. Those specifically thanked were: the College Warden for meeting facilities, Gordon Sutherland acting cum social secretary, W-P Stuart Fairbairn and Varley Filton of disposal delivery. Treasurer Bill Hall for social evening accommodation and Bob Rose, columnist. Prior to election of officers for the year, Pierce took the chair and thanked the outgoing committee on behalf of himself and his Council.

The following were elected: President, Lionel 2CS; Vice-President, Bob 2AQR; Sec. and Social Sec., Gordon Sutherland; Treasurer, Bill 2XT; Social Treas., Bob Bailey; Liaison Officer, Stuart 2ZDF; Correspondent, 2AQR.

Speakers, both local and guest, provided a wide range of interest during the year: Hans 2AOU, rx selectivity; Bill 2ZK, atomic clocks; Lionel 2CS, s.s.b.; Stuart 2ZDF, Commands; Barry 2ZAG, valves and transistors; Bob 2OA, v.h.f.; Joe 2JR, this and that; Maurice 2PW, mobile, and Wal 2AXH, on tape describing slides of N.Z. It is hoped that a similar full year will be presented to you. Pierce kept his oratorical prowess within reasonable limits affording the gathering an opportunity to express their views on the agenda of the Federal Convention.

Those present included VKs 2APQ, 2XT, 2CS, 2ZMO, 2RJ, 2ZDL, 2ZDF, 2SF, 2KQ, 2AFA, 2ZL, 2AOR, 2CN, 2ANA, 2QB, 2AQR, and Associates Sutherland, McLachlan, Hall, Bailey, Jackson, Jayne, Foster, Gray, Stobbs, Hamilton and Davis. Apologies were received from 2FP. Who was it that talked into the dial of his rx instead of his mike? Congrats to Bill 2ZL for receiving card confirming contact with Panama on 7 megs. Heard 2XT working 2FP on 40—I repeat, 40—good heavens. Mention must be made of the tape by Max Hull on the I.T.U. Fund—the oration would squeeze blood out of a stone. Those die-hards who haven't yet paid up must have turned their sets off.

Still good to hear the pips of Ron 2ASJ during 2AWX's broadcasts. What silly lengths some chaps go in in order to get their name in my notes. Your Secretary, Gordon, had an argument with a man on a motor bike and lost. However, Gordon came out of it with a few stitches where it won't show when he wears long trousers and is now doing quite well, thank you. 2XT, 2FP and XYL 2BZ and XYL 2AHA, 2SF and 2ZMO were visitors to Urunga Convention over Easter and despite the threatening weather, no inconvenience was experienced from same. Bill 2XT was third in the 7 meg. scramble, Harold 2AHA third in 144 Mc. hunt, whilst both these boys tied for third in another event. Don 3ALQ was there for his seventh consecutive year, whilst that Iron-horse, 4GG, got a banana for the lucky prize. Bill tells me that Crie 2XO entertained with some really good slides of N.Z. whilst

CONTEST CALENDAR

Compiled by W.I.A. Fed. Contest Com.

★

OZ C.C.C.:

Date: May 3-4.
All Bands.

U.S.S.R. WORLD CONTEST:

Dates: 2100 GMT 15th May to 0900 GMT 10th May, 1959.
Rates: Elsewhere this issue.

HELVETIA 22:

Date: Third week-end of May.

REMEMB. DAY CONTEST, 1959:

Dates: Saturday, 15th August, to Sunday, 16th August, 1959.
Duration: 1800 hrs. E.A.S.T. to 1759 hrs.
Rates: As for 1958 (Watch "A.R." June 1959).

VK-ZL DX CONTEST, 1959:

Dates: Phone—1000 GMT, Saturday, 3rd Oct.—1000 GMT, 4th Oct.
C.W.—10th Oct.—11th Oct., 1959.
Rates: Overseas—as for 1957.
VK-ZL—Bonus value altered (Watch "A.R." August 1959).

"CQ" WORLD-WIDE:

Dates: Phone—Last week-end Oct. '59.
CW—Last week-end Nov. '59.

Jack ZADN, of Coffs Harbour, flashed his 10 mills. on the screen.

Hearing that 2ZL has been beaten by all comers at billiards, Harry 2AFA paid him one of his rare visits and came away well satisfied with himself. However, Bill rehabilitated himself at the last social in the House of Hall by beating the host, but I bet you are not game to ask how Bill beat Bill.

This month's meeting will be held as usual at 8 p.m. at Tighes Hill Tech. on the 8th, while Bill Hall will challenge all-comers at the Oriental, Bull St., on 27th. We will be there, will you?

VICTORIA

From all accounts the Federal Convention, held at Easter in Melbourne, was an outstanding success. Most of the items on the agenda were dealt with in reasonable time and with a minimum of argument. It would appear that the bigger things such as the briefing of John Moyle for the I.T.U. Conference had dwarfed all the usual contentious items into insignificance. This augurs well for our support of John in this exacting task which he has undertaken on our behalf and all that now remains is for the bulk of the members to support their representative's lead in this regard by carrying out the suggestions put forth by our Federal President in this matter. Our motto should be "do it now" before it's too late.

This year's Convention was the first to be held in the new rooms of the VK3 Division and for this reason must go down in the annals of W.I.A. history. Acting as host State to the Convention is quite a big job and congratulations are due to the organisers of this event.

As is usual, the April meeting night just past was the annual general meeting, followed by an ordinary meeting. Unfortunately, it received much the same treatment as the March meeting in that very few turned up, about 51 to be exact. As a result, the meeting seemed to lack its usual spirit and there was only a spasmodic burst here and there to break the unusual quietness. We sure seem to be degenerating into a body of couldn't-care lessers. It beats me how our office-bearers bother to carry on considering the support they get.

One of the main jobs of the night was to obtain nominations for President of the Division. Fred has completed two years in this office and has declined nomination for a third term so it was on, as the saying goes, for young and old. After the smoke and fire had died down, we were no further forward and it was left in the hands of Council.

Fred's work over the past two years as President is known to most of us and there is no denying that he has done a particularly good job of work in the true tradition of the post. He has always handled our meetings with true decorum and has never failed to produce the best in the way of lectures. These are the things the average member sees and can appreciate, but Fred has not stopped there. He has done an equally commendable job behind the scenes where few of us have seen him in action. His most exacting task was arranging the move of 3W1 to the new rooms. Under Fred's guidance and the assistance of those who rallied round him the move was completed with hardly a hitch. This was no mean task and involved him in an enormous amount of work and time. A vote of thanks was passed to Fred by the meeting for this work.

Our new Council takes office very shortly also, and nine nominations for this job have been received. Last year ten was the number, so there will probably have to be a whip around to fill the quota. The final position with regard to Council and our new President will no doubt be announced next month.

The Editor of "A.R." read the Publication Committee's annual report which brought to light some interesting facts on the time spent by this committee in producing our magazine. A plea was made once again for more assistance on this committee and for more technical articles to enable this important work to be carried on in the proper manner. In some respects our magazine is akin to our frequencies in that it keeps our organisation alive, so in this, if in nothing else, we must lend our active support to the utmost of our ability.

Owing to a delay in the preparation of the Treasurer's report, the meeting was adjourned at this juncture and will be continued at a subsequent meeting.

The general meeting which followed brought forth various reports and it was noted that

VK7 has taken over the duties of Contest Committee from VK5. This latter State has been carrying out this work for quite some considerable time. All reports indicate that visits to places of interest, field days, fox hunts, tx hunts and the like are still taking place, so lend your support where possible. The silent service, our bureaux, are also still very much on the ball in the capable hands of Noel Stork and Ivor Stafford, and last but not least our Council is very active if attendances are any indication. The member situation is also holding its own with a surplus of joinings over resignations and new members admitted at this meeting were R. B. Wallace (3UW), R. G. Davey (3ZEX) and J. D. Green (s.w.l.).

A busy visitor to Melbourne from the Apple Isle is Keith 7RX. He is visiting as many shacks as possible. When last seen he was swapping fishing stories with George 3AHN.

Sorry chaps, the title of the next lecture was not known at the time of writing, so listen to the Sunday a.m. broadcasts for details.

NORTH EASTERN ZONE

Stan Ferguson, of Tongals, not doing much hamming these days. More interested in t.v. I think. Peter 3APF building new 2 mx beam

and having quite a convention on Saturday afternoons with Ham visitors. 3KR working DX with a quad. John 3ACW has built a new shack out back and is removing from the house. We congratulate John and XYL on the arrival of another harmonic. Sid 3CI is tearing down his antenna farm for re-erection at another QTH about half a mile away. 3AGG's XYL was away at Easter, so Bruce migrated a few streets to Les SALE, who is moving to VK4 land in May.

From 3AUL we have the following: The zone hook-up on 80 mx is building up in numbers, but no Shepp. boys heard (shift workers, Arthur). Bill 3AHO has an 80 mx dipole in the air again and putting out a really fine signal. Vern SAXW also a regular on 80 mx as is N.E. Councilor—Col 3WQ. George 3ADZ back again after a lengthy absence. 3UW, of Bandianna, has been welcomed to the hook-up and is also engaged in modifying an AT21. 3AUL has at last broken the sound barrier on 20 mx with KX, KH and a VK9 on phone and Ws on c.w./ It is learned with regret that Jim 3JK is migrating to Mount Eliza and so from this zone we wish you the best of luck, Jim, in your new QTH and happy swapping.

From 3KR Benalla. (This I must comment on. Magazine arrived Benalla, Tuesday, letter re-

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calved on Wednesday. Some pin I used to break the silence barrier! However, Ken reports Keith SDW is building barricades to keep junior ops. in, still manages to keep skeds on bush fire nets every Sunday and work about umpteenth hours a week.

3AHF still working 80, 40 and 20 with a modified AT3 rig and BC348 rx; just returned from annual hols. to find a t.v. set installed next door. Wacko, t.v.i. and holiday smiles disappear. Bill 3JP on vacation in VK5 land, no portable equipment by order of KYL. Jack 3PF has his worries since 220 k.v.a. lines have been switched on 200 yards from his back door. Why don't you use the pylons for a rotary beam, Jack. David, the junior op. at this QTH has constructed a t.v. set which really works and gets good results using a rhombic antenna.

In closing, Ken exhorts me to use all the bands and to get on 40 every Sunday. Sid 3CI exhorts me to get on 8 mxx any time, Arthur 3SAUL wants me to write for the Sunday morning broadcast (I think) and the KYL wants . . . etc., etc. Haven't the space left!

WESTERN ZONE

Keith 3AKP, of Stawell, has recently completed building his own t.v. set with excellent results. He is now working on his higher powered rig, so expect to hear Keith in the near future. Chas, ex-3IB, is on the air from the Gilbert Islands with call sign of VR1B. At present he is working c.w. on the 14 Mc. band and expects to be able to work phone as well at a later date. Reg 3ZFD, of Horsham, is active on the 2 mxx band and has been working with the local boys.

QUEENSLAND

MARYBOROUGH

4AI came up on 20 mxx for the first activity in months, using a dipole. He is getting a 3 el. 15 mxx beam going. 4DJ has a new type of antenna, a folded quad, due to a support breaking. How's the field pattern, Graham? Is working on a copy of the Viking table-top tx. Was there a romantic background to Graham's recent visit to a northern VK3 40 mxx station?

4GH checked up on his rx a year ago and now reports having switched on his v.i.o. No doubt the final is due to go in 1960, and a QSO should result in 1961. Can't you improve on that Gordon? New ones were worked on 15 mxx by 4CB (VP3) and 4BG (FC and PZ). Arch 4CB has been heard lately on four bands but QRT at the moment with broken feeder line at the G4ZU end. 4BG lost an 886 jr. rectifier. Wondered why only S3 sig. going out on 40 mxx and found the feed line shorted out by Mum's indoor clothes line. Ron gave a talk on Amateur Radio at a meeting of the local Engineers Institute and didn't forget to stress the value of Ham work to the community. At the end of the talk invited all present to his shack. A dozen engineers turned up and had a QSO with two Darwin stations.

TOWNSVILLE

The Federal Executive is to be congratulated on the fine article in April issue of A.R. It certainly contains some juicy points for discussion at the various branch meetings. It is not just sufficient to say "Oh I have read it" and most likely missed the salient points. Take Max 3ZS' stirring appeal in his article to use the bands and to compare the findings of the Radio Inspectors and others in monitoring the bands and then cast your mind back to the last R.D. Contest, when you struggled hard through the QRM to get that coveted number to help your State along to win the trophy.

Again he mentions we have 3,500 holders of licences; think, and think deeply, about some of the call signs. Have you or anyone else ever heard them? Again the Radio Inspector's report no station to inspect. Why? Because there are some license holders who automatically get a call sign when they apply for one because they hold higher qualifications than the A.O.C.P. Others who gained the coveted A.O.C.P. came on the air for a couple of years and then tired of it, gave the game away and dismantled the station, but still pay the yearly fee for their licence. How many of the latter in your district?

The other article by ZL1AAX will certainly cause some heated arguments. Don't blame my carrier, it must be your receiver? I hope this article will clear up doubts in my mind re s.s.b.

The last meeting of the local radio club was again well attended, 18 being present. As Alan

4PS was absent, the chair was taken by John 4DD. Two new members were enrolled, namely, Mike 4OM and Associate R. Keogh. It was decided that the new Radio Handbook, 15th edition, be purchased and placed in the library for use of members; certainly the club will soon possess a very fine technical library. The Publicity Officer, Frank 4PF, outlined his ideas for bringing before the public the aim of Amateur Radio and appealed for photos of the different Amateur Stations in the district and he had obtained a good hearing with the local daily paper. The other officers of the club gave a report on their activities during the month. Keep this up and we can hold the enthusiasm of the members and they will keep on attending. It only requires a little slackness on the part of the various officials and the meetings will soon become dull and boring and attendance will drop off.

The speaker for the evening was Bob 4MF, who gave a very interesting lecture on the electrical system of the motor car, bringing along the various switches, diagrams, etc., as used on the present-day car. He also brought along a board wired up with a kitset of Bashing indicators which will be used on the well known Australian car. I might say this created great interest and many questions, which he soon answered. Unfortunately, the board was kept under close security and was unable to be mislaid.

Bob 4MF was heard testing his new cubical quad and given assistance by 4PF and 4EJ. Will it beat the old beam? Eddie 4WH, Wai 4RU still not on the air after telling the boys about their re-building. I often wonder when I will hear the following local call signs on the air: 4AE, 4DH, 4HF, 4HV, 4JH, 4QZ, 4RI, 4TQ, 4WT and 4XH.

Bazil 4ZW sent along the following: A new Ham has arrived on the Tableland—4ZBJ, ex-Brisbane, and I hope he introduces new blood into the northern boys. (The Tville gang will be glad to listen for you, John.) Alex 4MA apparently lost in the big ditch they dug near his QTH as he has not been heard. Harry 4HK heard asking details of how to apply for a licence to go portable. Look out you city slickers, and nail down your gear. Harry 4OH, the milko from Mossman, too busy to come on the air. (Remember, the more you earn, the more tax you pay!). Take time off to rag chew with the gang. Arthur 4SM now gone high power, purchased an 813, while Ted 4MH spent his surplus on fishing gear. Roy 4AX broke the long silence and spoke to 4ZW; blow some more dust out of the rig and come on more often. Claude 4ZY and Bill 4XM rag chew all night on the old days. Visitors welcome to break in. Bob 4TK recently spoke of the miss in his car and a rude interjector wanted to know what the XYL had to say? Bob also disappointed about lack of disposal gear being made in Queensland. Harry 4ZP on long service leave and spends his time monitoring the bands.

SOUTH AUSTRALIA

Following the elections last month, the following officers were appointed for this year: President, B. W. Austin (5CA); Vice-Presidents, L. F. Brice (5OK), E. C. Daw (5EF); Treasurer, C. Appleby (5ZBV); Secretary, J. C. Haseldine (5JC); Publicity Officer, W. W. Parsons (5PS); Minute Secretary, L. F. Brice (5OK); Sub-Editor, E. C. Daw (5EF); Technical Officer, E. A. Barbler (5MD); Membership Organizer, L. Duncan (5AX); Operator of SWI, G. M. Bowen (5XU); Rep. on Moon Watch, 5XU; QSL Officer, G. Luxon (5RX); Communications Officer, Joe Kilgariff (5JT); Associates' Rep., L. Duncan (5AX); T.v.i. Committee: R. Tuck (5BT), B. Roper (5PU), C. Tilbrook (5GL), John Bulling (5KK); W.I.C.E.N. Com.: J. Hazeldine (5JC), J. Bulling (5KK), B. Austin (5CA), R. Richards (5DO), E. A. Barbler (5MD); Disposals Com.: E. A. Barbler (5MD), J. Vivian (5FO), C. Appleby (5ZBV); Programme Com.: R. Roper (5PU), N. White (5ZAW), J. L. Watts (5OM).

So there you have it fellows, any problems you may have, find the committee or person they fit, and put them up. That's what the Council and Committees are for, so use them.

Apart from some changes in personnel you will note that this Division no longer runs the Contest Committee, having served its term in that capacity, such passing to another Division. We were sorry to lose the services of Norm Coltman who had done so well as Assoc. Rep. for a long time, but he had to pull out for private reasons, but promises to be around to help on occasions.

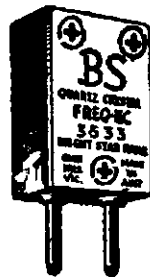
We were all delighted at the last meeting to see Joe 5JO, who attended for the first time since his illness. Joe looked fairly well, and advised starting work again, take it easy Joe and continue the good progress.

The "Tender" night drew its usual big crowd and saw an almost record volume of gear change hands under the tender care of Pansy 5PS and Norm Coltman, some quite good items were included and some bargains obtained.

After the meeting closed, Doc 5MD was taken home by a certain country member, who this time safely negotiated the complicated West Terrace turn and arrived at "the" place without any motor cycle escort. How we improve.

News from 5WC, not over plentiful, but appears that the new shack is finished, but not yet occupied, Burnie's shack being the centre for the time being. Ron 5FY has left up there, and taken up residence at Elizabeth, thus adding to that happy gang. Last heard of he was trying to work out multiple converters, etc., to be able to join the Gawler v.h.f. net. Welcome to the South, Ron.

Tubby 5NO putting in some good work recently in relaying W.I.C.E.N. tests. On one occasion he had some bother with the modulator, so fixed up some audio on the keying tube screens. Not stuck for ideas and just won't be off the air for any minor fault like that. No Sir!



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Brian 5EM from Ardrossan had a peculiar complaint recently, "no background noise at all;" thought his rx was on the blink, things being so quiet. There is an idea Les, migrate to Ardrossan. Yes, Les 5AX still plagued with high noise a-la-the 50 cycle lines.

Heard on s.s.b. recently: Bram 5AB, George 5GD, Jack 5OM and with Reg 5RR and Ron 5AP on d.s.b., you can see the cult is growing, this QTH has used it for quite a while and kidding the nearest Ham into it too, so look out for him soon.

John Hemphill, 5SJ (formally 5BJ) now back in VK5 and looking for contacts on the bands with his former cohorts. Also interested in forming a t.v. section. His working QTH near Pansy, so watch out my portly friend.

Another transfer to t.v. in Adelaide is Col 5CJ, who thus leaves Mount Gambler for warmer climes.

Had a note from John 5ZAZ recently and he points out a new form of interference, but this time it is known as R.I., i.e., refrigerator interference, his fridge busts up c.w. and s.b. reception on a B28 rx. His power source is a 1.5 k.v.a. alternator with voltage regulation capable of 2v. variation from full to no load, yet when tuned to c.w. or s.b. without the fridge on all is well, but as soon as the ice box comes on, out go the sigs. His explanation being that a phase shift takes place when the motor comes on. There is an idea for a phase shift rig (Les ZLIAAX, please note).

Kenneth 5XA reports re Hughie W4BSB, who is an associate member of this Division and is recently granted a grey beard certificate. Hughie was first licenced in 1924 and used the call sign of 3FK until 1931 when he changed to W3BSB, and became W4BSB after W.W.2 when the call districts were changed. He has been active all that time and at present wants an 80 mx contact on c.w. from Asia for W.A.C. Radio sigs. branch of the U.S.N. kept him busy during war years.

In course of a "walkabout" recently went past Austin 5WO's QTH and saw the wreck of the old tower and beam, a real bad job and a complete write off. Austin is replacing same with a new 65 ft. job with all mod. cons. ex a certain northern airfield, should be a show piece when completed. Some pictures of that and the shack for "A.R." sometime, please.

Had a visit from Gordon 5XU, Gramme 5XV, George 5EC, with some XYL and YLs recently, the highlight of which was Gordon's XYL's remark whilst we were in the workshop nattering, about an hour beyond take-off time. She popped in all sweetness and smiles to say, "Just popped in to let you boys know that we are not waiting on you".

Learned during the visit that George and Gordon are working on the "third method" of s.s.b., so there is some more interest coming up. Les 5AX is to use the "fourth" method, you couldn't place him using anything orthodox, and as a preliminary had a try out by putting his carrier on, unmodulated, with me on the same frequency on upper sideband, so that my tx modulated his carrier. Seemed to work, too, and SWI read it as a.m. We had to be the first to try it anyway.

Doe 5MD continues to put on a slow morse session each Sunday night at 9 on 80 mx for benefit of those learning or wishing to keep up practice. A remarkable number of comments arise from all parts re this service which is well received. By the way, if you know a more complicated or difficult assortment of code groups than those he uses, send them to him. He has some beauties as it is.

News on the current classes continue to be good with a lot of keen types persisting in their studies, a continuance of activity is promised whilst these new members keep coming up each year.

TASMANIA

The Annual General Meeting of the VK7 Division has asked me to be Divisional correspondent for the next year. I have a lot to write about this time. I hope this will always be the case. On 11th March, Bob 7AF provided a film evening in the Southern Club rooms at a social gathering. This function was a great success, and a pleasant time was had by all.

On 14th March, the Annual General Meeting of the Division, followed by the Dinner, were held. As a result of the elections to Council, and as a result of the election of officers by Council, we welcome Lon 7LJ as our President for this year. The dinner was a huge success. Considerable interest was taken by all present in a bottle of capacity 9 gals., and I am pleased to say that no residual capacity was left in same at the end of the festivities, as all the energy had been successfully transferred. Our visitors from the Northern and North-Western Zones were very prominent throughout the evening. Personally, I thoroughly enjoyed meeting them all for the first time.

At the meeting of the Southern Zone held on 1st April, we enjoyed a very fine lecture delivered by Joe 7BJ, the subject being Oscillators. The address was taped with the aid of Barney 7ZAK, and Lon 7LJ is preparing a strip of the diagrams, so that the other zones can receive the benefit of this fine lecture. We, in the south, will be very interested to learn how the lecture pans out in the other zones. We were also pleased to meet Trevor Z55KD at this meeting. Trevor should soon have a VK7 call sign.

Considerable interest has been shown in the two playings of the tape by our Federal President, dealing with the subject of the I.T.U. Conference. Such a tape can only serve to improve the solidarity of Amateurs, and I hope that Federal Executive will more often resort to the use of tapes to keep us alive to current matters of great importance.

Keith 7RX is spending three weeks in VK3 as from 5th April. Joe 7BJ will be out of the State for three months from some time in May. Our congratulations are due to Snowy 7CH for having obtained cards in confirmation of his having worked all zones. We are anxiously awaiting the chance of seeing his Award Certificate. Peter 7PD, our Immediate Past President, expects to QSY permanently to VK4 in the near future. Our best wishes go with you Peter. Edgar 7RY has now got a tx on the 50 Mc. band and is looking for contacts. Our Patron, Len 7BQ, took part in the round up of 5th April; let us hear from you more often Len. It is alleged that Bill 7TE was heard to utter several words on the 40 mx band several weeks ago. How about a QSO, Bill? I worked WIUC the other evening; he tells me he has had his licence 52 years.

Jack 7JB tells me that he worked 478 Ws during one week-end of the recent Contest, mainly on the 28 Mc. band; a very fine effort, Jack. Ted 7EJ attended the recent Federal Convention over Easter as our delegate. Having talked to him since his return, I have not the slightest doubt that Council will receive a full and interesting account of discussions at that Convention; good work, Ted. Terry 7TT continues to put in a good signal in the south with the kitten power of 8 watts. I continue to marvel at the 100 per cent. modulation put out by Max 7MX; I don't know how you do it, Max, and without any sign of splatter. Ken 7KA is to be commended for the way in which he re-broadcast the tape of the Federal President, excellent quality Ken. Best 73 for this month, 7ZZ.

NORTH WESTERN ZONE

Well chaps here we are once again. I have just arrived home from the last zone general meeting which was held at the usual QTH. It was the best attended meeting since I have been associated with the zone, there being in all 29 bods present; hope we can do even better at the next one. Next meeting will be the usual lecture night and I believe there's plenty of interesting and instructive matter arranged for presentation, so don't miss out, especially you associates.

In addition, weekly night classes of instruction are being arranged here in Ulverstone and the organisers hope to get several associates to attempt the October exam. and pass, too, but it will have to be a concerted effort by all participants.

A tx hunt was held on 22nd March which was fairly well attended, but many more contestants are desired. Harold 7MZ and George 7XL together, were the first home on the morning run; yours truly getting sadly lost. A good picnic lunch was enjoyed by all whilst the fox, Max 7MX, sneaked off and hid once more. The afternoon hiding place proved to be about the windiest place anyone could find, but fun was had, also afternoon tea and a good chinwag.

It has been decided to hold a zone hook-up at 2000 hours each Tuesday on 40 mx, but should 40 prove unsuitable, 80 mx will be utilised. We sincerely trust fellow Amateurs outside the zone will not crowd us too closely on the band. We feel it will be a good way for associate members to follow zone doings via another medium. So don't forget, 2000 hours each Tuesday.

A collection was taken up among those present and the sum of £6/10/0 will be forwarded on to swell the I.T.U. Fund. There is still room for more donations, so anyone who reads this please do your utmost to help raise the funds necessary to send our worthy representative, John 2JU, to the Conference.

Another tx hunt is mooted for the near future, but more of that at a later date.

Our next combined zone meeting (lecture night), will be held on Tuesday evening, May 5. Keep the date in mind also the following general meeting on June 2.

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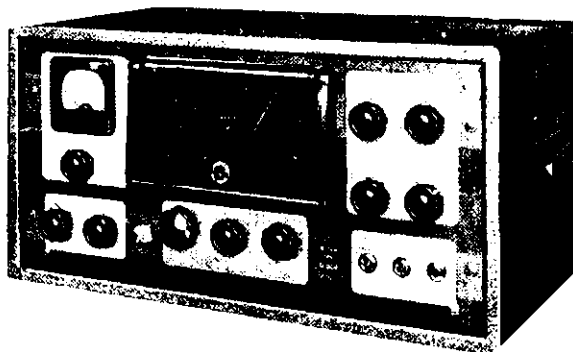
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 5710 Kc. 6423.333 Kc. 8161.538 Kc. 8562.857 Kc.
 5810 Kc. 6450 Kc. 8360 Kc. 8645.45 Kc.
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AMATEUR RADIO

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VK9WI: Sundays, 0830 hours EST, simultaneously on 3650, 7146 and 14342 Kc. Individual frequency checks of Amateur Stations given when VK9WI is on the air.

EDITORIAL



TO GENEVA—WHAT THEN?

In the near future, at Geneva, a group of men will gather around the conference table and form opinions and come to conclusions regarding the pattern of the Radio Frequency Spectrum for some years to come. The result of their deliberations will effect many people in various walks of life throughout the world. Not least among these will be the Radio Amateurs.

The recent announcement by the Postmaster-General as to the proposals for the frequency allocation of the Amateur Service has brought forth a great deal of comment. The suggestion that the present narrow bands available for general communication be reduced still further is a devastating blow at the Amateur generally.

Apart from the fact that the Amateur is of especial value to his country both in peace and war, the Institute firmly believes that the extremely narrow bands even now available are totally inadequate for the purposes of private radio communication. These frequencies, small as they are, are the final strongholds of personal freedom in the radio spectrum. They are the only places where a radio operator may exercise his rights as an individual. Here an operator may utilise what form of transmission he desires; he may speak with whom he pleases; he may discuss any range of normal subjects; he acts as a free loyal citizen and subject of his country.

What is going to happen if, due to continuous paring, the Amateur Service bands are reduced to nothing? The whole of the spectrum will be authoritatively controlled; all will operate as directed; the bands will be regimented; the free voices will be stilled for ever. What of the proposals and Geneva?

The Radio Amateur includes in his code Loyalty and Patriotism. That

he acts on this cannot be denied. The list of those Amateurs who made the Supreme Sacrifice in recent wars proves that they were no chair-borne cavaliers. The citations for work against flood and fire indicate their outlook in peace time. The Amateur sets a proud record of ready, willing sacrifice for any worthy cause.

But what of that reduction of frequencies on his already overcrowded bands? The Amateur is disturbed at these proposals. Do these bands really have to be taken? Are there no modern technical methods which can be devised by commercial interests to extend channel availability? Amateurs have successfully adopted devices which have allowed for the ever-increasing population of their own bands. Why cannot commercial interests do the same? Can it really be proven that the other interests are in such difficulties that in spite of the most modern techniques the communication facilities are breaking down? Does this condition exist?

And what of Geneva? It was most fortunate that the Institute planned to have one of its members at the conference table so that he could report back to those in Australia what was happening. This member with balanced judgment and understanding mind will bring back a wealth of knowledge concerning trends and outlook on an International scale. On this information the Institute must plan for the conference which follows that of Geneva.

The Institute must be sure that our bands are retained. The Amateurs hold a very precious part of man's inheritance, a thing that he has fought and died for. Amateurs throughout the world must be ever watchful.

"The price of liberty is eternal vigilance."

FEDERAL EXECUTIVE.

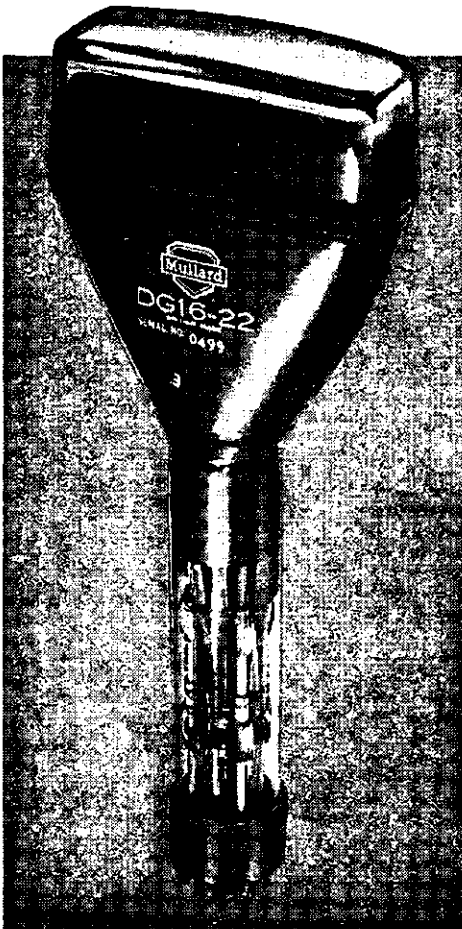
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GENEVA and the AMATEUR SERVICE

The Postmaster-General has released as public property the proposals from his Department which went forward to Geneva last March to be interrelated with the proposals of other countries to become the format for the International Telecommunications Union Conference which commences on the 17th August, 1959.

These proposals include changes in various parts of the spectrum, but of particular interest to us are those frequencies allotted to the Amateur Service. Mention of these changes was made in a recent tape recording (and printed in "A.R.," April 1959.—Ed.); but despite this forewarning, the actual details of these changes came as a surprise to most Amateurs. Spontaneous protests from Amateurs throughout the Commonwealth to their Federal Members, however, resulted in wide support for the preservation of the status quo for Amateur frequencies from all parties in both Houses of the Australian Parliament.

Despite the efforts of the W.I.A. to present adequate reasons from the Amateur viewpoint for the retention of existing frequency assignments, it became perfectly obvious from the outset that no matter what form our protestations took, the Frequency Allocation Sub-Committee would merely listen sympathetically but vote for the requirements of the frequency user with the so called "higher priority" regardless. The W.I.A. had no other alternative but to look for assistance in defence of the right of the Amateur in more powerful quarters.

Due mainly to the laudable representations made on our behalf by the honorable Alan Fairhall, M.H.R., who holds a transmitting license under the call sign VK2KB, and Senator George Hannan, Senator for Victoria, who has always been vitally interested in the Amateur movement, our case was presented to the Government and has gained such unexpected support from members in every part of the Australian Parliament that we can feel perfectly reassured that our case was a legitimate one.

Elsewhere in this issue of "Amateur Radio" you can read for yourselves extracts from Parliamentary Debates (Hansard) which will give you details in chronological order of what was said in defence of Amateur Radio and I think you will agree no finer tributes and recognitions could have been made.

Alderman Jones, of Newcastle, took the matter into the Labour Caucus which was unanimous that the Postmaster-General withdraw, review and re-draft the current proposals. Alan Fairhall took the matter to the Government Party Room. Senator Hannan raised the matter in the Senate. Both of these honorable members received support, and as at the time of writing the matter has reached a stage where it will be scrutinised by the Federal Cabinet.

The proposals, if they get through the Geneva Conference, will be disastrous to Amateur Radio in Australia. From Atlantic City the Australian Amateur

lost more than any other country in the world and that includes New Zealand which is in the same world region. Why? Now, eleven years later, we are faced with more reductions and in the same bands. This time we know the reasons and cannot under any circumstances support them as having a priority any greater than our own. The Postmaster-General, guided by his Departmental officers, states that the drastic reductions "amounts not so much to reductions as to the rationalisation and alteration of existing frequencies". For a growing country like Australia, but which is still small, population wise, compared to America and England, this so termed "rationalisation" does this to our bands:—

Current Allocations

3.5 to	3.8 Mc.
7.0 to	7.1 Mc. (exclusive)
7.1 to	7.15 Mc. (shared)
14.0 to	14.35 Mc.
21.0 to	21.45 Mc.
26.96 to	27.23 Mc. (shared with I.S.M. Services)
28.0 to	30.0 Mc.
56.0 to	60.0 Mc.
144.0 to	148.0 Mc.

Proposed Allocations

3.5 to	3.7 Mc.
7.0 to	7.1 Mc. (exclusive!!)
14.0 to	14.25 Mc.
21 Mc. band	(as currently used, we are told)
26.96 to	27.23 Mc. (same)
28.0 to	30.0 Mc. (same)
56.0 to	58.0 Mc.
146.0 to	150.0 Mc.

No Proposals to vary any bands higher up.

These proposals provide for a reduction of 100 Kc. off the 80 metre band, 50 Kc. off the 40 metre band, and 100 Kc. off the 20 metre band in the short wave frequency bands. A reduction of 2 Mc. in the 56-60 Mc. and a movement of the entire 144 Mc. band upwards by 2 Mc.

The changes which will prove the most dangerous are in the short wave bands mainly; particularly the 20 and 40 metre bands which are, by and large, the most heavily populated bands the world over. And why are they required? To provide channels for services whose existing channels will be less useful as the sunspot cycle advance is one reason, and to provide clear channels for the reception (not transmission mark you) of overseas programmes into Australia! And so the easy way out is to take frequencies from the Amateur Service because it is considered by the Postmaster-General's Department as having the lowest priority to the exclusion of all the assets in its favour. No wonder the Amateur "is up in arms about the matter!"

Government members have told you that this is a typical example of bureaucracy at work, decisions being made on behalf of the Parliament and the people without the knowledge of the Parliament and the people. They have told you to write to your local Member protesting against the proposals to reduce your operating bands. **Do it!**

This is the greatest opportunity Amateur Radio has had to have its case heard by other than a group of officers who, on the one hand, say they have the responsibility of looking after the interests of the Amateur, and, on the other hand, sit in conference with representatives from other large frequency users (all Government instrumentalities) with the prime object of providing for their requirements at the expense of the Amateur. There seems very little effort to consider the introduction of new techniques as a solution to finding more channel space, a challenge which the Amateur has always accepted with infinitely less capital and material resources at his command. But in 1947 he was cut down far enough—to the minimum in fact. Beyond that, as his activity of recent weeks shows, he is prepared to fight for a fair share of what was once his own—given to him by Governments who said it was useless domain.

There is no real reason why the Amateur Service cannot maintain the status quo for there is every reason to believe that the large Amateur populated countries are not expecting other than small variations to their existing frequency allocations in the v.h.f. region.

The Federal Executive sent this telegram to the Acting Prime Minister, Rt. Hon. J. McEwen, and other members of the Parliament:—

"Wireless Institute of Australia endorses protestations made by Australian Amateurs and appreciates support given by your Government in bringing this matter to notice of Australian people. Stop W.I.A. firmly opposes proposed frequency curtailments by P.M.G. Department on grounds that negative approach to frequency allocation problems cannot ever be resolved by reduction in Amateur bands to detriment of Service so valuable to Australian future. Stop Long after Amateur extinct P.M.G. would still be faced with similar problem. Stop Suggest Government investigate reasons behind proposals for Amateur band reductions on basis of lack of foresight in use of modern transmission and reception techniques by frequency users grasping Amateur frequencies as simple but temporary means for solving problem."

—G. Maxwell Hull, Federal President (for Federal Executive, W.I.A.)

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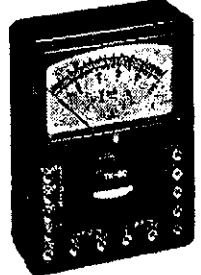
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12WR	2.7 or 15	10	30-15 Kc/s.	£7/9/7	2/11	4/4

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8P2	8"	2.7	7	63/-	2/3	3/8
10P1	10"	2.7	8	64/1	2/11	4/4
10P2	10"	2.7	8	75/6	2/11	4/4
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Parliamentary Comments on Proposals to Cut Amateur Frequencies

Commencing on 30th April, questions asked in the House of Representatives and the Senate indicated that members had received some indication of the cuts which were proposed in the Amateur frequencies. Following this, Senator Hannan, Mr. A. Fairhall, M.H.R. (VK2KB), and Mr. J. Fraser, M.H.R., all spoke at length on this subject and revealed that substantial cuts were proposed on the 80, 40 and 20 metre bands. Later it was revealed that the 5 metre band was to be halved.

Following the release of this information and its broadcast by VK2WI, Amateur operators lodged indignant protests by telegrams and letters to their Federal Members. For the information of Amateurs generally, we print herewith extracts from Hansard indicating the support that has been given to Amateurs by their representatives in both Houses.

QUESTIONS

In the Senate on 30th April, 1959, Senator Wood asked the following series of questions with notice:

- (1) Is it a fact that Australia will be represented by an official delegation at the conference of the International Telecommunications Union shortly to be held in Geneva to revise the currently operating telecommunications convention?
- (2) Is it a fact that Australian departments have prepared a series of proposals, altering present arrangements, which will be sponsored by the Australian delegation?
- (3) Do these proposals relate to the use of telecommunications by businessmen, commercial interests, private users of telecommunications services, and to the incidental use of radio services by various non-Governmental authorities and interests, and are some of the proposals designed to curtail facilities at present available?
- (4) Have the Commonwealth proposals yet been publicly announced, or will they be publicly announced in advance of the meeting so that informed Australian public opinion can pass judgment on their desirability for the guidance of the Australian delegates?
- (5) Have the proposals been forwarded, or will they be forwarded, prior to the meeting, for the information of delegations from other participating States?
- (6) Are the proposals being disclosed in advance to other Governmental authorities, and, if so, will the Postmaster-General explain why such information is not being disclosed to the Australian public.

On the same day in the House of Representatives, Mr. Cameron asked the following:

MR. C. E. CAMERON, to the Postmaster-General.—On what dates were the international agreements on telecommunication and radio services, which were drawn up at the Telecommunications Conference at Atlantic City, United States of America, and are now in operation in Australia—

- (a) Presented to the Senate and the House of Representatives,
- (b) Explained to the Senate and the House of Representatives, and
- (c) Debated and ratified by the Senate and the House of Representatives?

Answer.—The Atlantic City Convention was signed for Australia with the authority of the Prime Minister on 2nd October, 1947, and was ratified by the Governor-General in Council on 8th December, 1948. The instruments of ratification in respect of Australia were deposited with the International Telecommunication Union on 7th January, 1949, on which date the convention entered into force for Australia.

On 6th May, 1959, in the House of Representatives, Mr. J. Fraser, M.H.R. for A.C.T., tabled the following written questions:

- (1) Will Australia be represented at a meeting of the International Telecommunications Convention to be held at Geneva in August this year?
- (2) If so, will officers of his Department represent Australia?

● It is felt that the subject matter contained in this issue is of such importance to all Radio Amateurs that no apology is necessary for the lack of technical articles and the curtailment of featured notes.

- (3) Have proposals which are to be put forward by Australia been drawn up by a committee known as the Frequency Allocation and Services Committee?
- (4) What is the constitution of this committee?
- (5) Are Amateur radio operators and their organisations excluded from membership of this committee; if so, for what reasons?
- (6) Do the proposals of the committee include a recommendation for a reduction in the wave bands allocated to amateurs?
- (7) Does the committee propose that wave bands available to Amateurs shall be reduced, in the 80 metre band from 3.50-3.80 megacycles to 3.50-3.70 megacycles; in the 40 metre band from 7.00-7.15 megacycles to 7.00-7.10 megacycles; and in the 20 metre band from 14.00-14.35 megacycles to 14.00-14.25 megacycles?
- (9) Have any protests been made by representatives of amateur radio operators against these proposed reductions?
- (10) Is it a fact that at present the bands are very crowded and are likely to become more so with the growth of population?
- (11) Is the number of amateur operators in Australia increasing each year?
- (12) Is there plenty of space in the rest of the radio spectrum and could this space be allotted to other services without disturbing amateur allocations?
- (13) Have amateur radio operators and their organisations performed valuable work in national emergencies, and do they form a part of the civil emergency network and devote considerable time to regular practice?
- (14) Is it a fact that, although emergency work of this kind requires only a small fixed frequency, there is need for a wider frequency to enable amateurs to practise and use their equipment so as to be ready for emergency work?
- (15) Has the training provided by amateur radio organisations proved invaluable to the armed forces in war-time, as well as a source for providing trained operators?
- (16) Could this form of training be seriously affected if the proposed, or further, reductions in amateur wave bands are made?
- (17) Was it the work of radio amateurs which led to the original use and subsequent development of shortwave radio?
- (18) Are these amateurs now to be squeezed out of the shortwave bands because of the intrusion of commercial interests?
- (19) In the interest of radio amateurs, will he make as full a statement as possible on all these questions?

Answer:

- (1) Australia will be represented at the International Administrative Radio Conference to commence in Geneva on 17th August, 1959.
- (2) Australia will be represented by a delegation composed of officers of the Postmaster-General's Department and Departments of Navy, Army, Air, Civil Aviation

and External Affairs, the Overseas Telecommunications Commission (Australia) and the Australian Broadcasting Control Board.

- (3) Proposals affecting certain of the international radio regulations were formulated by the Frequency Allocation Sub-committee of the Telecommunications Advisory Committee.
- (4) The Frequency Allocation Sub-committee is composed of representatives of the Postmaster-General's Department and Departments of Navy, Army, Air, Supply and Civil Aviation, the Overseas Telecommunications Commission and the Australian Broadcasting Control Board. The committee has authority to co-opt representatives of other radio users as occasion demands.
- (5) The committee is an inter-Departmental body and users of licensed radio services including amateur radio operators are not directly represented on the committee.
- (6) The proposals provide for some adjustments to frequency bands assigned to various classes of services including amateurs.
- (7) Yes.
- (8) Yes.
- (9) Yes.
- (10) The bands allotted for use by Australian amateur stations are not crowded nor is it likely that they will become so with normal population increase in the foreseeable future.
- (11) Yes. During the year 1958 the number increased from 3,508 to 3,728.
- (12) In general the bands below 30 megacycles allotted for use by services other than amateurs are greatly overloaded throughout the world.
- (13) Yes.
- (14) The space available in all amateur bands is adequate to meet all working and practice needs.
- (15) Amateur radio operators and organisations do valuable work in training for defence and other purposes.
- (16) Adoption of the present proposals could not prejudice in any way the training work mentioned.
- (17) Many radio amateurs have played an important part in the development of short wave radio.
- (18) No.
- (19) A statement has been made to the House.

SENATE—6th MAY

SENATOR HANNAN (Victoria).—Mr. President, I wish to refer to a non-party matter, and I shall detain the Senate for only four or five minutes in doing so. I refer to a decision of a departmental committee to recommend to the International Frequency Conference to be held in Geneva in August that frequency allocations to amateur operators in Australia, in the 20, 40 and 80 metre bands, be slashed by one-third.

This international body meets every ten or eleven years at a governmental level and allocates for the ensuing period of ten or eleven years—there is no fixed period but over the past 30 years it has worked out at eleven years—the frequencies to be used throughout the world by commercial operators and all other users of radio frequencies. The departmental committee in Australia is known as F.A.S.C., or the Frequency Allocation Sub-Committee. The abbreviated title is not an abbreviation for "Fascist", even though the action taken in this instance has been somewhat dictatorial. It is an advisory committee on which are represented the Navy, the Army, the Air Force, the Australian Interdepartmental Telecommunications Advisory Committee, the Postmaster-

General's Department, the Australian Broadcasting Control Board and the Department of Civil Aviation. The committee advises the Postmaster-General on frequency allocations both in Australia and at the international conference. Amateur radio operators in Australia are not represented on the committee, even though they are very important users of frequencies. Indeed, amateur operators throughout the world are important users of radio frequencies.

The Government has sent its directions to Geneva for publication to the other governments concerned. Unfortunately, the recommendations of the allocation sub-committee were made known to Australian amateur operators and to the public only last week-end. My request, Mr. President, is that the Minister for Repatriation (Senator Sir Walter Cooper), who represents the Postmaster-General in this chamber, should confer with his colleagues to see whether the Australian delegation, instead of going to Geneva determined to sell out one-third of the radio frequencies used by amateur operators, can change its front and unite with the governments of the United States of America and other countries to preserve for amateur operators all frequencies at present being used by them.

I think it is fair to say that this is an excellent example of the regulation of people's affairs by departmental decree in a manner which is abhorrent to any democracy. On the occasions that I have had to approach the Postmaster-General on behalf of the Wireless Institute of Australia, I have always found him to be courteous and co-operative. I feel that this is a matter which somehow or other has slipped past his guard. Therefore, I ask his colleague in this chamber to examine the possibility of re-directing the Australian delegation to Geneva so that, instead of these frequencies being given away without a struggle, the men who use them may be protected.

I do not think it is necessary for me, at this late hour, to canvass the value of these trained technicians to the Commonwealth of Australia in an electronic age. When one speaks about amateur radio operators, it is almost axiomatic that one refers to men who are skilled in electronic communications, who are valuable to the Navy, the Army and the Air Force the moment they join those services, and who have rendered valuable service during many national disasters such as floods and bush fires. We know of the help they gave as recently as last year when a yacht sank off New Guinea. On innumerable occasions, the amateur radio operator has proved himself to be a valuable link in the communications chain.

For those reasons, Mr. President, I ask the Minister for Repatriation to see whether at this late stage the direction can be reversed.

SENATOR WILLESEE (Western Australia).—I was not aware, until I heard a whisper earlier this evening, of the matter that Senator Hannan has brought forward. I have had occasion to note the value of the work done by radio hams, as they are known throughout the world.

SENATOR MAHER.—They do not like that term.

SENATOR WILLESEE.—Nevertheless, that is the name by which they are known. I am sure the word "ham" is not used in the theatrical sense. If only half of the facts outlined by Senator Hannan are correct—I am not suggesting that they are not all correct—they come to me with a terrific shock. If our representatives are going overseas and are volunteering to give away some of our bands, I want to know what is happening in other parts of the world. Surely to goodness we do not intend to give away some of our bands and let other countries sit back with what they have!

SENATOR HANNAN.—The surrender will be to commercial interests rather than to other amateurs.

SENATOR WILLESEE.—Amateurs in other parts of the world will not be making the same contribution?

SENATOR HANNAN.—They are not, at the moment.

SENATOR WILLESEE.—That is what concerns me so much. It is a weakness that these people are not represented on the committee. If ever people have established themselves without help, amateur radio operators have. I do not wish to delay the Senate, but merely to add my note of protest. I make this further request to the Minister for Repatriation (Senator Sir Walter Cooper), who represents the Postmaster-General: Because it will be the last week of the current sessional period, I ask that next week a statement be made explaining the action of the committee and the reasons for that action. Surely it would not be too much to ask too, even at this late stage, for the opportunity to be given to these amateur operators to put their viewpoint to the allocations sub-committee.

SENATOR LAUGHT (South Australia).—I desire to rise in support of the remarks of Senator Hannan, which were elaborated upon by an Opposition Senator. I have received from the South Australian council of the Wireless Institute of Australia a telegram which indicates that the South Australian division of the institute protests strongly at the F.A.S.C. proposal for a serious reduction of frequencies allocated to the amateur radio services. I can assure the Senate that news of the committee's action was received with great consternation last week-end. I believe that the Minister for Repatriation (Senator Sir Walter Cooper) should seek, for the information of the Senate, a full explanation of the matter that has been put forward so excellently by Senator Hannan.

SENATOR WRIGHT (Tasmania).—There is only one thing I want to say. I rise to mention it because it has been omitted by other speakers. I think we can detect in this matter an instance of a practice that is becoming all too frequent—the practice of departmental officers going to international conferences and entering into international agreements which come back as faits accomplis and which are expected to be approved without question by the Parliament. I hope the Postmaster-General (Mr. Davidson) will take that aspect of the matter into consideration. Surely any proposal that goes to an international conference should have been given some consideration by the Parliament, and surely the Government should give to a departmental delegation an assurance of parliamentary approval. Otherwise the Parliament of the country is completely bypassed.

I hope it will not be considered to be irrelevant to recall that, when we debated the Warsaw Convention and Hague Protocol on civil aviation liability, we were confronted with an international agreement that was being translated into the law of this Commonwealth.

SENATOR WOOD (Queensland).—I do not wish to detain the Senate for long at this late hour, but I think it is right that we should signify our support for Senator Hannan in the very fine move he made this evening. As one who comes from the cyclone area of North Queensland, I realise the great value of these amateur radio operators. They hold open radio communications when other means of communications are not available. We remember some of their activities during times of distress in Northern Queensland and other places, when the ordinary avenues of communications were not open to the people. These amateur radio operators held the fort right around the clock, and rendered a great humanitarian service to the people living in the distressed areas. It is to lend support to Senator Hannan in his attempt to get this matter put on a proper basis that I rise on this occasion.

I strongly support the views put forward by Senator Wright. He referred to something which this Parliament should jealously guard at all times. Sometimes we are too easy in these matters. The views put forward by Senator Wright are worthy of great consideration. This Parliament should retain its right to deal with these matters, and not leave them to the Executive.

SENATOR WADE (Victoria).—I congratulate Senator Hannan for bringing this matter to the notice of the Senate. I have first-hand experience of the value of amateur radio operators in Victoria. I cannot speak too highly of their worth to the State in times of flood and fire.

Victoria has a unique organisation in that from 500 to 600 enthusiasts have banded together to perfect a communication system that has to be seen to be believed. You have to see this organisation in operation to appreciate its worth. During days of acute fire danger, countless men throughout the length and breadth of the State stand by their radio sets in order to give a voluntary service to their fellow men. That is typical of the spirit that actuates the amateur radio operators. Other States are not blessed with the radio communications system with which Victoria is blessed. I ask the Government to have a look at the needs of the amateur operators in those States because they are the people who will be called upon to form, in their States, the kind of organisation that now exists in Victoria. You cannot assess in terms of money the value of the services that amateur radio operators render to the nation.

SENATOR SIR WALTER COOPER (Queensland, Minister for Repatriation).—I am greatly impressed by the views that have been put forward by Senator Hannan, and supported by other honorable senators, in regard to the activities of amateur radio operators. I assure those honorable Senators that I shall bring this matter before my colleague, the Postmaster-General, tomorrow, as soon as copies of the "Hansard" report of the debate are received.

HOUSE OF REPRESENTATIVES—

6th MAY

MR. FAIRHALL (Paterson).—... and turn my attention to a matter which I think is of some national importance and which concerns the administration of the Postmaster-General's Department. I refer to the fact that towards the end of the year, in August and for a few months thereafter, there will be assembled in Geneva the conference held at ten or eleven year intervals by the International Telecommunications Union, to which Australia is a signatory. From this conference I fear that irreparable damage will be done to a service in this country which I hold to be of considerable value. That is the service presented to Australia by the amateur radio operators.

Sir, the task of the International Telecommunications Union, or its major task, will be to decide how the radio frequency channels are to be allocated between the variety of services requiring room therein. It will have to decide which frequencies will be made available to broadcasting, local and international, to television, to communications, to radar, to navigation, to amateur radio, and to all the other services that are increasingly finding use for the radio spectrum. Already member countries have sent to Geneva their proposals for amendment of the frequency allocation table. Australia has sent her proposals abroad, and at Geneva those proposals are being correlated with the proposals of other countries. The final correlation will be circulated to all members of the union and will serve as the working document for the conference which, as I have stated, will begin in August or September.

With regard to the section with which I am particularly concerned—the radio amateurs of Australia—I want to express some concern at the reluctance of the Postmaster-General (Mr. Davidson) to make public the recommendations. The fact of the matter, Sir, is that these recommendations have been sent abroad for the express purpose of being published to other members signatory to the convention. It is rather an odd circumstance in my view that we in Australia should not have access to these proposals. I think it is rather important to note that without the opportunity for debate given by a ministerial statement or the tabling of a paper in this House, it may well be that the matter would pass unnoticed by Parliament or even by the Government itself. This leaves a completely unsatisfactory situation in which Australia may well find herself committed by international agreement in this very important matter of the availability of radio frequency channels without either the Government, the Parliament, or the people of Australia knowing what has been proposed and what has been approved by agreement in our name.

It may well be that the Postmaster-General feels that he has the best experts in this country within his department and therefore, on a matter as technical as this, there is not much point in referring it either to the Government, the Parliament, or the people. My appreciation of the technical competence of the officers of the Postmaster-General's Department is not reduced by my belief that there is, within the communications industry of this country outside the Postmaster-General's Department, a body of people who are thoroughly competent to express views on this subject. I do not suggest for a moment that the officers of the Postmaster-General's Department do not bring a full sense of responsibility to their task in this connection, but, as I shall show later, they would not be human if they did not take advantage of their peculiar situation in this matter. The Postmaster-General has agreed—I am afraid rather reluctantly and only under considerable pressure—to make available the recommendations with respect to amateur radio operations that have gone abroad in the name of Australia. When these recommendations were published at the week-end I think a considerable number of members on both sides of the House, because this is not a party issue, probably received letters and communications of one kind or another from amateur radio operators urging that the Government should not make the proposed reductions in their allocations.

As I pointed out, my interest lies particularly in the allocations for the use of amateur radio operators. These people are a minority. Their activities are non-commercial, yet they provide an extraordinarily valuable service to this country. It is for those reasons that I believe I am justified in taking up the cudgels on their behalf in this House. The Postmaster-General has been very co-operative on this matter within the limits of his reluctance and arranged for me to meet in Melbourne, a couple of weeks ago, the members of the sub-committee that advises his department on these technical mat-

ters. That committee is the Frequency Allocation Sub-Committee. After some superficial discussions with the committee on what, after all, is a deeply technical subject, I came away not at all satisfied that the right thing was being done, but worst of all I came away with a very great concern for the 3,500 radio amateurs of this country, whose future I believe to be seriously threatened by the proposed reductions in the frequency channels available to them.

Perhaps I should say a word or two about these amateurs and the service that they render to this country. First of all, as I have said, they are members of a non-commercial organisation. They represent a minority of the taxpayers of Australia. Because they are non-commercial and because their activities are of a spare-time nature, they are regarded, I am sure, by the Administration as having a very low priority in the scheme of things generally. Perhaps, unless this matter is brought to public attention, the amateurs will lose valuable privileges for all time and Australia may well lose an extraordinary valuable asset. The amateurs consist of an international body of technical enthusiasts. They number something like 250,000. They are found in every country in

the world, not excluding iron curtain countries. They are a group of non-commercial technicians who interest themselves in this technical occupation in their spare time and at their own cost. The Australian radio amateurs equip themselves, as their past record has shown, in order to serve this country when it needs them most. Those occasions in recent times have been in time of war and during periods of civil emergency. These people find in radio an outlet for their experimental, developmental and inventive skills. They are drawn from all walks of life. You will find radio amateurs amongst industrial apprentices and atomic scientists. You will find them amongst school teachers, sportsmen, politicians, and even statesmen. I think that one or two crowned heads—whether they are still crowned I do not know—in times gone by, have been interested in amateur radio. You will find radio amateurs in factories and laboratories. You will find them heading the communications departments of the armed services. You will find them in broadcasting services. The important point, I think, is that their international operations provide a very potent source for the development of international understanding and goodwill, and nobody will doubt that we are in great need of that commodity today.

The amateurs are recognised by the International Telecommunications Union as a fully fledged international service with international frequencies specifically reserved for their use. There was a time, as many of us will remember, when the wavelengths below 100 metres were regarded as of little value and the amateur was free to romp in that spectrum as he wished. I do not think that it is too much to say that his inventive and developmental skills and his tenacity enabled him to show that those wavelengths were not entirely useless. Little by little their value was expanded as new techniques were discovered, until today wavelengths not down to 100 metres, but down as low as 3 centimetres, with tremendous technical problems involved, are nevertheless very valuable public property. As these wavelengths become more valuable, so the amateurs have been squeezed down further and their allocations reduced and restricted until today they operate in very narrow bands.

The only free space today for the amateur to carry on his experiments is in the radio frequency channels below 1 centimetre in wavelength. That is pretty valueless territory at the moment, because we have developed neither the equipment nor the techniques to make use of it. But little by little, as amateur radio operators move into this territory, and, of course, with the assistance of scientific laboratories, we will discover how to use these extraordinarily high frequencies, and once again the amateur radio operators will be squeezed down still further; that is, assuming that they have not been squeezed out of existence already. It is because of the possibility, or even probability, that they will be so squeezed out that I think it is necessary to refer to the position at this time.

Amateurs throughout the world, by international reservations made at counterpart conferences to that to be held at Geneva, employ bands in harmonic relation to 80, 40, 20, 10, down to 5 metres and into the shorter wavelengths. These are world reservations, and the availability of these frequencies to the amateurs need for international communication has encouraged into their ranks a vast number of people over the world—as I have said, numbering over 250,000—to pursue technical knowledge and experience in those particular frequencies. The immediate dividend that we and most other countries have received from this activity is that during times of war, we have been able to call on a great army of radio-trained technicians experienced in these high frequency techniques and they have been most useful. During periods of civil emergency when the ordinary channels of communication have gone out of action, we have found on almost every occasion if not every occasion that there have been amateurs there with portable equipment and so on to take up where standard communications have faded out. Certainly, they are only emergency communications, but they get us through and in most of the States, particularly in New South Wales, there is in being an emergency network allied to the civil defence group which would render valuable service if ever the time should come when we find need of it.

For all these reasons, Australia owes a debt to its radio amateurs, and I believe the amateurs are entitled to expect something a little better from Australia and from the Government than is proposed now when we seriously plan to reduce their allocations, some bands coming down by one-third and some by one-half. I believe if we make these reductions we will discourage from entering amateur radio training themselves for national service—a

vast number of young men—and, indeed, young women—who are going into technical occupations in Australia. The great danger is that we may regard the amateurs in Australia less as a national asset than as a group of people who are merely putting valuable frequency channels to rather inferior use.

I think it is worth noting, by way of comparison, that the 200,000 amateurs who are licensed in the United States of America, where the problem of availability of frequencies is at least as great as if not considerably greater than our own, enjoy a much higher status with their government. Here in Australia when changes are proposed, notice merely comes out as a departmental edict to the amateurs and they must accept it. In the United States, if there are proposals to change conditions under which these stations operate, there must be a public notification of the proposal and an opportunity given by the Federal Communications Commission for interested people to give evidence in public on the pros and cons of the proposed change. Here is evidence of a vastly higher appreciation of the amateurs in America than we afford them in Australia.

I should like to refer now briefly to the administrative processes which have produced the present situation. After the second world war, all communications in Australia have been controlled by the Postmaster-General's Department because it administers the Post and Telegraph Act. During wartime, the allocation of frequencies was under the control of the Navy and wartime requirements took priority as should be the case. At about the time the amateurs received their licences back after the war—because naturally they were immobilised during the war—there were set up a number of technical committees within the Postmaster-General's Department. One of these was the Technical Advisory Committee and under that there was a sub-committee called the Frequency Allocations Sub-Committee. The personnel of this Frequency Allocations Sub-Committee was drawn from the Postmaster-General's Department, the armed services, the Australian Broadcasting Control Board when that was ultimately instituted, the Department of Supply, the Overseas Telecommunications Commission and the Department of Civil Aviation.

The point I stress to the House is that it will be seen that these members were representatives of services which are themselves major users of radio frequency channels. As I have said, I do not for one moment believe that these people would have brought any sense of irresponsibility to their task of advising the Government on the allocation of frequencies, but they would indeed be something more than human if they did not regard the services they represent as having a higher priority than the amateur transmitters on the side. As I say, I came away from this meeting of the sub-committee firmly believing the amateurs were being given a too low priority altogether.

Now, Sir, I do not believe anybody who has looked at the scene or is acquainted with telecommunications in any shape or form, will misunderstand the great problems in this field today. In the past ten years, the number of applications for the sort of services used by taxis, ambulances, police, supply authorities and so on have increased from 2,000 to 10,000. They all make great demands on the radio channels available and though they are to be regarded as having high priority, the tendency will be to squeeze out those of lower priority. That is precisely the move at the moment because, as the Postmaster-General's Department has pointed out, it is required to make additional space available for these utility services.

There are two ways of doing this job. One is by the use of more modern techniques because, in the course of discussion I had with the Technical Advisory Committee, one organisation—a communications authority—pointed out that it made a vast multiplication in the effectiveness of the channels available to it by using modern transmission techniques. The second way is to squeeze out those of lower priority who occupy frequency channels. I suggest that the department must devote itself with more enthusiasm and great industry to the task of promoting more modern techniques of operation. When that happens, there will be more effective use of frequency channels available and less need to squeeze out those who may be regarded as having lower priority claims.

On another point, we are told there is great need for additional frequencies to be made for international broadcasts, yet those few of us—extraordinarily few—who happen to turn a dial on a radio receiver and attempt to listen to an international broadcast will be left, I am afraid, in little doubt as to the value of international broadcasts. The audience must be pretty near zero for this great reason: Where today most countries have high-powered short-wave transmitters on the air interlarded with a great deal of propaganda—because that is

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their main function—we find that for every station that comes on the air there also comes on the air a powerful jamming station operated by some other country. The net result is to wash out almost completely the value of international broadcasts, and to clutter up channel after channel with meaningless noises which are incomprehensible to the average international listener, if any. All of this represents a complete waste of the most valuable frequency channels. If the International Telecommunications Union is to do a real job, it must devote some of its attention to this problem to clear up this jungle which has developed on the international broadcasting bands. If that is to happen, there will be one less source of pressure acting on the amateurs to reduce their share of available frequencies.

I am forced to the conclusion, after the closest possible scrutiny of this situation, that there is no justification for the drastic reduction in the amateur bands proposed by the Postmaster-General's Department for adoption at the Geneva conference. Already, there is much too little room for the amateurs to operate, because in the post-war years the number of Australian amateurs has doubled from 2,000 to about 4,000. When one considers the prospects of a great multiplication of interested parties one can imagine the hopeless situation which we shall have in future years, if we cut the frequency allocations now available. The number of people wanting to use those frequencies will have doubled, trebled, or multiplied perhaps even more than that. In answer to this proposition, the defence of the Postmaster-General's Department is that one may listen on these amateur bands and find that they are not sufficiently occupied by the existing amateurs. That may be true for a large part of the day because, as I have pointed out, these people are recognised internationally as operating an amateur service for non-commercial purposes, which means that the stations are operated necessarily by men who have to work during the day. Consequently, one may go round these bands during part of the day and find very few stations transmitting, particularly on channels used for short-range communications.

In regard to the major bands which are useful for international communications, I challenge the Postmaster-General's Department to substantiate any claim that they are unused. Those bands are so thick with stations that communication is already extremely difficult. So much is this so that the amateurs themselves are adopting the most modern techniques for achieving operating efficiency. On the bands made available to commercial interests, one may find the same sort of situation, except that, in periods when those frequencies are not being used for the transmission of commercial traffic, they are occupied by delightful contraptions called V-wheels, which are automatic transmitters that merely keep the channel open, sending a signal which conveys no intelligence at all. So, although it can be said that those bands are occupied, they are not always occupied for any useful purpose.

I suggest that the department may be persuaded to give second thoughts to its recommendations for a reduction in the channels available to radio amateurs. Those who are acquainted with the problem will have a full appreciation of the tremendous importance of the matter and the difficulties that our delegation will face at the Geneva conference. It will need reasonable freedom to reach international agreement, because if there is no international agreement there will be chaos in the use of these bands, which are capable of producing interference all over the world. In the present frame of mind in which the delegation is going abroad, I am afraid that the only proposals which it will make, substantiate and fight for are those which will be to the detriment of the Australian amateur transmitter.

I believe that if the facts were brought to public attention, and honorable members and the people of Australia generally fully appreciated the splendid service which they have had in the past and can expect in the future from their radio amateurs, the members of the delegation would go abroad with the knowledge firmly fixed in their minds that the Australian people actually appreciated their amateurs and wanted their facilities preserved in full. The next best arrangement would be to send abroad a delegation with a direction. I wish there were available in this House some simple machinery by which we could direct the delegation to go to Geneva to fight for the preservation of the amateur status and amateur facilities, but I am afraid that that is not possible.

MR. WHEELER.—Can the Postmaster-General not direct them?

MR. FAIRHALL.—Yes. There are two other matters that I should like to mention in closing, in order to put this position in perspective.

One is that the amateurs of Australia, through their parent body, the Wireless Institute of Australia, have sought and, I am glad to say, received the approval of the Postmaster-General to sending to this international conference an observer with a watching brief. The amateurs of Australia have subscribed about £2,500 to cover the expenses of that observer. The same course is being followed by amateurs in almost every other country which is a signatory to the agreement. That is an indication of the importance that the amateurs of the world attach to the question. If there is to be any further great curtailment of the frequencies available to amateurs, the band will become almost unusable, and the final liquidation of the amateurs as a body will not be too far off.

The second point I want to make will illustrate once again that we in Australia do not value our amateurs as do the people of the United States of America. The last international conference fixed the frequency channel of the 20 metre band at from 14,000 to 14,300 kilocycles. Although the United States of America and New Zealand preserved for their amateurs the whole width of that internationally allocated band, we in Australia did not do the same. Australian amateurs have been operating for many years under an edict of the Postmaster-General which reduced the band by 50 kilocycles. Now that is to be reduced by 100 kilocycles. That means that we in Australia are not even providing for our amateurs the full use of frequencies upon which there has been international agreement. These factors indicate that the amateurs of this country do not enjoy the priority which I believe is warranted by their service to the country. I urge, as I hope other honorable members will do, that this matter of the proposals for Geneva be reviewed at some time between now and August, when the conference assemblies, and that we adopt a new attitude. First, we should not propose a reduction, and secondly we should support any country which stands out for the preservation intact of those facilities which are now available to the radio amateur.

MR. BIRD (Batman).—I should like to say that I listened with great interest to the speech of the honorable member for Paterson (Mr. Fairhall). I also have received representations along the lines stated by the honorable member, and I am in complete agreement with every word he uttered in view of his submissions, the least that the Postmaster-General (Mr. Davidson) can do is to give very serious consideration indeed to a review of the position. If the delegation goes to Geneva with a set of recommendations conceived in secret, which will ultimately mean the stultification of radio amateur activities in the Commonwealth, it seems to me that that will be an illustration of bureaucracy run mad. I hope that the Government will not rely for the last word upon this committee, which I suppose could be called an expert committee, but will give serious attention to the technical arguments submitted by the honorable member for Paterson. Every honorable member knows of his interest in this realm of communications and we have always listened to him with great interest and profit. I was very happy to note that the honorable member for the Australian Capital Territory (Mr. J. R. Fraser) who holds views similar to those of the honorable member for Paterson, has placed on the notice paper a number of questions dealing with this matter, and I understand that he will make some submissions along these lines later in the debate. Suffice it for me to say that I join with the honorable member for Paterson and that I am prepared, to the limits of whatever influence I have in this House, to support his submissions to the hilt.

MR. BLAND (Warringham).—I associate myself wholeheartedly with the remarks made by the honorable member for Paterson (Mr. Fairhall). The set of circumstances which he disclosed reveals an attitude of mind which sometimes passes unnoticed, but which results in decisions being taken by the Public Service which ought to have been taken by the Parliament itself. I do not think that public servants, sometimes, are aware of the consequences of what they are doing. I am perfectly certain that we on this side of the House, and in the Parliament generally, are not always aware of what is going on. While I align myself with the honorable member for Paterson, I would say to him that here, again, the price of liberty is eternal vigilance.

MR. LUCOCK (Lyne).—I strongly support the honorable member for Paterson (Mr. Fairhall) in his plea on behalf of amateur radio operators. We know the tremendous value of these folk to the Commonwealth in time of emergency. During floods, bush fires and hurricanes, if their equipment is not damaged, they are

able to keep open lines of communication when telephonic communication is interrupted. They have been instrumental in bringing assistance to areas which would otherwise have been completely isolated as a result of failure or normal means of communication. For that reason, particularly, sympathetic consideration should be given to the representations on behalf of amateur radio operators.

The matter of training was well covered by the honorable member for Paterson who has a far greater technical appreciation of the situation than I have. When television was first introduced it was said that it would assist in providing technicians for service in the event of a future conflict, because their training could be used outside the sphere of entertainment. That argument can be advanced just as strongly on behalf of the amateur radio operators who are prepared to spend their leisure time in an activity which is more than a hobby. It has become almost a faith with them, and they provide a medium of communication, not only within the Commonwealth but also with overseas countries. Their value is tremendous, in three or four different directions.

The honorable member for Paterson directed our attention to the danger that once again a board or group of people was bypassing this Parliament. That is a matter that we must watch very closely. We must ensure that the rights, privileges and responsibilities of this Parliament are not usurped by committees, boards, or other organisations. I cannot support strongly enough the request and suggestions made by the honorable member for Paterson in his admirable speech on supply early this afternoon.

MR. J. R. FRASER (Australian Capital Territory).—I do wish, Mr. Deputy Speaker, to support very strongly the remarks made by the honorable member for Paterson (Mr. Fairhall) this afternoon when he spoke of proposals that are being adopted by this Government to reduce the radio channels available to the amateur radio operators in Australia. I believe the radio hams, as they are called, have earned a great name for the service they have given to this country.

SIR WILFRID KENT HUGHES.—All over the world.

MR. J. R. FRASER.—That is true, but I am referring tonight particularly to those in Australia, and to the great service they have given in keeping communications open in times of national disaster—fires, floods and the like. I believe that the radio amateurs are held in very affectionate regard by the people for those services. Indeed, there have been frequent occasions on which governments have paid tribute to the great work done by them. It cannot be stressed too much that the radio hams are not merely hobbyists fiddling around with home-made equipment or equipment they have purchased just for their own amusement. In the main, they are dedicated young men who have invested a lot of money in transmitting and receiving equipment and who devote a great deal of their time to study which keeps them abreast of the developments in electronics and in changing radio techniques. Through their clubs and associations, they offer training and assistance to learners, organise services in the community interest and, in general, do what everybody in Australia regards as a grand job for this country.

In time of war, the armed forces have been able to draw from the ranks of the amateurs trained wireless and telegraph operators. In time of peace, the radio clubs and societies have played their part in providing recruits for the Citizen Military Forces and in establishing and maintaining training classes for those services. I believe everybody agrees that they are a band of enthusiasts who deserve and should be given whatever assistance lies within the power of the Government to give.

MR. DUTHIE.—Do they get any assistance now?

MR. J. R. FRASER.—I believe they are getting a very raw deal, in the name of this country but without the sanction of this Parliament, unless it is the tacit sanction of the Parliament. The honorable member for Paterson speaks with far greater technical knowledge of this subject than I can ever hope to possess, and he has put before the House a very strong case indeed. It is a case which should persuade the Postmaster-General (Mr. Davidson) to change the recommendation that has been made.

I admit that it is difficult for the Minister to go against the advice of his officers because they are experts and the Minister is the parliamentary head of the department who must accept responsibility. But when organisations put forward a case such as that put forward by the honorable member for Paterson and

that advocated in another place, which will be discussed further in this chamber, they must carry weight as against the opinions of people outside this House. These arguments must be weighed against the advice of the Minister's own officers and the Minister must make a decision as to whether, in fact, justice has been done or an injustice perpetrated.

The present Commonwealth Government seems to me, Mr. Deputy Speaker, to be fostering policies which could lead, as the honorable member for Paterson has said, to the removal of amateur radio operators from the air. The amateurs—and there are some 4,000 of them in Australia—are really up in arms about this. I believe that the short waves have really been sizzling over the past few nights. I believe that there have been conversations from one end of the continent to the other on this subject because the amateurs really feel that they have been treated slightly by this Government and that the proper claims they have for consideration are being disregarded for commercial, government and semi-government interests and, indeed, for foreign interests.

The allocation of wave bands involving international use of the air and associated matters is to be discussed at the convention of the International Telecommunications Union to be held in Geneva soon. This convention is held every eleven or twelve years and the last one was held in Atlantic City in, I think, 1947. Australia sends representatives including men selected from the Postmaster-General's Department. The proposals that are to be put forward have been framed by a committee known as the Frequency Allocation and Services Committee. That committee has recommended among other things very severe reductions in the wave bands available to amateurs in Australia. At present, Australian amateurs operating in the 80 metre band have the channels for 3.5 to 3.8 megacycles. It is proposed to reduce that range to 3.5 to 3.7 megacycles, which is a reduction of one-tenth of a megacycle or, as honorable members will know, 100 kilocycles. In the 40 metre band the present range is from 7 to 7.15 megacycles and the range proposed by the committee to which I have referred is from 7 to 7.1 megacycles, a reduction in that instance of 0.05 of a megacycle, or 50 kilocycles. In the 20 metre band the present range is from 14 to 14.35 megacycles, and the proposal is that the channels available in that band shall be from 14 to 14.25 megacycles, which involves a reduction of one-tenth of a megacycle or 100 kilocycles.

MR. DUTHIE.—Who will get the rest of those channels, if they are taken away?

MR. J. R. FRASER.—As the honorable member for Paterson has said, the Government has the task of allotting the channels in the bands. But the suggestion made by the amateurs is that there is ample other space in the radio spectrum which can be allotted to the commercial interests, which are mostly intruding into this band, without any interference being necessary in the allocations now available to amateur operators.

The proposal of this Frequency Allocation and Services Committee if put forward by Australia and adopted at Geneva, will severely limit the operations of radio amateurs in Australia, because, as I understand it, the Geneva Convention fixes maxima only, and it is still possible for the Government of an individual country to impose further restrictions within those maxima. The reason for the indignation of the radio amateurs is that at present the short wave bands are very crowded, and obviously they will become more crowded as the population of this country increases and the number of amateur radio operators grows. As I have said, the amateurs claim that there is plenty of space in the rest of the radio spectrum which can be allotted to other services without disturbing their allocations.

It should be remembered that it was the radio amateurs themselves who were the original users, indeed the discoverers, of short waves. As the honorable member for Paterson said this afternoon, when broadcasting developed the amateurs were allotted frequencies below 100 metres on the band, and it was the amateurs themselves who, relegated to that area, developed the use of short waves and demonstrated their efficiency to such an extent that the interest of commercial and governmental users was aroused. I believe that if the present proposals were implemented the amateurs could be squeezed out of the short wave bands because of the intrusion of commercial and foreign interests. I hope that the Postmaster-General will have another look at this matter. Indeed, I feel that he must, because the weight of argument against the proposals of the Frequency Allocation and Services Committee is such that it must be given regard by him.

I have received a number of representations on this matter, including some from the Can-

berra Radio Society itself, putting forward very strong arguments as to why there should be no change in the allocation of channels to amateurs. I have received a letter from three constituents in the School of Physics of the Australian National University, and I propose to read portions of it. The letter opens by referring to the reductions that have been proposed by the committee, and proceeds—

"These reductions have been recommended by a committee of the Postmaster-General's Department, to frame the Government's policy for the forthcoming I.T.U. conference at Geneva."

The letter then sets out the proposed changes. It first states the original United States and Australian allocations, which were varied eleven years ago so far as Australia is concerned but are still extant in the United States. The letter continues—

"There is considerable poaching by commercial stations on these bands, which the authorities seem to ignore."

That reference is to poaching by commercial stations in other countries, which are also signatories to the convention, on the bands allocated here to amateur radio. The letter continues—

"It is realised that the demand for channels in the high frequency region is heavy, but it is very much heavier in North America than it is here and it is not thought necessary or desirable to curtail amateur activity there."

"Some of our recently lost frequencies, especially 7.15-7.3 megacycles, are now being used for European and Far East propaganda broadcasts, and for each broadcast there is a jamming station belonging to the opposition. The result is that 7.15 to 7.3 megacycles is now useless for everybody. The American answer to this has been to allow amateurs to use 1 kilowatt of telephony in this band and not to bar them from it. We know that this privilege would not be abused here in Australia."

Of course, the power allotted to an amateur operator here is 150 watts, compared with the kilowatt allotted in America. The use of a kilowatt of power would involve the use of much more expensive material than most amateurs can afford. The letter continues—

"Technical progress in radio mostly stems from large research organisations these days, but amateurs do provide a large body of people with some technical knowledge and experience. At present there is a great shortage of people with technical skills and we are always hearing about the gravity of the situation and the superiority of the Russians. To us, this seems no time to discourage a useful activity of some 4,000 Australians, but rather a time to restore some of the lost frequencies."

"It seems to us that no harm would be done if we followed the American and Canadian regulations for frequency allocation and transmitted power."

"To follow a policy of continual reduction of bands will undoubtedly result in loss of interest and reduction in the numbers of amateurs who form a very useful pool of skilled people. We don't believe the frequencies we stand to lose will be put to a more worthy use, as this has not been the case in the past."

Other protests have been made. I have one in the form of a telegram sent by the operator of amateur radio station VK1, which reads—

"Protest slashing amateur frequencies benefit foreign broadcasting stop Query treatment Australians compared other countries example U.S. allocations 3500/4000 7000/7300 view service record emergency potential."

From Coff's Harbour comes this telegram, obviously from an amateur operator in that area—

"Further drastic restrictions frequency allocations amateur radio operators tragically short-sighted when Australia already lags badly higher technical education. As high school teacher deplore progressive extinction facilities training youth adults skills necessary our survival. Suggest F.A.S.C. organise compulsory courses Russian Chinese.—Mattel, Coff's Harbour High."

I do not propose to take up much more of the time of the House on this matter. I do stress again that the radio amateurs of Australia, like radio amateurs generally throughout the world, as the honorable member for Paterson has said, do a most useful job in the community. They are men who have trained themselves and who continue to train themselves by keeping abreast of developments in this field. When disaster strikes in the form of flood, hurricane or fire, they are always ready and always willing to take up the task of keeping communications open, and it has been the custom of this House to express appreciation of the services these men have given. I cannot stress too strongly that they are not to be regarded merely as hobbyists who operate these stations for their own amusement or their own benefit. They have given tremendous assistance to this country, both in time of war and in time of peace, and I suggest that the country is repaying them badly indeed when, as has been recommended by the Frequency Allocation and Services Committee, it seeks to reduce the channels available for them to carry on their work, maintain their skill, and extend their experience.

I hope that the Minister for Social Services (Mr. Robertson) who is at the table, will see that the arguments put forward in this House both during the day and tonight are brought to the notice of the Postmaster-General so that he may weigh the worth and the force of these arguments against the advice of the Frequency Allocation and Services Committee, which I believe is dominated by departmental representatives. Certainly it is a committee on which the amateurs are not represented. I believe that they should have the right to be



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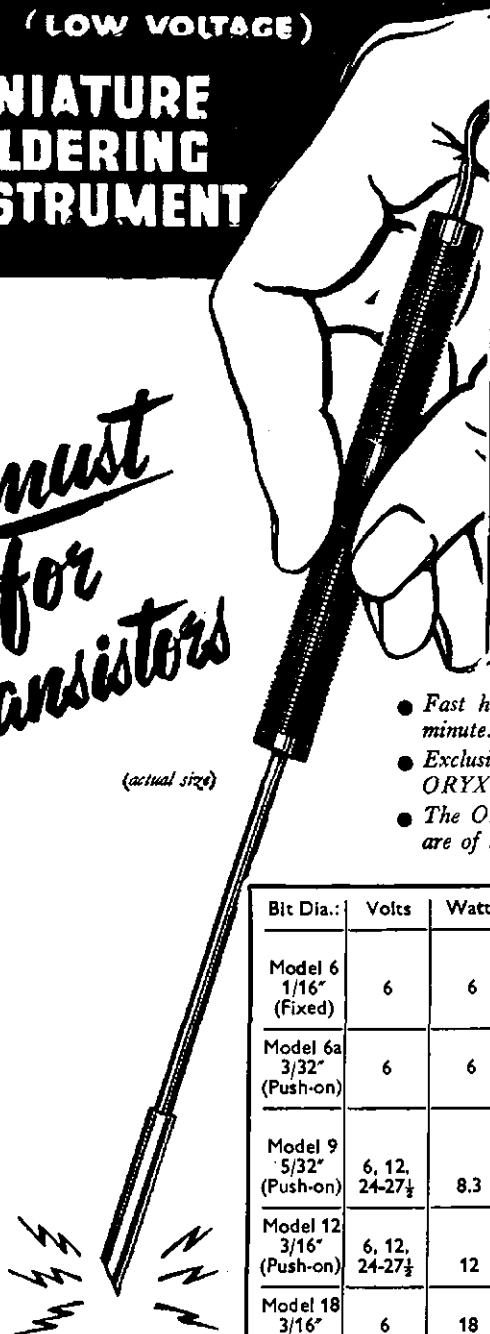
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represented on that committee and to put forward their views, even although the weight of numbers in the committee told against them. I hope that Australia will not play a scurvy trick on its radio amateurs by reducing the number of channels available to them for their work, particularly at a time when this country is developing and when its population is continuing to increase so rapidly.

I suggest most seriously, Mr. Deputy Speaker, that we should discontinue the present method whereby those matters are, in effect, dealt with in secret by a departmental committee whose recommendations are adopted, and sent overseas as the views of this country without first having been ratified by this Parliament. In fact, they are never dealt with by this Parliament—never brought before either this House or the other House. These recommendations then become legislation by international convention, not legislation by this Parliament. I believe that that is a very grave fault in the procedures that are adopted in these cases, and I hope that the Postmaster-General will take the opportunity to discuss this matter with a view to correcting the procedures.

SIR WILFRID KENT HUGHES (Chisholm).—I should like to join with the honorable member for Paterson (Mr. Fairhall), the honorable member for the Australian Capital Territory (Mr. J. R. Fraser) and other honorable members who have stressed the need for a different outlook to be taken by the Postmaster-General and the department in respect of amateur radio operators. I do not, like the honorable member for Paterson, know the technical side of this subject. Also, I have not in my possession the details that the honorable member for the Australian Capital Territory has, to judge from his speech. However, I have already received three telegrams on the matter from three of the leaders of the amateur radio operators in my own State, Victoria. I was recently, with some other honorable members, in Antarctica. Communications from many Australian stations there are received by an amateur radio operator, in touch with other amateur operators all over the world. I know well the excellent job that amateur radio operators have done in recurring national crises, such as bush fires and floods, in every part of Australia.

MR. DUTHIE.—And in shipwrecks.

SIR WILFRID KENT HUGHES.—Yes, and also in shipwrecks, especially in other parts of the world. The honorable member for High-botham (Mr. Timson) also reminds me of the work that they did in wartime. Here we have a not very vocal section of the public, but a very important section of it, whose members have given a lot of their time to something which some people may call a hobby, but which is really a science. These people have very often produced results which have been of great value to the commercial radio operators. Now we propose—or we did propose, at one stage—almost to ignore them before this international convention meets. This is another instance, Mr. Deputy Speaker, of something that I have mentioned in this House before. I make another plea—perhaps only a plea in passing, but still a passionate plea—for more consideration to be given to the proper workings of, and procedure in, this House of the Parliament. We are divorced from the people. Unlike a State Parliament, we are not sitting in the main centre of population of the area we govern. As a result of the procedures we follow, either we do not discuss things of importance—in the present case, the question of the wavelengths for amateur radio operators—or we put bills through with such speed that the people who will be affected do not even have a chance to make representations to their elected representatives on matters that they would like to be considered, and which very often should definitely be considered, before the measures are passed. Can we blame these people if they think that we and the Federal Public Service have developed what they term a fine disregard for the feelings of the people we are supposed to govern? I hope that every member of the House will consider this question of parliamentary procedure and, particularly in this case, the question of what the honorable member for the Australian Capital Territory has called "legislation by international convention".

We had another case recently of such legislation by international convention. This was in the civil aviation field, and concerned a charter agreement made some time ago, which was unknown to the public generally.

Therefore, I not only join with those who ask the Postmaster-General to reconsider the position regarding amateur radio wavelengths, but I also join with the honorable member for the Australian Capital Territory in regard to legislation by international convention. If the

international conference concerned were a conference of the International Labour Organisation, we would proceed as usual. We would send some of our leading businessmen to the conference, in company with the public servants, as representatives of Australia. Why should the amateur radio operators have to raise funds to send their observer to this international radio conference, which is to deal with something that is not just a matter of concern to individuals? I think that everybody in the House will agree that the work of the amateur radio operators warrants their representatives being included among the people Australia is sending to this conference. However, we can only ask that the matter be reconsidered. The Minister for Social Services (Mr. Robertson), who is in charge of the House at the moment, has been at the table for only five minutes, so he will not know what was said by the honorable member for Paterson, and he will know only very little of what was said by the honorable member for the Australian Capital Territory. However, I ask him to ask the Postmaster-General (Mr. Davidson) to read in tomorrow's "Hansard" the remarks of these two honorable gentlemen, so that he will be fully apprised of what has taken place in the course of this debate.

HOUSE OF REPRESENTATIVES— 7th MAY

MR. MAKIN.—I desire to direct a question to the Postmaster-General. Having received a telegram of protest from amateur radio operators in South Australia at the proposal of the Postmaster-General's Department to recommend a reduction in the number of channels available for amateur radio service and research, I ask the Postmaster-General whether he will have this matter further reviewed, particularly in view of the splendid help given in radio development and technical suggestion by amateur radio operators. What has prompted the department to think of sanctioning the backward step that has been suggested?

MR. DAVIDSON.—The honorable member for Bonython refers to a matter which is at present receiving attention in the Supply debate. It was mentioned last night both in this chamber and in another place. I intend this afternoon or this evening to reply to some of the statements that have been made, and the matter raised by the honorable member will then be fully answered.

MR. DALY (Grayndler).—Mr. Speaker, I wish to take advantage of one of the rare opportunities provided by the Government for honorable members to air matters brought to their attention by constituents who are dissatisfied with the Government's actions as they affect them, both individually and collectively. The first matter that I want to raise concerns the re-allocation of frequency bands for the use of amateur radio operators. This matter has already been mentioned previously in this House. I have received a letter from one of my constituents, dated 3rd May, which reads—

"I would like to draw your attention to the proposed re-allocation of frequency bands for use by amateur radio operators. It has been officially suggested that the bands now in use be reduced to such narrow limits that only about 10 contacts would be possible at the one time on say 40 metres.

"Seeing that Australasian amateurs number about 3,000, the proposed narrowing down would force many of them to abandon an interesting and instructive pastime. Every night the bands are packed full of signals, so that even now large groups must operate to give everyone a turn; two-way contacts are extremely rare. I would suggest that the popular 40-metre band be increased to its width of a few years ago, namely 7,000 to 7,300 kilocycles. Further reduction of it would be unthinkable.

"The value of the large number of amateur stations and trained operators throughout Australia will be very great in the event of future emergencies."

This letter was written to me by a constituent of mine, and I believe in representing my constituents to the best of my ability. The writer states further—

"The hobby is at present spreading interest and knowledge about electronics, helping supply the technicians for the many branches of electrical industry, promoting international goodwill by the countless overseas contacts which go on 24 hours daily, and it is also keeping many people happily occupied in their spare time. Many boys from our schools have taken an interest in electrical careers as a result of seeing amateur radio displayed in their classrooms.

"Accordingly, I sincerely ask you to consider this subject carefully when it is raised in the House, and to defend the rights of amateurs to use the already over-limited frequency bands."

I think that letter supports the contentions that have been put forward by the honorable member for Paterson (Mr. Fairhall), the honorable member for the Australian Capital Territory (Mr. J. R. Fraser), and other honorable members from both sides of the House who are concerned at this intrusion into the rights of amateur radio operators. I ask the Postmaster-General (Mr. Davidson) to reconsider the changes that are mooted, and to meet the wishes of the amateur radio operators. When all is said and done, they are not asking for much. They are only asking for the right to enjoy a pastime that spreads international goodwill, trains men for careers, and is of benefit both to themselves and to the nation. I urge the Government to give effect to the opinions expressed by honorable members on both sides of the House concerning this proposed intrusion into the rights of amateur radio operators, who do much to further the interests of this country.

MR. FAIRBAIRN (Farrer).—I am in agreement with the honorable member for Grayndler on one point and that is the allocation of radio frequencies to amateur radio operators. I hope the Postmaster-General (Mr. Davidson) will have another look at this and see whether anything can be done.

MR. BRIMBLECOMBE (Maranoa).—I would like to direct the attention of the House to the feeling of frustration which exists among the amateur radio operators of Australia since the statement has been made that a restriction of the frequencies available to them has been recommended by, I understand, a technical committee.

I was mentioning the feeling of frustration that exists among amateur radio operators because of the announcement that they are to lose a proportion of the bands on which they are operating at the moment. Some months ago the amateur radio operators of Australia banded together and decided to send a representative overseas to fight their case at the international conference to be held in Geneva. They will try to fight mainly commercial interests to retain these bands. Imagine their frustration when they found that this Government, through the technicians of the Postmaster-General's Department, has sent a recommendation that the amateurs should lose one-third of the wavelengths they are using at present. It seems to be a foregone conclusion as far as this Government is concerned, and it seems to have approved of this proposal, and I suggest that the position with regard to the forthcoming conference is untenable.

The statement has also been made that the amateurs are not using to the full the bands that are allocated to them at present. A monitoring system has been used to ascertain whether these bands have been used. Let me remind the House that the majority of amateur radio operators work all day and can operate their radio equipment only at night or at week-ends. If a check is made of the use of these bands, it will be found that these are the times when they use the frequencies most. To whom is it proposed to give these bands? I understand that they will be given to some commercial interests, either overseas or in this country; and in any case it will probably be found that broadcasts on these bands will be jammed by overseas operators. When one considers the service that these amateurs have rendered the country over the years, this treatment of them is just not good enough.

There is another matter that I want to mention in this connection. It concerns the restriction placed on amateurs as a result of which they can broadcast only in English. In every other country, amateurs may broadcast in any language they like; but here the broadcasts may be in English only. No other group does so much towards cementing good international relations as the amateur radio operators.

POSTMASTER-GENERAL'S REPLY

MR. DAVIDSON (Dawson—Postmaster-General).—I want to confine my remarks this afternoon to certain references that have been made to the forthcoming administrative radio conference, a conference of the member nations of the International Telecommunications Union, to be held in Geneva commencing on 17th August and continuing for some considerable period. In this debate, references have been made to certain proposals which are under consideration and which affect the Australian amateur radio operators. It has been obvious to me that there exists a considerable amount of

misconception as to the meaning of the proposals and their application. This has been due, I think, in most cases although not in all, to the fact that the information of honorable members has been gained from letters and telegrams they have received during the last two or three days from members of the Wireless Institute of Australia. I am not questioning the action of honorable members in bringing the matter forward, because they have a perfect right to make representations in this chamber on behalf of those who get in touch with them. But I do say that the references they have made do not convey the complete picture. Therefore, I welcome this opportunity to give some further information to the House.

In doing so, I do not propose to refer in detail to statements made by different honorable members. I shall take the general survey of the position which was offered to this chamber. I think last night, by the honorable member for Paterson (Mr. Falrhall). I shall take his remarks as setting out the main points that have been made in the debate, and I shall apply myself to them. Let me say that recently I have had a considerable amount of discussion on this subject with the honorable member for Paterson who, as every one knows, has interested himself for very many years in the field of radio and has acquired a considerable amount of knowledge on this subject, although he himself is the first to admit that he is not a technical expert. First let me say that I was a little surprised and, I think I may also say, just a little hurt to find that in his introduction of this matter he referred on several occasions to an alleged reluctance on my part to give information on the subject. In one statement he said that considerable pressure had to be exerted to induce me to give information. Well, I repeat that this surprised me a little, and I think I am entitled to give the House some history of the development of this matter, not simply for the purpose of combating his statement but also to provide some basic information regarding this question of our delegation at the conference that is to be held. This information may be of use to honorable members in determining whether the Government has been inconsiderate towards the amateurs and their supporters.

Let me point out that the first person to make submissions to me regarding the forthcoming conference, and the desirability of the Wireless Institute being looked after, was a gentleman who sits in another place. As long ago as March of last year, he submitted to me a request from the federal executive of the institute that the institute should be granted representation on the delegation which will go to Geneva next August.

MR. DUTHIE.—A good suggestion.

MR. DAVIDSON.—Yes, it was a good suggestion, and after some debate I agreed that the institute would have representation. The organization was so advised and was told that the representation would be on the basis on which representation is usually granted in such matters. That is to say, its delegate would not have voting rights, but would be present for the purpose of listening to discussions and taking part in deliberations within our own delegation. He would then be in a position to give the viewpoint of his institution and, if his arguments were sound, to influence the representations being made by the official delegation. This was agreed to and a member of the institute was appointed. I understand that each member of the institute subscribed £1 in order to pay the very considerable expenses involved. That was the first action taken by me, representing the Government to meet the legitimate requirements of the amateurs. Since then, there have been a number of conferences held by the committee which is charged with the task of preparing the proposals to be submitted at the Geneva conference. At these conferences the representatives of the institute have sat in and have taken part in discussions.

Quite recently, the honorable member for Paterson saw me and said he was perturbed at reports that had come to his notice that there was to be some curtailment of the frequencies available to Australian radio amateurs, and that he would like some more information about it. He asked whether I could give him some information. After some discussion with him, I obtained for him a detailed statement of the proposals that would be taken to this conference by our Australian delegation insofar as they affected the amateurs. In giving him this document, I said, "I would like you to treat this as confidential. It is for your own information." He said, "I would like to look at it, I do not know whether I should be expected to regard it as confidential." I gave as my reason for asking that it be kept confidential, the fact that in conferences such as the one in question, where there will be repre-

sentatives of practically all nations who will all come forward with different proposals, it is not considered good policy at the start to blazon to the world the proposals that will be put forward. It is considered better to wait a while.

The normal procedure is that a country sends its official proposals forward, and they are collated with all the other proposals by some body or group charged with the task. Then the combined proposals are sent out to each of the member nations that will be represented at the conference. At that stage, of course, the proposals of each country are known. But it is considered undesirable to give out all the information at the start. It was for this reason that I told the honorable member for Paterson that whilst I was happy to let him know what we proposed to do—because there was no secret about it, and nothing to hide—I thought that the proposals should be regarded as confidential.

After having read the document, the honorable member said that there was some lack of understanding in his mind. He said, "I am not a technical man. I still do not understand the reasons for some of the things you are proposing to do. Can I get some more information?" I arranged, therefore, that he should attend a meeting of the committee responsible for all the spade work in this matter—I shall refer again to that meeting later in my remarks—so that he would have the opportunity of discussing with the technical experts the basis of the proposals that would be going forward. I arranged with the honorable member for Paterson that he attend the meeting of the full committee held in Melbourne nearly a fortnight ago. The past-president and the president of the institute were in attendance. After this meeting the honorable member expressed himself as being very appreciative of what had been done, but he said to me, "I still am not happy, because I think there is some danger of the amateurs being slowly squeezed out, and I want to be able to use this information you have given me as confidential in order that I may do my best to look after the interests of the amateurs".

At that stage, the information had gone to the co-ordinating body in Geneva. Therefore, the reason which applied previously regarding the confidential aspect of our proposal was not then nearly so strong, so I said to him, "All right, go ahead". If I had not said that, probably this debate would not have arisen in this House, because it is being carried out on the basis of the information which I made available to the honorable member for Paterson, and which he, in turn, passed out to the members of the Wireless Institute of Australia. That is why honorable members have got their telegrams. Do you wonder, Mr. Deputy Speaker, that I say this because it is good background information? I fail to see any evidence of reluctance or any evidence of secrecy in these matters that have been referred to, not by the honorable member but by another gentleman who has a personal interest and writes about us from time to time in some of the press.

MR. HAMILTON.—Is he a member of Parliament?

MR. DAVIDSON.—No, but we see him about the place quite a bit. Now, having disposed of that little aspect of the matter I want to go on and deal, briefly, of course, with some of the major points that have been put forward by the honorable member for Paterson. I hope that he will realize that though I am referring to him so often I am not just picking on him. He put forward the major arguments on behalf of the amateurs. He, first of all, expressed a fear. He said that he was afraid that one of these fine days Australia would wake up and find that it was committed, as a result of this conference, by an international agreement concerning the allocation of radio frequencies channels throughout the world, and Australia's use of those frequencies, without the knowledge of the Government, and without the knowledge of the Parliament, and without the knowledge of the people. That was a very extravagant statement.

MR. POLLARD.—Not necessarily.

MR. DAVIDSON.—I think it was a very extravagant statement. In order to allay any such fear, I shall outline the procedure to the House—how the use of this spectrum is determined, not only internationally but in Australia, and what supervision the Government has over this highly technical matter. It must be realized that this is an extremely technical matter to which no one in this House is competent to apply himself, knowing exactly what is meant by kilocycles and megacycles, channels and bands. There is proper supervision over their operation by highly technical men because they work under the general instruction as to the policy of the Government.

There is, first of all, a body known as the Telecommunications Advisory Committee. This is a high-level body, consisting of representatives of the major services and other such bodies, and under it works the Frequency Allocation Committee which does the actual work of supervising the allocation of frequencies and how they should be apportioned between all the claimants. It is the function of the Postmaster-General's Department actually to carry out the task of allotting to the various applicants the particular frequencies they may use.

I am glad that the honorable member for Paterson has come into the House. He referred quite a bit to the action of the Postal Department. I know that he will agree with me when I correct him to the extent of saying that the department is actually implementing determinations made on behalf of the Government by the committees to which I have referred. Any such allocation by the Postmaster-General's Department is subject to the general supervision of the Minister in charge of the department.

As an example of what we do from time to time to ensure that a tab is kept on what is developing—because, in this field developments are very rapid—I point out to the House that one of my first acts after taking over the portfolio in 1956 was to provide for a complete review of the use of the spectrum in Australia. This was carried out by that high-level committee, which undertook a thorough review to see whether there was any case of the improper use of the spectrum, or any wastage of any bands or frequencies in the spectrum. After the investigation, the committee submitted a complete report to the Government, and it was considered by the Cabinet—and recommended that for the present no alteration of the allocations then existing be made. But it was also recommended that because of the steady progress and the increasing demands in this field it would be desirable that a further review be carried out in three years' time. That means that the recommendation was that a further review should be made this year, 1959.

There has not yet been such a further review, because a couple of months ago I reported to the Cabinet that an international conference which would deal with this matter would be held in the second half of the year. I submitted that undoubtedly there would be certain recommendations made—and we would have to consider whether or not we would adopt them—that might have some bearing on our own internal allocation. Therefore I said, it was highly desirable to hold up any further review of the use of frequencies in Australia until after we had received the report of the international conference. That was agreed to. I cite this as showing that any suggestion that things can happen of which the Government knows nothing and over which it has no supervision are not soundly based.

What is going to happen with regard to the recommendations when they are finally received? As I have said, the proposals have already gone forward to the International Telecommunications Union at Geneva. They have just been co-ordinated and are being sent back to the countries concerned. Following that the conference will take place. The conference will break up into a large number of committees to consider various proposals that have been put forward, and after months of deliberation decisions will be taken. Our representative will come back and a report will be presented to the Minister. It will deal with matters of policy and with matters of administration. Matters of policy will have to be referred to the Government for ratification. It is quite possible that in some cases we may be required to effect some instrument of ratification on some of the proposals, if we agree with them, and others will be referred to the Government. Also, undoubtedly a reference will have to be made to the Department of External Affairs, which is very closely associated with matters like this. Therefore, any suggestion that one day we shall wake up and find some agreement on our doorstep of which we know nothing is completely unfounded.

The honorable member referred to the fear which I know is in his mind—it is a very real fear—and I have told him that it is a matter on which we differ. His fear is that as a result of what he has termed a drastic reduction in the use of frequencies to the amateurs of Australia, they will be slowly squeezed out. He fears that these proposals will push the amateurs quite a way towards the door and that in a few years time the spectrum will become so crowded that they will be outside the door. That is more or less how he expressed his fear to me. I have told him quite plainly why I do not accept that viewpoint at all. Although I have no more technical knowledge than other honorable members, as the responsible Minister who has given a lot of attention to this mat-

ter, I am prepared to give a complete denial of any attempt to squeeze out the amateurs and of the suggestion that the present proposals provide drastic reductions. As a matter of fact, Sir, as I shall attempt to show in a few minutes' time, it amounts not so much to reductions as to the rationalisation and alteration of existing frequencies.

May I say, in reply to statements that have been made by a number of honorable members about the committees concerned with this matter, that the Postmaster-General's Department has a very real appreciation of the value of amateurs to Australia and of the work that they do. I think it is correct that at least half the members of the Wireless Institute of Australia belong to the staff of the Post Office. The chairman of the Frequency Allocation Sub-committee which I have mentioned is himself a keen amateur radio operator. We in the Post Office acknowledge, readily and gladly, the valuable work that has been done by radio amateurs, not only in war, but also in peace, in times of emergency caused by floods, fires and similar disasters. We have a proper realisation of the valuable work done by radio amateurs and, for that reason alone, the department as an operating body, would not tolerate any action which would eventually deprive Australia of the valuable services of these people. I am sure that the honorable member for Paterson will acknowledge that at the conference held in Melbourne two weeks ago, which I have already mentioned, the chairman stated categorically, in reply to some remarks on the matter, that there was no intention to force amateurs out of the field of radio.

I have to point out that the committees concerned with this matter are giving effect to Government policy. The Government has a responsibility to provide frequencies for all the services which demand them. For instance, Mr. Deputy Speaker, we have to provide frequencies for fixed and mobile radio services, many of which provide a livelihood for those who operate them, and many of which are conducted for the purpose of saving life. All are vitally important, therefore. I refer to services operated by bodies such as rural fire brigades. These bodies require frequencies. Honorable members on both sides of this House, and members of another place, have frequently discussed with me the allocation of frequencies for rural fire brigades. The Overseas Telecommunications Commission, the Defence Services, and the national and commercial broadcasting services of course require frequencies. In addition, we have increasing calls from State and local government authorities, including police services, metropolitan fire brigades and ambulance services. All these are using radio more and more for their valuable and legitimate purposes. As honorable members will realise, these services are very important. We have a demand for frequencies also by Radio Australia and private industrial and commercial users such as taxi-cab companies and fishing fleets. The last named, particularly, depend more and more on radio, not only for the control of the boats from their base while at sea, but also for their safety in times of bad weather. In addition, we are even now developing radio services for doctors. Several doctors will be able to combine in a radio service so that they may be called as they move about their fairly large practices—I nearly said "electorates".

So honorable members will see that I am not saying that because of these increasing demands for frequencies—and here, I think, is where I differ from my friend, the honorable member for Paterson—we must push the amateurs to one side. That is not so, but it is necessary to have some rationalisation and, from time to time, to work out plans which will ensure that proper weight is given to the demands of all these various services, and that each gets its fair share of the frequencies available in the spectrum. There are various ways in which this objective can be achieved. The honorable member himself referred to the possibility of getting more channels on the one frequency. That is something which is being investigated and which will continue to be looked into. But I repeat that the need to provide services for these other people does not mean that the amateurs will be ignored.

Let me deal briefly now with another aspect of the matter, Mr. Deputy Speaker. I said that drastic alterations were not proposed. Some reductions of frequency bands will be made. I should like to say, without going into a lot of detail—which I think I can say without giving offence would not be understood—that the major proposals affecting Australian amateurs provide for only a few reductions, which I shall indicate. The existing 3.5 to 3.8 megacycles band is to be reduced to 3.5 to 3.7 megacycles. The explanation given to me is that, under the Atlantic City allocation, a band of 3.5 to 3.9 megacycles was allocated to amateur,

fixed and mobile services. The three were bracketed in that band. Australia does not favour the sharing of bands in this way, and the proposal that we shall make to the conference of the International Telecommunications Union, at Geneva, is that the band be broken down to 3.5 to 3.7 megacycles for the amateurs and to 3.7 to 3.9 megacycles for fixed and mobile services. For somewhat similar though not identical reasons, the band of 7 to 7.15 megacycles is to be reduced from 7 to 7.1 megacycles, and the 14 to 14.35 megacycles band is to be reduced to 14 to 14.25 megacycles. Apart from one or two other small reductions of the same kind, according to the information that I have received, there are no proposals for the alteration of any of the other bands which are now allocated to amateur use and which provide considerable capacity for the expansion of amateur activities.

MR. BRIMBLECOMBE.—What are the other bands that are affected?

MR. DAVIDSON.—I have not covered the full field for the reason, for one thing, that time is running out. It has been said that these proposals mean that Australian amateurs will have available to them not so wide a field as their American colleagues have. Actually, there is not very much difference between the frequencies available. In addition, we have to remember that there are 180,000 licensed amateurs in the United States of America, compared to 3,700 in Australia. So it seems to me, with my limited knowledge of the technical aspects, that our amateurs are not badly off compared with their British and American colleagues.

MR. FAIRHALL.—But they all work on the same band at the same time.

MR. DAVIDSON.—I am aware of that fact. Nevertheless, my advice—and it is the best advice—is that Australian radio amateurs do not suffer by comparison with our American friends.

In conclusion, Mr. Deputy Speaker, I want to say that these proposals have been arrived at only after the most careful consideration of all the requirements of all the services by the Frequency Allocations Sub-committee, which, as I have stated here, is an expert advisory body—an advisory body, mark you—appointed to consider such matters. When the availability of bands to the amateurs was under consideration, representatives of the Wireless Institute of Australia took part in the discussions and I believe that their views were given reasonably sympathetic consideration. I think I am entitled to say that my advice is that, following the meeting held in Melbourne, the honorable member for Paterson was good enough, at the completion of very thorough discussions—I am sure he will correct me if I misrepresent him—to say that he had gained from the discussions a much clearer appreciation of the difficulties associated with the varied problems involved, and that he felt that those varied problems had been dealt with in a very realistic, business-like and sympathetic manner, which was aimed at making the best possible use in the various spheres of the frequencies available in the spectrum in the best interests of Australian radio. That is my belief, too.

I point out that our representatives will discuss these proposals and other very wide proposals with representatives of other nations at the conference at Geneva. The Australian representatives will go into the discussions, with the background of their knowledge behind them; so that they will know generally where they are going. They will enter on the discussions with open minds. Furthermore, they will have with them a representative of the Wireless Institute, who will be quite entitled to discuss with them at any time proposals that have come up at the conference, and I am assured that his representations will be given due weight in the consideration of the matters raised at the conference. Whilst I think that this debate has served an exceedingly good purpose by opening up the matter and giving honorable members an opportunity to express important viewpoints, I say that the fears which have been expressed, and with which I have tried to deal, are ill-founded. In view of the fact that the conference is not due to start until August, and that it will be conducted openly, I think that the fears of honorable members are certainly premature.

MR. FAIRHALL.—The Postmaster-General (Mr. Davidson), in dealing with this matter, said it was reported that at the conclusion of the conference called by the Frequency Allocation Sub-committee in Melbourne two or three weeks ago, I had stated that I had gained a new appreciation of the problems. I should like to explain, Sir, that the Minister has been wrongly informed in this matter. I learned nothing new. What I said was that I understood very thoroughly, and always had, the

tremendous difficulties facing his department in solving this particular problem. Nevertheless, I learned nothing new from that conference. Nor did I say that the matter had been dealt with in a business-like fashion. I said that in my view the department was tackling this problem with a full sense of its public responsibilities, but that the members of the Frequency Allocation Sub-committee, representing as they do major users of the frequencies in this country, would be something more than human if they did not give to the services which they represented a greater priority than they gave to the amateurs whose frequencies they proposed to cut.

MR. REYNOLDS (Barton).—I join other honorable members who have expressed the hope that there will not be any interference with the work being carried out by people interested in amateur radio. Not only have they been of great assistance in times of stress, such as during floods, bushfire and war, but so far as I know, they have also been in the vanguard of radio experimentation. If that is so, I hope that the Minister will keep that fact in mind when the decision that he has indicated is being made later in the year.

MR. BURY (Wentworth).—The whole House is indebted to the honorable member for Paterson (Mr. Fairhall) for directing the attention of the Parliament to, and being the cause of having published, the proposals which Australia intends to make at the forthcoming telecommunications conference. The matter which he raises is important. The amateur radio enthusiast has played a very big part in pushing forward the frontiers of the whole electronics industry. The existence of a large number of small experimenters tinkering away at their hobby has pointed the way to many improvements that have subsequently been adopted on a large and growing scale. An instance was provided during the war when those who had qualified in the field of amateur radio came into our factories and played a very big part in developing the electronics industry, which served Australia so well during that period.

This is a case in which we have to be particularly careful that powerful bureaucracy, entrenched in the Postmaster-General's Department, and other bodies—commercial and governmental—do not push out individuals in a small way who may one day well be the precursors of further improvements and new ideas in this very important industry. I hope that we will consider the matter very carefully before bringing forward a policy that goes further than does the United States of America, which has all our problems on a much larger scale. It has more amateur radio operators and a very much larger broadcasting industry, involving many more stations. That country has been able to find solutions to many of these problems. We must ensure that our own technicians in the Postal Department are not just looking for an easy way out instead of overcoming their technical problems and thus permitting much greater freedom to radio operators.

HOUSE OF REPRESENTATIVES— 13th MAY

MR. FAIRHALL (Paterson).—During the course of the supply debate last week, I had occasion to bring to the attention of the House certain proposals which had been sent overseas, affecting the future interests of amateur radio operators in this country but which I believe also affect the national interest. Last Thursday, the Postmaster-General (Mr. Davidson) made reply to my statement and in addition to the great misstatement which I felt obliged to correct at the time, there were several other misstatements in the Postmaster-General's address which I cannot let pass without answer. It might also be appropriate to draw attention to some endorsement in the Postmaster-General's speech of the course I have felt obliged to take in bringing this matter to public attention.

The Minister drew attention to some misconceptions which he thought existed in the minds of honorable members concerning telegrams received by a number of people on both sides of the House. If the Minister believes that those telegrams do not indicate a wide public approval of radio amateurs and the work they are doing in this country I think that he deludes himself and would be wise to pay a good deal of attention to what I think was an extraordinary demonstration of support which I for one had not expected on such a wide scale.

The Minister said that he was somewhat hurt because I had accused him of reluctance in

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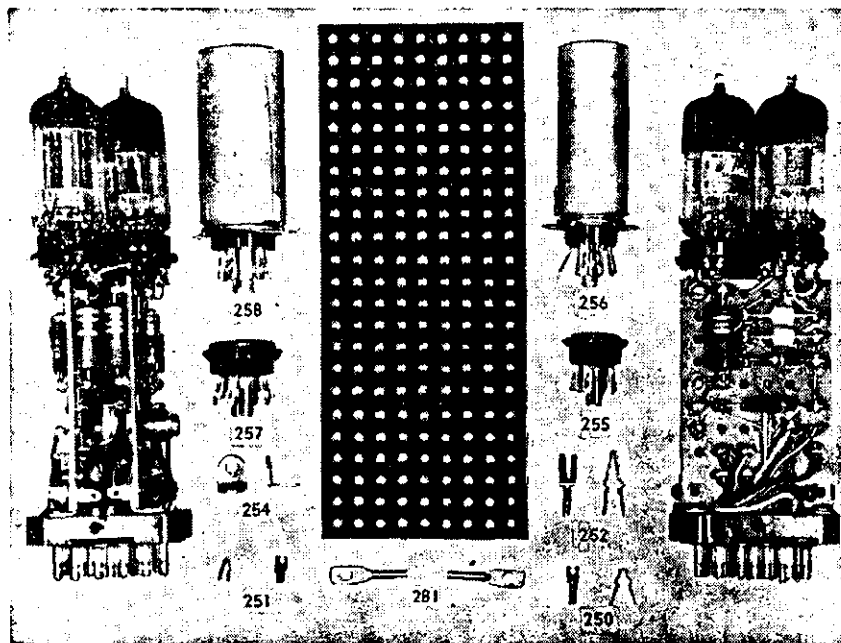
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making public the information which was the subject of my statement, and because I had accused him of releasing it only under pressure. As you know, Mr. Speaker, and I draw attention to the fact that the proposals which had gone abroad in Australia's name had been developed by a sub-committee within the Minister's own department, and had it not been for the pressure which I and others had applied to the Minister that information would not have seen the light of day. On the Minister's own statement, the debate which we had in the House last week would not have ensued, and the people of this country would have been kept in ignorance of these proposals which are of tremendous importance.

The House will judge whether or not there was reluctance on the part of the Minister when I point out that during the three months from the end of January until almost the end of April I wrote to the Minister three times asking that I should be given access to these proposals. I had no answer to that correspondence, except verbally, and clearly there was reluctance on the Minister's part to disclose what was in these recommendations although they had been sent overseas for the express purpose of publication to every other nation that was a signatory to the international convention.

On the 15th March the Minister gave me a copy of an inter-departmental memo which set out the information I wanted. Unhappily, the document was marked "confidential". I may say that both I and the Wireless Institute of Australia, which knew something of the matter, kept the contents of the document confidential. I pointed out to the Minister, on 19th March, that either he must withdraw the letter or he must withdraw the confidential restriction on the memo. It will be clear to the House that information of the kind I have sought and which I believe ought to be exposed to public debate is not much good if labelled "confidential".

In the meantime, the Minister had been co-operative to the point of arranging a meeting in Melbourne of the frequency allocation sub-committee of his department. I was given an invitation and an opportunity, together with officers of the Wireless Institute of Australia, to meet that committee and discuss—I am afraid somewhat more superficially than the problem requires—the matters contained in the recommendation. Now, Sir, I think that this was a gesture designed to allay my fears that this matter was going to work out to the detriment of the Australian amateur. The fact was that I came away from that meeting not at all satisfied that the right thing was being done, and as each section of the proposal was discussed I clearly stated to the Frequency Allocation Sub-committee that it appeared to me that in the whole matter the amateurs of this country were getting only second priority. It was that matter of priority that I wanted to correct.

Therefore, there is no ground at all for the misstatement in the Minister's address that I had indicated at the end of that conference that I was satisfied that the matter had been dealt with in a businesslike way and sympathetically. What I did say was that I understood the very considerable problems which faced the department in this respect, and that I believed that the department had brought to the matter a sense of responsibility and had perhaps looked after the public interest, as it saw it, but that we quarrelled as to what really constituted the public interest in a matter of this kind. Sir, it was not until the end of April, with this parliamentary period drawing rapidly to a close, that I felt obliged to assure the Minister that I would raise the matter in the House in one way or another because I felt it was too important to let pass without some public debate. Now, of course, Sir, the Minister makes some virtue out of necessity, and says that if he had not published the information the debate would not have ensued. That is perfectly correct. But the people of this country now have an opportunity to know what is proposed in part for them, and those interested in the matter, and honorable members on both sides of the House and in another place have been given an opportunity to express a view, which, I may say, is very much in favour of the retention of the privileges which Australian radio amateurs enjoy.

The Postmaster-General applied the term "rationalisation" to those proposals. But, Sir, this is an odd sort of rationalisation. It could well be labelled with another name, when one particular band is to have one-third cut from it, and another band—the 40-metre band, which is used by amateurs for international communication—is to have one-third lopped off from what we have, and what we have represents only half of the band which was reserved for international use by amateurs on the occasion

of the last International Telecommunications Union conference. On the 20-metre band, also used for international work, one-third is to go, and one-half is to be cut from the band which amateurs enjoy at 5 metres. Now, in the face of this sort of thing there is not much point in the Postmaster-General assuring us that there is no intention of abolishing amateurs in this country, because the path to oblivion for the amateur operator in this country will be strewn with this sort of intention. There comes a time beyond which these bands, although some of them may remain, will be unusable. We are rapidly approaching that situation, and I would be particularly interested to know what the Postmaster-General and his department would regard as the irreducible minimum beyond which amateurs would disappear and with them a great asset to this country.

The Minister has pointed out that nobody in this House is competent to express a view on this technical problem. With that I would quarrel. But assume it is correct that nobody in the Government, in this House, or—let us face the fact—the Minister himself, is competent to deal with this matter on technical grounds, and that therefore the Minister would be obliged to accept the technical advice of his officers. I draw attention again, as I drew attention before, to the fact that these technical officers are the people who have drawn up these proposals. Sir, it is an odd circumstance if this House and the Government are to exclude themselves from having a view on a technical problem because their members are not as competent as the officers of the department to deal with it.

I think that something of the attitude of the Postmaster-General's Department was indicated in the Minister's own words when he said, as he did, "Nevertheless my advice—and it is the best advice—is that Australian radio amateurs do not suffer by comparison with our American friends". The real fact of the matter is that in the bands that I referred to, two of them in particular, the Americans are operating on the full band made available to amateurs by the International Telecommunications Union and yet we, on our part, have been restricted by purely local option to half of that band. It seems to me that what we need is some understanding that Australia will abide by the reservations made for world amateurs by the international body to which we are a signatory, but it is not going to be very satisfactory if we send our delegation to Geneva with the firm intention in their minds to reduce the bands, only to find themselves frustrated by an international agreement, and then to have the Postmaster-General's Department apply some local option and so leave us as though we had never gone to the international conference. However, Sir, my aim is not to stir up any misunderstanding or ill feeling about this matter. It is to make a genuine appeal to the Government to review the matter in the light of the representations which have been made so widely in the last week, and do something better for the amateur of this country who, in my opinion, and apparently in the opinion of the House, deserve better of their Government.

QUESTIONS—13th MAY

In the House of Representatives, on Wednesday, 13th May, Dr. Evatt, Leader of the Opposition, directed a question to the Acting Prime Minister (Mr. McEwen).

DR. EVATT.—I desire to ask the Acting Prime Minister a question on a matter which has been raised in the Opposition party room this morning and to which my colleagues, the honorable members for the Australian Capital Territory, Shortland, Newcastle and Parkes, and many others including particularly the honorable member for Paterson, have devoted special attention in a recent debate. It concerns the probable reduction, perhaps of a drastic character, in the number of amateur bands available, which is proposed by the Postmaster-General's Department for adoption at a forthcoming Geneva conference. As the right honorable gentleman knows, the number of Australian amateurs has more than doubled since the war years and in situations of emergency they give services of considerable importance to the public. Their scientific work, especially in tracking satellites, has become most important. They are amateurs; they are not professionally engaged in this essential undertaking.

The wide feeling amongst them is that not only their interests but the public interests will be injured, and I ask the Acting Prime Minister to look into this matter. I know that the Postmaster-General has given his view, but it is mainly a departmental view. The

details of the proposal and the concern that has been created were explained by the honorable member for Paterson, who is an expert in this field. I ask the Acting Prime Minister to confer with the Postmaster-General to see whether some protection can be afforded to the amateurs. The matter should not be handed over to some group of subordinate officers, who might decide on a serious reduction in the available bands. We all regard this as a matter of great urgency.

MR. McEWEN.—I regret, as the right honorable gentleman will regret, that my colleague, the Postmaster-General, who has been handling this matter, is somewhat indisposed and in the care of a doctor today. He is not seriously ill but he is unable to be present. The right honorable gentleman and I have common ground in this matter and I assure him that my colleagues in the Government parties have also devoted themselves to this problem. We all concede that it is of very considerable importance and that the interests likely to be affected are not only those of the amateurs. The interests of the amateurs, who have worked with great value to the community and with satisfaction to themselves, must be reconciled with the broadening public demand for the allocation of bands. I have in mind such essential services as rural fire brigades and taxi cabs which require the allocation of a band. These are real technical problems with regard to allocation.

My colleague, the Postmaster-General, has arranged for two of the most senior officers of his department, who are in fact his advisers on this matter, to be in Canberra today and tomorrow. On behalf of the Postmaster-General I can say that those officers will be available for consultation with members of the Parliament who have a particular interest in this matter and who regard themselves as having sufficient knowledge to be able to form a judgment upon it. Those officers will be available not only to members on the Government side of the House but also to members on the Opposition side. I am also able to say that my colleague, the Postmaster-General, has arranged that a representative of the organised amateurs, chosen by themselves from their own ranks, will be recognised as an observer at the Geneva conference so that his view, if not his vote, shall be present at the critical stage.

Finally, my colleague has intimated to me that he recognises that there is so much general interest in this matter and such legitimate grounds for considering the public interest against the technical problems that are revealed, that he has said that he would prefer the final decision to be made by Cabinet rather than by himself.

On the same day (13th May), in the Senate, Senator O'Byrne asked a question on this matter of the Minister representing the Postmaster-General.

SENATOR O'BYRNE.—I ask the Minister representing the Postmaster-General a question without notice. In view of concerted protests that have been made by amateur radio operators, who are affectionately known as "hams", against the proposal of the Frequency Allocation Sub-committee regarding the restriction of frequency bands made available to Australian amateur operators, will the Minister consider the appointment of a parliamentary select committee to hear the claims and report to the Parliament on the position of the 3,000 operators throughout Australia who in the past have freely maintained communications when normal systems have broken down, who have an organisation known as the Wireless Institute Civil Emergency Network which comes into immediate action in times of distress, and who have every reason to believe that their operations will be drastically confined if the recommendation to restrict frequency bands is accepted by the Government?

SENATOR SIR WALTER COOPER.—The honorable Senator's question deals with a matter that was raised in this chamber two or three days ago by a number of Senators. I think that this is probably an appropriate time for me to read a statement in reply to the questions that were asked a few days ago, because Senator O'Byrne's question deals with the same matter. The Postmaster-General has provided the following information concerning Australia's proposals for discussion at the forthcoming administrative radio conference of all member nations of the International Telecommunications Union scheduled to commence in Geneva on 17th August, 1958:—

The proposals do not provide for drastic reduction of the frequency spectrum now available to Australian amateurs and have been framed in the best interests of all users. In

particular the portions of the frequency bands concerned are most urgently required to improve conditions for fixed and mobile radio services such as: Rural fire brigades, Overseas Telecommunications Commission, State and local government authorities, defence services, Australian national broadcasting services, Radio Australia, and private industrial and commercial users.

The proposals affecting Australian amateurs provide only for reduction of the existing band 3.5-3.8 megacycles to 3.5-3.7 megacycles, the 7-7.5 band to 7-7.1, and the 14-14.35 to 14-14.25 and the 50-60 band to 58-58. There are no proposals for alteration of any of the other bands now allotted for amateur use and which provide considerable capacity for expansion of their activities.

In some of the bands now available to the amateur body, observations over a long period indicate that in general they are being worked below capacity, and even if the proposals are carried at Geneva there will still be ample frequency space for existing and future amateurs to operate satisfactorily. It should be emphasised that in Australia there are approximately 3,700 licensed amateurs, whereas in the United States of America there are approximately 180,000 who have practically much the same frequency space for their operations.

The proposals for revision of the frequency allocation table were only arrived at after the most careful consideration of the requirements of all services by the Frequency Allocation Sub-committee, an expert advisory body which was set up to consider such matters. When the amateur bands were examined representatives of the Wireless Institute of Australia are invited to be present and were given full opportunity to study proposals and present their own views, which were given most sympathetic consideration.

SUGGESTED ACTIONS

● Parliament adjourned on 14th May but it is not too late to contact your local Member. During recess, Members are in touch with Ministers and Ministers are still responsible for their Departments. Keep the matter before your local Member and urge others to do so.

● The recommendations of the Frequency Allocations Sub-Committee were sent overseas before they were released in Australia. It is therefore in the interest of every Radio Amateur to send a copy of this issue to his overseas contacts. We have in this magazine the means of conveying to interested bodies in other countries the weight of political opinion backing the Amateur protests.

Extra copies of this issue may be obtained from the W.I.A., Victorian Division, P.O. Box 36, East Melbourne, or we will post a copy direct to any address you supply for 1/9 including postage.

The final proposals developed were arrived at in the best interests of all organisations which must make use of the spectrum. The Post Office is fully conscious of the work done by the amateur body in fostering international relationships and in rendering valuable assistance at times when normal communications are disrupted, and there is a proper appreciation of the need for retention of a reasonable and workable allocation of frequencies for their purpose. However, there are other and most important obligations to many other services which play a vital part in national development and operations, and the proposals for the revision of the frequency table to be discussed at Geneva are designed to promote the best interests of the country from an overall point of view.

It is emphasised that the claims of the amateur bodies were given full weight in arriving at final proposals. Australia's delegates will go to the Administrative Radio Conference with completely open minds and will have to consider the opinions of representatives of other nations with the object of arriving at the most equitable apportionment of the frequency spectrum.

In addition, the Postmaster-General has informed me that two of his officers, Messrs. Skerrett and Pearson, have now arrived in Canberra. They are only too willing to meet any person interested in this matter and to answer any questions put to them. If any honorable Senators wish to do so, I can arrange for them to meet the two officers.

SENATOR WILLESEE.—My question to the Minister representing the Postmaster-General is supplementary to that asked by Senator O'Byrne. The statement that Senator Sir Walter Cooper has just read was full of departmental jargon.

THE PRESIDENT.—Order! Is the honorable Senator asking a question or is he criticising the statement that has just been read?

SENATOR WILLESEE.—I was not criticising, Mr. President, I was commenting.

THE PRESIDENT.—Order! The honorable Senator will ask his question.

SENATOR WILLESEE.—That is what I was going to do, with your permission. Although the statement was rather wordy, it did not answer the question asked by Senator O'Byrne. That question related to the same matter about which Senator Hannan made a speech a few days ago. The sentiments expressed in that speech, incidentally, were shared by honorable Senators on both sides of the chamber. I ask

the Minister: Is it not obvious from his statement that Australian radio amateurs will be affected to a greater degree than radio amateurs in any other country of the world, and particularly the United States of America, by the proposed cut in the frequency spectrum? Although we appreciate the opportunity to discuss the matter with the departmental officers, is it not possible, even at this late stage, in view of the technical nature of the problem, to give the radio amateurs themselves the opportunity to discuss this matter with the departmental officers before the delegation goes to Geneva?

SENATOR SIR WALTER COOPER.—I understand that a representative of the association will attend the conference at Geneva, at his own expense. It is true that he will not have power to vote at the conference, but the Postmaster-General has made arrangements for him to have a full discussion with the delegates to the conference, so that he will be able to place before them the views of the amateur radio operators. As Senator Willesee apparently is very interested in this matter, I think the best thing he could do would be to have a discussion with the officers from the department, whom the Postmaster-General has so graciously got up here for the express purpose of speaking to members.

AMATEUR REACTION

To indicate to members the feelings of Amateurs in regard to the situation at the time these speeches were made in Canberra, some excerpts from a tape made by VK1GU, Arch Cox, and broadcast by VK2WI and VK5WI on 10/5/59, will be of interest. Herewith are portions of his tape:

I have no doubt that Amateur Radio in Australia is confronted by the worst crisis in its history.

It was no overstatement by our fellow member Alan Fairhall in Parliament a few days ago that the matters which, until last weekend, had been kept secret from most of us and from the Australian Parliament and public, although revealed to others overseas, fore-shadow irreparable damage to our fellowship and may ultimately threaten our very future on the air.

We are up against it as never before. One third of our frequencies on our three most-used bands are at stake. Time and circumstance are against us.

If any of you had any doubts about that, you are no realists if they were not decisively resolved by the defence of his Department which was really a confirmation and consolidation of the attack on the Amateur which the Postmaster-General, Mr. Davidson, made to Parliament on Thursday (7/5/59).

The events of this week have splendidly shown that the record of Amateur Radio is better known, and the job it has done for Australia in peace and war is much better understood and valued by outsiders from our ranks than I for one, and, I think, probably most of you, had ever supposed.

It has been an immeasurably heartening experience this week to see member after member, in each House of our national Parliament, from all parties and from all States, and from every cross section of our Australian community, rise in Parliament in our defence.

From that spectacle I am emboldened to hope that what members of Parliament know and think on this matter, Australians generally also know and think.

That is our greatest hope in withstanding the attack which has been made upon us by an authoritarian and entrenched, but not enlightened or liberal bureaucracy.

Up to date, only the voice of the Postmaster-General has been against us and those who have supported us are:

Senators Wade and Hannan from Victoria, Wood from Queensland, Laught from South Australia, Willesee from Western Australia, and Wright from Tasmania.

And in the House of Representatives our sponsors have been Professor Bland, and Messrs. Lucock, Reynolds, Bury, Daly and Fairbairn from New South Wales, Sir Wilfrid Kent Hughes and Mr. Bird from Victoria, Mr. Brimblecombe from Queensland, Mr. Jim Fraser from the Australian Capital Territory.

In telling you of their help I am brought to the most practical and constructive things I want to say to you.

But first I want to say this, because I have no charter from the President, and would accept none, to join with Divisional officers in a mere essay in rabble rousing.

If you don't honestly believe that Amateur Radio is worth a future; if you don't really think that its record of achievement in technical progress, in national defence, in humanitarian and emergency service, in international impact for international goodwill and understanding, in simple, ordinary human decency of communion between man and man and nation and nation are qualities worth sustaining, tune now to another channel.

But if you do believe that on record we have earned our place in the sun, that we are getting a raw deal, that we are entitled to a better one, come along and pull your weight.

The first steps are simple but vitally important.

We have had a magnificent gesture of what I hope is only preliminary support this week.

But it is still far too small for our purpose, and it is so only because the immense latent reservoir of goodwill so plainly waiting to be tapped still does not know of our difficulty.

That predominantly is the fault of those listening to me. It is so because you have not sought the help you are entitled to ask.

Every one of you who has not yet done so should telegraph immediately to his member of the House of Representatives and to at least one Senator from his State to ask those Members, in the coming week, actively to oppose the cut on our operating facilities confirmed by the Postmaster-General. To do this is your democratic right as a member of our Australian community.

Parliament will adjourn on Thursday, and is unlikely to re-assemble until August. And in August, too, the I.T.U. meeting will be assembling in Geneva to decide your future.

Follow up your telegram with a letter to your member. Put your case to him, and answer the counter claims. State your case as simply and as clearly as you can, and make it as brief as possible.

If, when the Parliamentary recess begins in a few days' time, you can call on your Member at his office for a personal interview, do so by all means.

Tell your friends about what is happening. Try to show them of the justice of our case. Public opinion is the best ally we can hope to enlist now, but we must be our own recruiting sergeants.

I would urge all of you to read in your nearest public library the reports in this week's Hansards from the Federal Parliament.

[These are published elsewhere in this issue.—Editor.]

But to give you the reassurance that an impact has already been made on Parliamentary opinion, that the ever responsive sense of Parliamentary fair play has been aroused for us, and that a foundation has been laid upon which we should seek to build, I quote to you the brief glimpse that my time will allow of what has been said for us in Parliament in the last few days.

[Arch VK1GU then gave pertinent extracts from various members' speeches in Parliament which are printed in full elsewhere in this issue.—Editor.]

You may have noticed that I have not mentioned the work of one man who has helped us. That is Mr. Alan Fairhall. I have left this to mention separately because, as all New South Wales members would expect, his work for us has been magnificent.

MR. FAIRHALL, M.H.R., TALKS TO THE AMATEURS OF AUSTRALIA

On Sunday morning, 17th May, VK-2WI (the W.I.A. New South Wales Divisional station) arranged an Australian wide coverage so that Mr. Alan Fairhall, M.H.R. (VK2KB), could give a talk to the Amateurs of Australia on events since the publication of the Proposals to cut Amateur frequencies.

This was broadcast on the 7 Mc. band by VK2AWX and relayed by many other stations on the 14, 21 and 28 Mc. bands. Reports have indicated that his speech was received very well in all States of Australia, New Guinea, and New Zealand.

So that members who were unable to listen may know what was said, herewith is a copy of his excellent talk.

Good morning fellow Amateurs. The line-up for this morning is rather overwhelming, but I'll see what I can do to justify the efforts that have been made to gather an audience.

The effort to attain our frequency channels at the Geneva Conference of the I.T.U. is in full gallop and I thought it might be helpful to make a report on the general position. Up to this point there has been very fine teamwork in the job, and if we are going to be successful it must be that way for the next few months, with everyone, and I mean everyone, throwing in everything they have to secure the greatest possible support for the Amateur cause. I hasten to make it clear at the outset of this talk this morning that now the problem has moved into the political sphere, I've become the spokesman only by virtue of being the sole licenced Amateur in Federal Parliament. I have had a lot of assistance, and will get a lot of assistance; and the cause has not wanted for good friends on both sides of the House, I'm happy to say, and in both Houses of Parliament.

When I first raised the question of Amateurs and the I.T.U. in Parliament a couple of weeks ago there was unexpected and powerful support from many quarters, perhaps most notably, if I'm to choose one or two people, from Mr. Jim Fraser (the member for the A.C.T.) and more recently from Ald. Jones (the member for Newcastle). Ald. Jones took the matter into the Labor Party Caucus, and while I was taking the matter into the Government Party room, the Labor Caucus moved unanimous support for the proposition that the P.M.G. Department should withdraw, review and re-draft the present Geneva Proposals.

By now I think everybody will be aware of the general routine and I repeat it only to emphasise one or two points which I'm happy to say might bring a little comfort to Amateurs. The I.T.U. Conference will begin at Geneva at the end of August. To the best of my knowledge, as far as we are concerned, its main job will be to carve up the frequency spectrum amongst the increasing number of Services who want space. The normal scheme is that in March the Proposals of the member countries went abroad to Geneva. Towards the end of this month we would expect them to be returned to Australia and other signatories in the form of a Budget of Proposals. The P.M.G. Department will then do its homework on this in preparation for the Conference later this year.

Now the points which I think may bring comfort are, firstly, that what has gone abroad are only Proposals. It may be that they will find no support at the Conference and there will be no re-arrangement and, I would hope, no cuts for the Amateurs; nevertheless, the present position is that the Australian delegation is going over to put forward a proposal for reductions in our 80, 40, 20 and 5 metre bands and presumably to support other countries who may produce similar proposals for reductions. Our part is therefore to change the attitude of the Government and to make sure that the delegation goes away with a new charter—that of preserving our bands and opposing any proposals for reductions put forward by others. I think we might all retire for a few words of quiet prayer on that one. The second piece of comfort I think arises from an assurance from the Post Office that despite the Proposals being sent away, their thoughts are still quite flexible. They may change their views perhaps under persuasion and of course if general agreement is to be reached at Geneva there will be need for some flexibility in the brief which the delegation takes to the

Conference. It will be John Moyle's difficult, but I hope not unrewarding task, to see that flexibility works for the Amateur, and of course our high hopes go with him.

The work on this exercise of preserving our frequency channels began last year when the P.M.G. agreed to accredit a W.I.A. observer to the Geneva delegation. Round about mid year, Max Hull, our Federal President of the W.I.A., went to Canberra and, with Senator George Hannan of Victoria, who I think had introduced the proposal originally, we had a little lunch and a good deal of talk with the Minister who was most co-operative. I ought to point out I think that the appointment of a delegate or an observer to go with the delegation was a departure from precedent of very great value to us. Anyhow I took the opportunity of assuring Max Hull, the Federal President, that at the time I would do what I could to supplement the Institute's own efforts, since it was quite clear that the incident must get into the political field. Since then I've been in constant touch with the Federal President Max Hull, and with John Moyle to keep him advised as to what was going on.

On one occasion I am bound to say that I was heartened by an appreciation of the Federal President and Federal Executive that nothing was to be gained in an issue of this kind by undue reference to the P.M.G. Department merely because they are the licencing authorities. It's also pleasant to know that we have got no fear that we might ruin good relations between the Institute and the P.M.G. Department by standing up in defence of what we believe to be in the national interest. I can give you the assurance that the Department and the Government understands very well our anxiety and it acknowledges our rights to do whatever we can do to cultivate public support for the quite reasonable case we have to submit; so that win or lose in the battle for frequency channels we will not lose our friends at court. The fact is that the Amateurs and the P.M.G. Department are having a difference of opinion as to the relative value in the national interest of Amateurs and commercial interests having a need for frequency channels.

We were somewhat in the dark in the early stages because we did not know what proposals for frequency re-arrangement had gone forward. I sought from the Minister the right to know what these were, and to publish them—particularly to the W.I.A. It took some little time but the story was eventually released and was given in this broadcast here and in Victoria a week or two ago.

Meantime the P.M.G. had been good enough to arrange for myself and Max Hull, together with Bill Mitchell to meet a specially called meeting of the F.A.S.C. This was done, I'm sure, in the hope of convincing us that the right and proper thing was being done well. We met the committee in an all-morning session and came away without being convinced, except for one thing; that was in the broad scheme of things Amateur Radio enjoyed only a low priority in Departmental thinking. Of course it's from this fact that our present unhappy position and prospects arise.

Following publication of the proposed frequency cuts, I made a statement in the Parliament a couple of weeks ago which met with very gratifying support. Other members came in to support me; a considerable number of Amateurs contacted their local members by letter, phone and personally to seek their support. I received an embarrassing number of telegrams myself, for which I hasten to thank you but to assure you that I don't really need the push. I hope the senders don't mind if I don't acknowledge them by mail because you will agree that the effort can be put to better advantage.

Now since all this, there has been some quite worthwhile developments. First of all the Government has noted the importance of the issue, and the widespread support. On Wednesday last the Acting Prime Minister, the Right Hon. John McEwen, agreed that the submission would now be considered by Federal Cabinet, which means that our representation has thus far been quite successful. Then again last week, the P.M.G. arranged for the two senior officers of his Department concerned with the matter, Mr. Skerrett (Deputy Director) and Mr. Pearson (of the Radio Branch) to visit Canberra and there they had a talk and a question period with members on both sides of the Parliament. The meetings were well attended and I think most helpful, and there for the moment the matter stands.

I doubt if any Amateur doesn't realise the difficulty facing the P.M.G. Department in

finding frequencies for the increasing commercial applications. It is clear that our priority is low; and if that is so we must make way for higher priority demands. But it is quite easy to regard the Amateur as using valuable spectrum space to inferior use having only low priority as against fixed and mobile services because these are the people who want our 80 and 5 metre space, whilst international broadcasting is wanting some more of our 40 metre band, and long distance communication services our 20 metre space.

We have therefore put forward in the strongest possible terms that Amateur Radio is an internationally recognised service with bands reserved for its use by international agreement. We put forward what I think might be a conservative plan that the availability of the Amateur body in 1939 put this country's defence signals six months ahead, and that sort of service is beyond doubt. If Australia is to become a technically efficient nation we can't afford to destroy the opportunities for self training and experience in electronics which our Amateur privileges provide. You can no doubt think of a dozen more reasons and I sincerely hope you will and that you will pass them on.

The P.M.G. Department claims that our bands are not fully occupied and that we will not be unduly inconvenienced by the proposed reductions. I am sure you all will have the answer to that. I pointed out that the misery of having to earn a living kept Amateurs off the air for very large parts of the day and I understand there is a rough sort of prohibition against vee wheels in Amateur bands. Also commercials have already occupied considerable stretches of our bands although we have to admit that the getting rid of these stations, belonging to people who are not members of the I.T.U. or who take their responsibilities too lightly, is not an easy one at all.

I think it is necessary to fix in the public mind that the exchange of signals at home and abroad is the very mortar in the Amateur structure; if bandwidth is going to be reduced, over crowding is going to be produced and there will be intolerable working conditions. This sort of situation will kill Amateur Radio without the necessity of taking away the whole of our present but restricted bands.

Now what has been gained and where do we go from here? The guards to this point include the evidence of widespread recognition of the value of Amateur Radio and expressions of goodwill far beyond anything I would have expected. Secondly, we have an assurance that there is some flexibility in the official attitude. Thirdly is the fact that instead of the Proposals being looked at only at the Departmental level, they are now to have Cabinet scrutiny. Finally, and this I think is the most important point, members of Parliament at the meeting with our post officers last week were given an assurance that we in Australia will retain the bands allocated at Geneva for our use without cuts by local option. In other words if Geneva says, the status quo in Australia remains.

These gains dictate the action from here on. I think your member of Parliament could be the most helpful and I suggest that you write to him, see him, invite him to your club—if you have one—and secure by every means possible his interest. It wouldn't be a bad idea to run over the bands for him. Let him see how tough things are already. Remember he is mostly a non-technical individual, but we have his interest and we will have his sympathy. Show him how essential Amateurs are for Australia's future in defence, emergency, and industry. Ask him to take what steps he can to convey these views to the Government to urge a reclassification of Amateur Radio and reconsideration of the present Geneva Proposals.

Finally chaps, because I know I am talking too much, I want to say that dealing in the problems of this kind we need the united strength of every Amateur and that strength is best expressed through the W.I.A., whose Federal officers are closely and constantly in touch with the picture. I know in a situation of this kind that it is quite possible that somebody will question that whether enough is being done in this or that direction, and I assure you a good deal of pressure is applied, a close watch maintained, and I believe the best interests of Amateur Radio in this country are being preserved. So in closing I hope we will all pull together and not relax. Remember that if we lose bands now we will never get them back. So go to it, and good luck to you all.

A Two-Stage Transistor Xmitter

A. G. SMITH,* VK3AN

Possibly some of the readers of this article have, like the writer, regarded Transistors with some apprehension, however the circuit described here is simple and seems to perform quite well with a minimum amount of trouble.

Basically the transmitter consists of a crystal oscillator operating on 7 Mc. plus an amplifier operating at the same frequency. The transistors used seem to be readily available and operate at this frequency quite successfully.

The original idea of the project was to use the unit as a handy-talkie transmitter and receiver. The receiver has been completed for some time now, but the handy-talkie has not eventuated due to some success using the transmitter on the normal 7 Mc. dipole.

The little rig has been copied on c.w. at RST 549 in Adelaide with Ted VK5JE providing the necessary ear strain in that State, and VK7MX and VK7MZ on the Apple Isle. These QSO's were not established with the transistor rig, but were part of a contact using the QRO ten-watt transmitter.

However, contact was established and maintained with Cliff VK3AJA at Stratford with sigs at RST 449. Cliff did hear and copy the little rig on phone during a later QSO with him.

The unit was constructed on perforated paxolin strips using both sides for mounting components; coil formers are $\frac{3}{8}$ " diameter polystyrene, and trimmers 3-55 pF. mica ceramic.

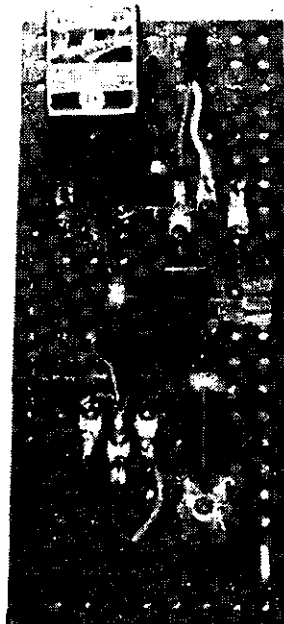
Modulation was accomplished by using a carbon microphone with 1.5 volts applied and coupling via a small speaker transformer in the negative 6v. line to the p.a. collector. The ratio of the transformer was not critical.

The coupling system to the antenna did present some difficulties and after trying many methods, the system as shown proved most successful.

A sensitive field strength meter was used to tune the LC circuits to resonance. The meter used was 0-50 μ A. and full scale plus readings were easily obtainable close to the resonant circuits. When the transmitter is coupled to the antenna, the meter was used to

peak the circuits by closely coupling to the feedline.

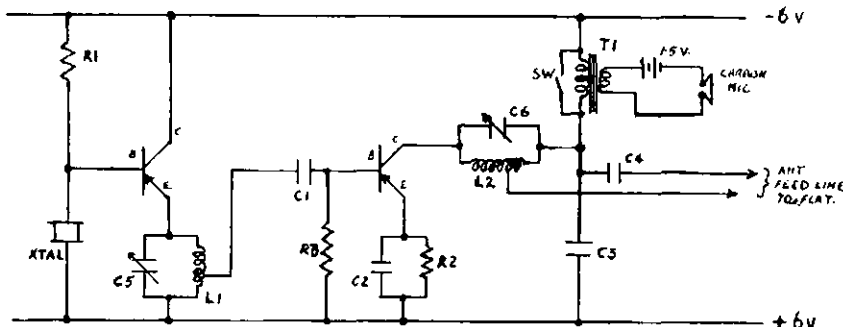
A receiver was constructed in a similar manner using an OC44 as regenerative detector and an OC71 as audio amplifier. WG's on c.w. were copied using the 7 Mc. dipole, but with an end loaded whip approx. 4 feet long signals were down and only locals with RS 59 signals could be heard.



The transmitter seems to suffer the same fate using the whip antenna, but as experiments had temporarily ceased along these lines, the possibilities are not known as yet.

In conclusion I would like to thank all the gents who strained their ears and receivers trying to sort the milliwatt signals out of the noise level, but believe me, it is interesting and astounding just how QRPP will make itself heard.

Please try it fellows, and lots of luck.



- C1—800 pF.
- C2—0.01 μ F.
- C3—0.001 μ F.
- C4—100 pF.
- C5, C6—3-55 pF. trimmer.
- R1—250K ohms, $\frac{1}{4}$ watt.
- R2—220 ohms, $\frac{1}{4}$ watt.
- R3—2K ohms, $\frac{1}{4}$ watt.
- Transistors—Two OC44.

- L1, L2—60 turns tapped at 15 turns, close wound with 34 s.w.g. enamel, formers $\frac{3}{8}$ inch polystyrene.
- Xtal—7 Mc. band.
- Sw.—For c.w.
- T1—Small Speaker Transformer.
- L1 and C5 to resonate at approx. 0.5 Mc. for large "XC" at xtal frequency.
- For c.w., key in either h.t. battery lead.

PREDICTION CHART, JUNE '59

Mo.	E. AUSTRALIA	W. EUROPE	S.R.	Mo.									
0	2	4	6	8	10	12	14	16	18	20	22	24	45
28	GMT												28
21	-----												21
14	-----												14
7	-----												7
E. AUSTRALIA — W. EUROPE L.R.													
0	2	4	6	8	10	12	14	16	18	20	22	24	45
28	-----												28
21	-----												21
14	-----												14
7	-----												7
E. AUSTRALIA — MEDITERRANEAN													
0	2	4	6	8	10	12	14	16	18	20	22	24	45
28	-----												28
21	-----												21
14	-----												14
7	-----												7
E. AUSTRALIA — N.W. U.S.A.													
0	2	4	6	8	10	12	14	16	18	20	22	24	45
28	-----												28
21	-----												21
14	-----												14
7	-----												7
E. AUSTRALIA — N.E. U.S.A. S.R.													
0	2	4	6	8	10	12	14	16	18	20	22	24	45
28	-----												28
21	-----												21
14	-----												14
7	-----												7
E. AUSTRALIA — N.E. U.S.A. L.R.													
0	2	4	6	8	10	12	14	16	18	20	22	24	45
28	-----												28
21	-----												21
14	-----												14
7	-----												7
E. AUSTRALIA — CENTRAL AMERICA													
0	2	4	6	8	10	12	14	16	18	20	22	24	45
28	-----												28
21	-----												21
14	-----												14
7	-----												7
E. AUSTRALIA — S. AFRICA													
0	2	4	6	8	10	12	14	16	18	20	22	24	45
28	-----												28
21	-----												21
14	-----												14
7	-----												7
E. AUSTRALIA — FAR EAST													
0	2	4	6	8	10	12	14	16	18	20	22	24	45
28	-----												28
21	-----												21
14	-----												14
7	-----												7
W. AUSTRALIA — W. EUROPE													
0	2	4	6	8	10	12	14	16	18	20	22	24	45
28	-----												28
21	-----												21
14	-----												14
7	-----												7
W. AUSTRALIA — N.W. U.S.A.													
0	2	4	6	8	10	12	14	16	18	20	22	24	45
28	-----												28
21	-----												21
14	-----												14
7	-----												7
W. AUSTRALIA — N.E. U.S.A.													
0	2	4	6	8	10	12	14	16	18	20	22	24	45
28	-----												28
21	-----												21
14	-----												14
7	-----												7
W. AUSTRALIA — S. AFRICA													
0	2	4	6	8	10	12	14	16	18	20	22	24	45
28	-----												28
21	-----												21
14	-----												14
7	-----												7
W. AUSTRALIA — FAR EAST													
0	2	4	6	8	10	12	14	16	18	20	22	24	45
28	-----												28
21	-----												21
14	-----												14
7	-----												7



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Remembrance Day Contest, 1959

The Federal Contest Committee of the Wireless Institute of Australia wishes all Australian Amateurs and Short Wave Listeners to participate in the Annual Contest which is held to perpetuate the memory of those Australian Amateurs who gave their lives for their Country during World War II. It is held on the week-end nearest to 15th August, the date on which hostilities ceased in the S.W.P.A.

A handsome perpetual trophy is awarded annually for competition between States inscribed with the names of those who made the supreme sacrifice, and so perpetuating their memory throughout Amateur Radio in Australia.

The name of the winning Division each year is also inscribed on the Trophy. In addition, the winning Division will receive a suitably inscribed framed photograph of the Trophy.

Objects

Amateurs in each Call Area (this includes those in Australian Mandated Territories and Australian Antarctica) will endeavour to contact Amateurs in all other Call Areas (VK1 and VK2 are considered to be one Call Area).

Date of Contest

15th-16th August, 1959.

Duration

From 1800 hours E.A.S.T. 15th August, 1959, to 1759 hours E.A.S.T. on 16th August, 1959. A period of 15 minutes silence will be observed by all stations on 15th August, immediately prior to the start of the Contest when an appropriate broadcast will be made from VK3WIA and relayed by the Divisional Stations.

RULES

1. There shall be four main sections to the Contest:

- Transmitting phone.
- Transmitting c.w.
- Transmitting open.
- Receiving open.

2. All Australian Amateurs may enter the Contest whether their stations are fixed, portable or mobile, but only members of the W.I.A. are eligible for awards. Portable/mobile operation is defined as transmitting and/or receiving equipment which is not connected to any private or public power mains or plant.

3. All Amateur frequency bands may be used, but no cross-band operation is permitted.

4. Amateurs may operate on both phone and c.w. during the Contest (e.g. phone to phone, c.w. to c.w., or phone to c.w. and vice versa), but may sub-

mit an entry for only one of the above sections listed in Rule 1.

An Open log will be one in which points are claimed for both phone and c.w. transmissions.

A Contestant transmitting on phone but receiving on c.w. may still enter for the phone section (and vice versa). Refer to Rule 11 concerning entry in Logs.

5. Only one contact per station per band is allowed and arranging schedules for contacts on other bands is not permitted.

6. Only one licensed Amateur is permitted to operate any one station under the owner's call sign. Should two or more operate any particular station, each will be considered a contestant and must submit a separate log under his own call sign.

Contestants operating stations other than their own shall be referred to, for the purpose of these rules, as "substitute operators." Their operating procedure will be as follows:

Phone contacts: Substitute operators will call "CQ Remembrance Day" followed by the call sign of the station they are operating, and the word "log" followed by their own call sign.

C.w. contacts: Substitute operators will call "CQ RD de" followed by the group call sign comprising the call sign of the station they are operating, an oblique stroke, and their own call sign.

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SOUTH AUST.: Gerard and Goodman Ltd., 196 Rundle St., Adelaide. QLD.: A. E. Harrold P/L., 123 Charlotte St., Brisbane; Chandler's P/L., Albert and Charlotte Sts., Brisbane; Trackson Bros. P/L., 157 Elizabeth St., Brisbane.
WESTERN AUST.: A. J. Wyle P/L., 1064 Hay St., Perth. TAS.: Homecrafts P/L., 220 Elizabeth St., Hobart. N.S.W. Factory Reps.: R. H. Cunningham P/L., 16 Angus St., Meadowbank. Available from all Leading Sydney Distributors.

Contestants receiving signals from a substitute operator will qualify for points by recording the call of the substitute operator only.

7. Entrants must operate within the terms of their licenses.

8. **Cyphers:** Before points may be claimed for a contact, serial numbers must be exchanged and acknowledged. The serial number of five or six figures will be made up of the RS (telephony) or RST (c.w.) reports plus three figures which may begin with any number between, or including 001 and 100 for the first contact and which will increase in value by one for each successive contact, e.g. if the number chosen for the first contact is 053, then for the second contact the number must be 054, for the third 055 and so on. If any contestant reaches 999, he will start again with 001.

9. **Entries** must be set out as shown in the example, using only one side of the paper. Entries must be postmarked not later than 6th September, 1959, and addressed to the **Federal Contest Committee, W.I.A., Box 371B G.P.O., Hobart, Tasmania.**

10. **Scoring** will be based on the table shown.

SCORING TABLE

		To								
		VK0	VK1-2	VK3	VK4	VK5	VK6	VK7	VK8	VK9
From	VK0	-	0	0	0	0	0	0	0	0
	VK1-2	6	-	1	2	3	5	4	6	6
	VK3	6	1	-	3	2	5	4	6	6
	VK4	6	1	2	-	3	6	5	4	6
	VK5	6	2	1	3	-	5	4	6	6
	VK6	6	1	2	4	3	-	5	6	6
	VK7	6	2	1	4	3	5	-	6	6
	VK8	6	1	2	3	4	5	6	-	6
	VK9	6	1	2	3	4	5	6	-	6

Note.—Read table from left to right for points for the various call areas.

In addition, a bonus of 25 points may be claimed for the first contact in each call area on 50 Mc. or above.

11. **Logs:** All logs shall be set out as in the example shown and in addition will carry a front sheet showing the following information:

Name Section
 Address Call Sign
 Claimed Score

Declaration: I hereby certify that I have operated in accordance with the rules and spirit of the Contest.

Signed
 Date

All contacts made during the Contest must be shown in the log submitted (see Rule 4).

EXAMPLE OF TRANSMITTING LOG

Date/Time E.A.S.T.	Band	Emission	Call Sign	RST/NR. Sent	RST/NR. Rcvd.	V.h.f. Bonus	Points Claim.	Blank

Note.—Standard W.I.A. Log Sheets can be used to follow the above form.

12. The right is reserved to disqualify any entrant who, during the Contest, has not observed regulations or who has consistently departed from the accepted code of operating ethics.

13. The ruling of the Federal Contest Committee of the W.I.A. will be final. No dispute will be entered into.

14. **Awards:** Certificates will be awarded to the winners of the phone, c.w., open, and receiving sections in each call area (Northern Territory will count as a separate call area). There will be no outright winner for Australia. Further Certificates may be awarded at the discretion of the Contest Committee.

The State to which the Perpetual Trophy will be awarded shall be determined in the following way:

To the average of the top six logs shall be added a bonus arrived at by adding to this average, the ratio of logs entered to State licencees, multiplied by the total points from all entries.

Example:

Average of the top six logs +
 $\left(\frac{\text{Logs Entered}}{\text{State Licencees}} \times \text{Total of Points from all Entrants} \right)$
 Acceptable logs shall show at least five valid contacts.

The trophy shall be forwarded to the winning State in its container and will be held by that State for a period of 12 months.

RECEIVING SECTION

1. The rules are the same as for transmitting and is open to all Short Wave Listeners in Australia. No transmitting Station may enter this section.

2. Contest times and logging of stations on each band are as for transmitting.

3. To count for points, logs will take the same form as for transmitting logs. Logs must show the call sign of the station heard (instead of worked), the serial number sent by it and the call sign of the station being called. The scoring table to be used is the same as that used for transmitting and points must be claimed on the basis of the State in which the receiving station is located. A sample log is given to clarify the position. It is not sufficient to log a station calling CQ.

4. A station heard may be logged only once for each band.

5. **Awards:** Certificates will be awarded to the highest scorer in each call area. Further certificates may be awarded at the discretion of the Federal Contest Committee.

EXAMPLE OF RECEIVING LOG—VICTORIAN S.W.L.

Date/Time E.A.S.T.	Band	Call Sign Heard	RST/NR. Sent	Station Called	V.h.f. Bonus	Points Claim.	Blank
Aug. '59							
15 1802	7 Mc.	VK5XU	59001	VK3XU	—	2	
15 1805	..	VK6RU	56004	VK9DB	—	5	
16 1115	50 ..	VK4RZ	47135	VK5QR	25	3	

Note.—Standard W.I.A. Log Sheets can be used to follow the above form.

BOOK REVIEW

A.R.R.L. SINGLE SIDEBAND HANDBOOK

The second edition of A.R.R.L. Single Sideband Handbook follows the pattern of its predecessor. It consists of articles which have appeared previously in "QST" and which cover the whole gamut of Amateur s.s.b.—its history, its basic principles, and practical construction articles on all types of equipment. Its treatment of the basic principles is very full and more than adequate for Amateur requirement. This portion of the book is recommended to all who are interested in Amateur Radio telephony in any form.

Among the constructional articles figure "Cheap and Easy Sideband" by W2EWL—almost a standard for home-built phasing rigs.

"A Sideband Package" by W6TEU—a full exposition of a filter rig; and the Monimatch Mark II. For this last article alone the book is well worth having. Accessories for use in Amateur s.s.b. are well covered.

The book is printed in the well known "QST" format which makes it durable, easy to read and nice to handle—a not-unimportant point with a book.

This handbook is a must in s.s.b. Amateurs' libraries and is to be considered as a standard in the same light as its parent A.R.R.L. Radio Amateur's Handbook.

Publisher, American Radio Relay League. Australian price 24/-, plus 1/- postage. Our copy from Technical Book and Magazine Co., 295 Swanston St., Melbourne, and McGill's Authorised Newsagency, 183 Elizabeth St., Melbourne.

QUEENSLAND DIVISION, W.I.A.

THE 1959 CENTENARY YEAR

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VK4WI will also operate continuously from the Convention as part of the Centenary Year Celebrations. Special QSL cards will be awarded.

For further details, listen to VK4WI Sunday morning broadcasts.

VHF

Frank P. O'Dwyer, VK3OF
190 Thomas Street,
Hampton, Vic.

Continued Es with fewer DX openings marked the last month. The peak was reached on May 2 at 1145 when Ian 3ALZ QSOed XE1FU at S9. About six XE sigs. were heard by the gang during the brief opening. Further north, 2ADE logged XE the same day. Chas. 2ADE hooked VET1AQQ on Apr. 29. VK7XL is active and caught on Es opening. An excellent VK3/JA opening 2145-2350 on Apr. 29, all sigs. S9 preceded by a VK3/4 opening at 2030. In VK2 a couple of the regulars were missing and openings listed are JA1, 3, 4 on Apr. 1, VK7XK and a lot of VK5 on Apr. 9 at 2200, followed by JA2 and 5 on the 19th.—3OF.

NEW SOUTH WALES

Greetings, chaps, from your new scribe, Bob 2ASZ. At the April meeting 35 members were present to have a go at Winchy 20A about noise figures and antennae at v.h.f.s. Election of officers for 1959 resulted in John 2ZAV taking the chair, Phil 2ZBX vice-chairman, Kevin 2ZFC secretary, and committee members Bob 2ASZ, Jim 2ZCW, and Keith 2ZJK. The chairman's Trophy for maximum points scored in all contests over 1958 goes to Dick 2ZCF and will be presented at the May meeting.

Autumn Field Day on 12/4/59 produced a great amount of activity on 2 mx. At the April Night Fox Hunt, 22/4/59, Keith 2ZJK found a spot near the oil storage tanks on Parramatta River, said tanks causing many false bearings. He was found in 37 mins. by Jim 2ZCW. Several V.h.f. Group members were at Urunga including 2PM who cleaned up the 40 mx scramble. Congrats, Winchy 20A, on winning the 1958-59 Adams Trophy for your article to "A.R." on Overtone Oscillators.

The Midwinter Contest will be held on 25th and 26th July, 1959. Form not decided as yet.—2ASZ.

VICTORIA

An incomplete tally of openings on 50 Mc. for the month show—Apr. 1st, JA; 2nd, ZL; 7th and 8th, JA; 9th, VK2 and 4; 10th, VK5 heard; 11th, JA; 12th, the VK4s and JA; 14th, JA; 23th, 9XK heard; 29th, JA; May 2nd, XE worked.—3OF.

QUEENSLAND

Southern.—JA's have been heard by most Brisbane gang this month. There have been some good breakthroughs. Max 4HD has had a number of contacts with KH6's, W's, also KA-7AX. Gordon 4ZBI and other Brisbane boys have had their share of JA's as well as VK3 and VK5 during the Sporadic E opening on April 12. John 4FU worked Col 5RO. JA sigs also in on F2, quite a good day for the Brisbane gang. 4ZBI, Apr. 14 at 2145, worked Ron 5MK. Ron was hearing "Yankee Voices" on the band. The end of the month brought the JA's in again.—4ZBI.

Northern.—On Apr. 17 the YL stations in Japan had a Field Day and were most intent on working VK stations. 4ZBE on May 5 had his No. 1,000 contact with JA since the band opened on Feb. 8. His QSL has arrived from George VS6CJ. DX is still much the same. New stations in Japan are KA2MJ and KA-7AX. Also on the band is W6KUY/MM, somewhere in the China Sea, c.w. only. VU2RM is still active on 6. On May 2 band opened up and VK2's and 5MK were worked. 9XK worked 6BE. Quite a good bit of back scatter going on, have heard and called 9XK, 4ZBJ, 3CI and VK2M? Main trouble in DU appears to be the lack of use of proper antenna. ZSISW is on the air every hour on the hour looking for VKs. Activity in KG6 and KR6 areas will increase shortly.—4ZBE.

SOUTH AUSTRALIA

The VK2's were in on Apr. 9. On 10th, JA's were heard shortly after noon. The 20th, a good opening to JA1, 2, 3 and 7. The 29th again to VK2 and 4, then on May 4 JA4 again. Doug 5KX is new on the band. Mobiles are active on 6 mx with Barry 5ZBZ at the Hummocks (approx. 80 miles out) worked by all. The last Fox Hunt, Hughie 5AV won both hunts. The Apr. 28 V.h.f. meeting discussed W.I.C.E.N., main points 50 Mc. mobiles in the field and the installation of fixed tx and rx at fire fighting headquarters. Anyone with mobile gear on 50 or 288 Mc. is invited to get in touch with John 5KX. 288 Mc. has been very active.—5ZAW.

WESTERN AUSTRALIA

During past two months JA openings have occurred almost daily into all parts of Japan on 50 Mc.; very strong sigs. in many cases. 2/5/59 saw an opening into VK9 when 6BO and 6BE worked 9XK. Same afternoon 6BG heard what he thinks was a VK2. Other items of interest include the re-appearance of f.m. nets on 49.6 and 49.9, the latter Malay and English and the former American.

DU1GF has reported hearing VK6BE at 2100 on 16/4/59. We believe that IGF is calling each night with beam south. Also attempting to work us is VU2RM, who has been successful in working VS6 and KR6.

The beacon VK6VF has justified itself already in securing for us the VK9 contact. Believe Russ heard the beacon the previous week-end and called at that time (8 a.m.) until he made the grade. A further report was received from

a W6 (that raised a hearty cheer in VK6!!). Unfortunately the info. was incomplete and it turned out that the W6 was MM near Okinawa!! Again this was early in the morning.—6BE.

TASMANIA

2 metres on Apr. 28 was exceptional. Peter 7PF, using t.v. signals as a guide, listened around the band at 2000 but n.g. At 2125 another check brought up 5BC just signing off with a VK3. A call, an answer, signals 5 and 6 each way. Col 7LZ was phoned to get on and they exchanged 559 reports. The distance, approx. 630 miles 7LZ/5BC, 600 miles 7PF/5BC. 7PF and 7LZ then worked the VK3s, both city and country. The Melbourne stations were very poor. 3ZDE was worked, only that day he received his call sign. What a start. Conditions were still good at 2345. The Inversion appeared to break up the next day, the weather map for the day was like one out of the book.



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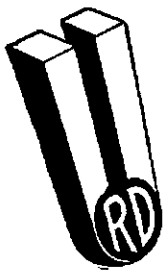
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CORRESPONDENCE

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

AUSTRALIAN DXCC AWARD

Editor "A.R." Dear Sir,

I have read with interest the various correspondence appearing in your columns relative to the merits and otherwise of the above Award. May I take up some of your valuable space to place before your readers some pertinent facts.

1. The list of countries published in "QST" for January 1959 reads: "Partial A.R.R.L. Countries List—for your convenience in the 1959 DX Contest".

- (a) From the above we may deduce that there are many more countries to be added.
- (b) Since there is no reference to the fact, that for A.R.R.L. DXCC purposes, this is the official list, we may conclude that it is only a guide and the official list, if in existence, is a somewhat flexible affair depending on the activities of the pressure groups within the A.R.R.L.

2. Without going into too much detail, the following glaring idiosyncrasies appear in the list.

- (a) KB6, Baker, Howland and American Phoenix Islands. Firstly, Baker Island is British, Howland Island is American and there is no American Phoenix unless you count the possibility of this being Enderby Island, Canton Island, one of the group, is in British Phoenix and normally carries a VR1 prefix, however there are stations on this island signing with a KB6 prefix because the island is a condominium. According to the A.R.R.L. this island counts as two countries. This is utter nonsense since the same rule does not apply to the FUG/YJ combination.
- (b) Gold Coast (ZD4) changed its name to Ghana with a 9G1 prefix, so if you worked Gold Coast, and, after the change you worked the same station again, you count two countries by A.R.R.L. standards. Again sheer nonsense.
- (c) Malaya, Sarawak, Singapore, Ceylon and India have all undergone political changes similar to that of Ghana, but they have not been re-classified as has Ghana. WHY?
- (d) Then we have the classic dismembering of the Windward and Leeward Islands into a multitude of separate countries after they had become Federated.

These are but a few of the stupidities of the A.R.R.L. Partial List for the 1959 DX Contest.

3. The W.I.A. Official List of Countries for DXCC, as published in January "A.R." is by no means perfect for the following reasons:

- (a) It perpetuates some of the stupidities of the A.R.R.L. list, although some of the most glaring ones have been omitted.
- (b) It could be amended by the addition of several sensible ones in the A.R.R.L. list, such as Chatham Is., Lord Howe Is., Juan Fernandez Is. and the like, and, it could be further improved by the addition of East Germany and by breaking down New Guinea into New Guinea, Bizmarck Archipelago, and Mandated Solomon Islands.
- (c) The list, you will note, includes Java, Sumatra, Celebes and Moluccas and Cambodia, all quite sizeable countries which do not appear in the A.R.R.L. list.

4. The W.I.A. DXCC Award was instituted for the benefit of members and to provide a grading for DX aspirants. The rules of the W.I.A. Award are not the same as those of the A.R.R.L. Award, as will be seen by anyone who takes the trouble to read both of them. Since it is an Australian Award, there is no valid reason why it should be tied to the A.R.R.L. Award, and to the peculiar thinking of the American State Department. It should be noted that the absence of those countries mentioned in para. 3 (c), from the A.R.R.L. list, is due to that fuzzy thinking.

5. I have established that you can shoot the A.R.R.L. list full of holes anytime you think of it—you can also do the same to the W.I.A. list, but not to the same extent however. The obvious thing to do is to revise the list and put it on a sensible basis, and with that in view, the W.I.A. tabled a resolution with the I.A.R.U. to get up a new list, acceptable to all I.A.R.U. members, to be made up by a committee comprising the A.R.R.L., R.S.G.B., and W.I.A.

The resolution was passed with the A.R.R.L. voting against and the R.S.G.B. abstaining, and the reason given by the A.R.R.L. was that it already had a list and was happy with it.

I do not anticipate that anything will come of this resolution since two of the committee named are against the idea and it would be embarrassing for the A.R.R.L. to be faced with a basinful of amendments.

6. The establishment of pressure groups and attempts by individuals to discredit the Award will not achieve anything. The sensible thing to do is to divorce your ideas from the American Award and work for an amended list based on a sensible approach to the subject. At the present time the Awards Manager's time is given over to managing the DXCC Award for not more than 25 active members, an extremely small minority of the total membership of the Institute, and I often wonder, whether it is all worth while.

7. If, by now, there is anyone still convinced that there is every reason why the W.I.A. should slavishly follow the A.R.R.L. countries list, then by all means let him give the Australian Award away and secure recognition of his DX prowess from the A.R.R.L. For my part, I should be delighted as the time I will save will be used more productively.

—Gordon Weynton, VK3XU,
Awards Manager.

DX MORAL

Editor "A.R." Dear Sir,

Recent controversies on DXCC in these columns reminds me to tell again the story I heard in the mess at Abadan during a recent business trip to the Middle East oil fields. With me at the bar were two W6's, both engaged on some electronic assignment in the area. One, an ardent DX enthusiast, was bemoaning the fact that the Shah of Persia would not allow Amateur Radio in his country. Then came the usual boasting of countries worked. The DX'er claimed he had 267 and would like to work Persia for his 268th. The other W6, a very clued-up chap with three degrees replied, "And on how many of these 267 countries do people live?" Naturally our DX friend was at a loss to answer and I quickly changed the subject to the great Australian ball game and told these chaps they were missing a lot in not having Australian Rules Football on the U.S.A. sporting programmes!

The moral of this story is simple; and I repeat it to all these fellows who foolishly make DX their master. Try and keep your balance and remember there's nothing smart or outstanding in working new countries. It's better to keep your own house in order. A recent private survey of the DXCC in U.S.A. showed it had brought divorce and broken homes to at least 5%.

Part of our code is "The Amateur is Balanced". Worth remembering when you turn in at 2.0 a.m. and wonder why the family gets browned off next day.

—Roth Jones, VK3BG.

WHY IS JUSTIFICATION NECESSARY?

Editor "A.R." Dear Sir,

Comments have been made in recent issues of "A.R." in relation to "using the bands or losing them". Even the Federal President has aired this idea in his article in April "A.R."

All the entreaties that have been made in this vein at this late stage before the I.T.U., seem to me to be a case of "shutting the stable door after the horse has bolted". The F.A.S.C. have already made up their minds on such figures as density per kilocycle and density per channel, if Mr. Hull's remarks are correct. It's rather late for entreaties now, I feel.

However, if one cares to refer to the editorials in "A.R." for July and August 1958, a contrary view appears to be taken. I quote: "The worth of the Amateur to any country can't be weighed by how many times he operates in a week . . . use them or lose them . . . should be a minor worry". Again in August "A.R.", one finds an extract from an eminent U.K. journal in the editorial. Quote: "The present level of Amateur activity with the high state of development of the art of Amateur Radio, has become its own justification for a proper share of the ether. This is not a matter of 'privilege' or even a 'right' (in the moral sense), but simply a requirement by virtue of sheer weight of numbers!"

Although we might not be able to justify our existence through sheer weight of numbers, Amateurs collectively, throughout the world can. But the first part of this extract, contains, I feel, the essence of an idea which could be used as weight in the drive for retention or extension of the frequencies.

Why should we have to justify ourselves in the eyes of the F.A.S.C.? What sort of justification do they want anyway?

Isn't Amateur Radio an internationally recognised service, and on that basis, demand, through "sheer weight of numbers", slices of the spectrum suitable for our needs? It is realised of course that this last, perhaps naive,

ROSS HULL V.H.F. CONTEST RESULTS

1958-59

Trophy Winner and Highest Score:

VK3ALZ—I. F. Berwick (open) 863 pts.

Longest Distance:

VK6ZBZ to ZL1BJ—3,400 miles.

Awards, Phone:

VK2ABR—A. W. Rushby	530 pts.
VK3ZAT—D. D. Tanner	586 "
VK4NG—R. H. Greenwood	840 "
VK5ZAX—R. W. Wehr	739 "
VK6WG—W. W. Green	510 "
VK7ZAI—D. A. H. Thorne	289 "
ZL2ADO—K. J. Mercer	261 "

Open:

VK3ALZ—I. F. Berwick	863 pts.
VK5QR—R. V. Galle	739 "
VK6BE—R. Elms	465 "
VK7LZ—C. P. Wright	296 "
VK9XK—S. R. Coleston	387 "
ZL1BJ—W. R. Hamer	438 "
ZL2DS—K. R. Kirkcaldie	434 "

Receiving:

C. Thorpe	741 pts.
J. Hilliard	468 "

Scores, Phone:

VK4NG	840	VK2HE	388
4ZAX	794	5ZBL	366
4ZAZ	751	5ZGA	304
5ZAX	739	7ZAI	289
3ZAT	586	4ZBI	275
2ABR	530	6ZBP	274
6WG	510	ZL2ADO	261
3ZFM	475	VK5ZCJ	232
2ZBP	456	3OF	182
5ZBC	456	2ZCF	ch. log
3ZCG	423	2MZ	ch. log
6ZBZ	399		

Open:

VK3ALZ	863	ZL2DS	434
5QR	739	VK9XK	387
6BE	465	7LZ	296
ZL1BJ	438	7PF	97

Receiving:

C. Thorpe (VK4)	741 pts.
J. Hilliard (VK3)	468 "
D. King (VK4)	458 "

statement is physically outvoted by the combined commercial interests. However, Amateur Radio exists—and because of this, irrespective of the internal organisation, the number operating at any given time should be sufficient justification. I would like to hear or see the W.I.A. proposals sometime, and see whether anything is included along these lines.

The fact that there are only a few active on the bands at any one time is of no consequence. Could anyone supply figures, percentage-wise, showing the number of operators at any one time on the bands in the U.K. and U.S.A. in comparison with those in Australia? It would show whether we are populating our bands on a comparative basis.

When the W6's are coming through on 20 there doesn't seem to be an undue number. How many W6's are there?

No, I feel that it's what we are, not what we do that matters in this fight.

It appears to be freely acknowledged that our technical contributions are of minor importance, the fact that we can work the other side of the world is no longer an outstanding achievement, our "inane chatter" as reported by one correspondent all appear to be negative reasons for the existence of Amateur Radio itself, let alone reasons for the extension or retention of our bands.

You can be sure that the commercial frequency users have thought out all the angles on this, notwithstanding the density per kilocycle or density per channel we can supply.

—Peter Williams, VK3IZ.

AMATEUR CALL SIGNS

FOR MONTH OF MARCH 1959

NEW CALL SIGNS

- VK—**
New South Wales
 2ET—T. G. Elliott, 41 Brisbane St., South Matraville.
 2AHO—A. H. S. Bridgman, 53 Hunter St., Mona Vale.
 2AKK—K. H. Howard, 5 Helen St., Merewether.
 2AMC—W. McDonnell, 26b Wolger Rd., Ryde.
 2ZGR—G. H. Ronayne, 7/14 Joubert St., Hunters Hill.
 2ZLS—L. R. Stephens, 50 Meurant Ave., Wagga Wagga.
 2ZTM—T. I. Mills, 19 Bullecourt Ave., Mosman.
- Victoria**
 3AKN—D. G. Baulch, "Tooronga", Broadwater, via Port Fairy.
 8ZDJ—D. J. Ashcroft, 9 Doulton Rd., Blackburn.
 3ZEM—N. S. Maddern, Station: 15 Hassett St., Shepparton; Postal: Box 248, Shepparton.
 3ZGN—G. M. Nicholls, 14 Somerset Rd., Glen Iris.
 3ZGV—F. D. Voight, 13 Nevis St., Hartwell.
- Queensland**
 4BW—G. Whitehead, 101 Zillman Rd., Hendra.
 4ZCM—F. B. Moultrie, 19 Sixth Ave., Kedron.
 4ZCS—P. A. Sweetser, 98 Taringa Pde., Indooroopilly.
- South Australia**
 5JD—J. M. Coulter, 69 Conmurra Ave., Ackland Gardens.
 5SJ—J. A. Hampel, Station: 160 Tynte St., Nth. Adelaide; Postal: NWS9, 116 North Ter., Adelaide.
 5ZDP—P. I. Woodlands, 5 Clinton Ave., Myrtle Bank.
- Western Australia**
 6OY—T. H. Mitchell, 18 Furnival St., Narrogin.
- Tasmania**
 7FH—F. H. Young, 11a Amherst St., Ulverstone.

Territory of Papua and New Guinea
 9DH—D. G. Hallam, O.T.C. Cottage No. 2, Sulphur Creek Rd., Rabaul.
 9JD—J. F. Dalstead, D.C.A. Mess, Huon Rd., Lae.

CHANGES OF ADDRESS

- VK—**
New South Wales
 2BG—B. L. Glassop, 343 Kissing Point Rd., Ermington.
 2BW—A. S. Moye, 17/133 Macleay St., Potts Point.
 2MF—C. M. King, 185 Markham St., Armidale.
 2NV—J. V. Smith, 24 Tintern Rd., Ashfield.
 2PS—P. G. Stephen, 8 Avenue, Lake Park, Narrabeen.
 2QY—A. M. L. Moss, 15 William St., Rosebery.
 2UK—G. E. Dennys, 223 William St., Kings Cross.
 2VB—L. W. Burgess, 100 Walker St., Cabramatta.
 2AAB—B. E. White, 28 Redgrove Rd., Normanhurst.
 2AGD—G. L. Lee, 14 Waratah St., Kahibah.
 2AGW—A. E. Hay, 1625 Pittwater Rd., Mona Vale.
 2ALV—L. Jordan, 27 Figtree Cres., Figtree.
 2AMP—G. A. W. Pryor, 36 Tango Ave., Dee Why.
 2AOM—A. N. Murdoch, Lot 3, Galston Rd., Hornsby Heights.
 2AVQ—R. R. McKew, 20 Sibbick St., Five Dock.
 2ZBW—P. W. White, 48 North St., Auburn.
 2ZRW—R. Weaver, St. Andrews College, Newtown.
- Victoria**
 3CZ—A. I. Berry, Station: "Belsaye Park," Hazelwood Place, Warburton; Postal: P.O. Box 27, Warburton.
 3IK—I. K. Sewell, 72 View Hill Rd., N. Balwyn.
 3KT—P. T. Filmer, 8/31 Docker St., Elwood.
 3MD—R. R. McDonald, 247 Sussex St., Merlynston.
 3PJ—V. H. Leonard, Station: "Grenoble," Main Rd., St. Andrews; Postal: C/o. P.O., Smith Gully Road.
 3PL—J. F. Isaac, 378 Balcombe Rd., Beaumaris.
 3PX—H. M. Finnigen, 13-15 Beley St., St. Arnaud.
 3QX—N. Campbell, 45 (Lot 1) Kennedy St., Oak Park.
 3AKV—K. C. Burnett, Lot 96, Adelaide Grove, Mt. Waverley.

- 3ASH—J. L. C. Hart, 83 Union Rd., Surrey Hills.
 3ZDN—R. M. Macrae, Lot 4, Cherylnne Court, Kilsyth.
- Queensland**
 4JU—F. W. Nolan, 178 Given Ter., Paddington, Brisbane.
 4PW—D. W. Presland, 32 Alfred St., Mackay.
 4WT—N. J. G. Watling, 23 Hynch St., Wulguru, Townsville.
 4ZBZ—R. M. Feenaghty, Regent St., Wynnum North.
- South Australia**
 5EE—E. T. Walker, 5 Bovey St., Hampstead Gardens.
 5FY—R. A. Catmur, 142 Woodford Rd., Elizabeth North.
- Western Australia**
 6JN—J. W. G. Nind, Lot 11, Talbot Rd., Swan View.
 6RK—R. S. Choate, 37 Peplur Ave., Salters Point.

CANCELLED CALL SIGNS

- VK—**
New South Wales
 2GM—G. McDowell.
 2TS—T. G. McEwan.
 2UH—N. G. Hansen.
 2UO—J. F. Dalstead (now VK9JD).
- Victoria**
 3DP—J. M. Farrer.
 3IG—G. W. Ireland.
 3AHM—H. A. McLeod.
 3ZCX—D. G. Voight.
- Queensland**
 4CW—K. C. Woskett.
 4ZAW—G. Whitehead (now VK4BW).
- South Australia**
 5BY—D. R. Whitburn.
 5GR—H. E. A. Gehrke.

PERMITS GRANTED FOR TELEVISION EXPERIMENTS

- 2TW/T—C. G. Smith, 20 Colln St., Cammeray.
 5SJ/T—J. A. Hampel, Station: 760 Tynte St., Nth. Adelaide; Postal: NWS9, 116 North Ter., Adelaide.

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- ★ Non-hygroscopic adhesives used throughout in the manufacture of the crystal element.



- ★ Slip-in Sapphire styli, interchangeable with standard makes.
- ★ Replacement styli available, also fit other standard cartridges.
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DX

John C. Pinnell, VK2ZR
15 Summit Avenue,
Earlwood, N.S.W.

Band conditions have been fairly good and reports indicate good DX from 7 Mc. to 28 Mc. if you pick the right times. Often stations could be worked from the same country on more than one band at a given time. Colder and shorter mornings are taking its toll on the early birds with less local QRM around the 6 a.m. period.

Don't let the April Editorial ruffle you chaps, it perhaps has some merit if only to give us a jolt into thinking of other points of view and phases of Amateur Radio. This is not peculiar to the DX man alone anymore than it is to other groups within our hobby. Balance is necessary. To achieve perfection in any one phase needs much effort and concentration in the more or less narrow field over perhaps long periods of time. Most DX men have been to the fore in other Amateur Radio activities at one time or another. Several past and present DX'ers are among the hardest workers in the VK2 Division of the W.I.A., and I think in other States as well. Again, don't get ruffled—33 years is a long time and Amateur Radio still lives on. Our effort at Geneva is the most important thing at the moment.

NEWS AND NOTES

Saudi Arabia. W5HCL of Texas will be going to HZ-land in the near future.

At the present time the 10 mx band is open about 24 hours a day. Mornings, U.S.A. and South America; afternoons South Africa from 1 p.m. to about 8 p.m.; evenings, 6 p.m. onwards Europeans. (5RK)

A Russian Radio Magazine recently chastised Russian Amateurs for not QSLing, naming as an example one prominent UA3 station who had received about 800 QSLs in 1958 but had sent out none.

The T19 DXpedition has been and gone, and although never heard strongly in VK2, was fairly easy to work. As he was using a transceiver it was necessary for him to operate within one or two kc/s. of his own frequency. (2QL)

VU2VS, Spike, is anxious to make contacts with his many friends and others in VK-land. He was VK2VS from 1946 to 1950 and likes to keep in touch with Ham doings in Australia. He said Amateur operating in Calcutta is not a bed of roses during most of the year due to the terrific bedlam from old DC fans, refrigerators, air-conditioners, etc., around the block of flats in which he lives. The greatest difficulty facing VU Hams is the extreme shortage of components and gear for assembling an Amateur Station. Due to import restrictions, virtually nothing is going into India and local industry does not cater for Ham requirements. Spike is using 20 watts.

Europe. There should be no trouble to get European contacts on 14 Mc. before breakfast as there are lots of signals coming through between 2000z and 2200z. A few can be worked between 0600z and 0900z, but at this time the W QRM is troublesome. Europe can also be worked on 21 Mc. from 0500z to 0700z, and again around 1200z to 1400z. Here at 2ZR, and in these two bands, 87 Europeans have been worked in the past three weeks during the times mentioned above.

21 Mc. has been open to North America for long periods of each day, particularly from 0400z to 1100z. Novices in W-land are coming through very strongly and battling to get DX contacts. How about moving into their "rock-bound" area occasionally and giving them a go. I know they would appreciate it. After 30 years I can still remember the call sign and the thrill of my first W contact.

Dennis VP8EP is putting a walloping c.w. signal into Sydney from Hailey Bay around 7 a.m. His 14 Mc. 589 c.w. signal the other morning had very few VK takers.

VR1B is very active on all bands from 3.5 Mc. to 28 Mc. VK2QL has landed him on all five bands. QSLs may be sent via VK2EG or the VK Bureau.

Reports indicate some very good DX on 7 Mc., but finding holes between Commercials

* Call signs and prefixes worked. z zero time—GMT.

is causing a bit of a problem. South Africa is being heard consistently.

According to advice from EA3GF, the Amateur Radio League of Spain (U.R.E.) is willing to finance a trip to the very rare country of Ifni except for the equipment to be used. DX'ers who may be in a position to help the project are encouraged to contact EA3GF or EA3IS via airmail.

VRST from Fanning Island is active again on 14 Mc. c.w. He operates for a short time about 0400z and again about 1300z.

KH6OR is considering plans for a possible trip to ZM7, Tokelau Islands, and a few other rare spots. (KM6BL)

JT1AB is fairly active on about 14080 Kc. around 1300z. QSL him to Box 369, Ulan Bator, Mongolia.

UA1CK is planning a trip to Franz Josef Land during July and August. He will operate on all bands.

EA0AF from Spanish Guinea is active at week-ends on 1500z c.w.

After several conferences with the local authorities it seems likely that U.S. nationals will be given permission to operate from Tunisia.

Monaco. SA2AF plans to work 21440 Kc. s.s.b. from 2200 to 2300z several days each week.

KW8AL and KW8AK are both active on 14 Mc. c.w. from Laos.

Kuwait: Look for 9K2AM on 14325 Kc. s.s.b. from 1800 to 2100z Saturdays and Sundays.

VE3MR will be operating s.s.b. only from PZ1AQ, VP3MR and FY7 very soon.

ADDRESSES

VR8TC, on Pitcairn Island, should be contacted through John Maddox, WATAJ, R.F.D., 3 Johnson City, Tennessee. SAOM says, "Previously I had sent two cards addressed to Pitcairn Island, without result, but on sending to WATAJ, I received a card back (airmail) without any delay."

HK0A1—Via W4KVX. (L2022)
HC1XJ—Via K8CZJ. (L2022)
V84JT—Jim Tierney, C/o S.S.O.L., Miri Sarawak. (L2022)

From 3APV the following:
CE8TE—Julian Moreno Marina, Casilla 2038, Santiago, Chile.
TI2RM—"Charlie"; Box 3367, San Jose, Costa Rica.

XE2KO—P.O. Box 474, Monterey, Mexico.
ON4GM—"Gunter"; P.O. Box 634, Brussels, Belgium.

OA4GK—"Ivan"; Casilla 193, Lima, Peru.
OA4DA—"Fernando"; P.O. Box 4373, Lima, Peru.

H8CJY—"Chuck"; Central Romans, Dominican Republic.
4X4WF—"Erik"; P.O. Box 200, Tiberias, Israel.

QSL'S RECEIVED

2AMB: CE1BD, CESAG, CE8AA, HB9MU, VE8PB, VS9MA, XE0JD, YV5AEW. 2QL: GC-2FMV, UA0SPK, UA0SL, UA8DL, ZD2GUP. 3AOM: HB9J, HP1CC, VR6TC. 3APV: CE3TR, GD3FBS, OA4GK, VQ6LQ. L3065: TI2HF, BERS19X, CE8AA, CT2AL, DU8TY, IT1PDN, KH6BTX, ODSAM, OR4VN, UC3AR, VP2DW, VQ2CW, VR2DK, VU2CQ, YS1MS, VK5 (Alan) HV1CN, MP4BCO, SV0VP, UA0OI, YU2DE. 2ABH: JT1AA, JZ0PB, OQ5AO, UR2KAE, ZB2I, ZE2JA.

ACTIVITIES

3.5 Mc. C.w.—2QL: VR1B*.
1 Mc. C.w.—2QL: VR1B*, ZS6CY*, VQ2VZ, ZS6ASK, and many other ZS, UC2KAC, UH-8BH, UO5KAA, VQ2PC, ZE6JJ, ZENJ. L2022: JAS, KX6BXE, KL7SFN, KH6CG, UAOKSA.

7 Mc. Phone.—SM3C21: VK2ADV, VK2AHL, VK2AIA, VK2AOR, VK2ANB, VK2ASE, VK-2XY, VK2ZL L2022: W/Ks. BERS19E; DL6XT, DU7SV, G8GSE, G3KZK, HA5AM, KP4CC, LA8CA, LZ2KBI, OH7NF, OK3KOT, ON4JE, SM5SCE, SP6QH, UA4AKH, UA8KCC, UB5KCC, UC2BG, UO5KAA, UP2KNE, UR2KAE, VQ-4FK, YU6BLM, YQ3FG, ZE7JV, ZS5FH, ZS6CY, ZS6ASX, JA3ACT/MM, K6QEY/MM, LA7RF/MM, UA0LS/MM.

14 Mc. C.w.—2ABH: FA8XS/SH*, FB8CJ*, JZ0DA*, VQ2JM*, EL4A, FP8BZ. 2AMB: FA-8RJ*, FY7F*, VU2BT*, YU3BE*, KP4YP, JT1AB, VR1B, ZK1AT, VP8EN, SU1MS, XW-8AL, 4FRD. 2QL: IS1FC, TI2WD*, T19CW*, VP2GDW*, VR1B*, OY7ML. 2ZR: DJ1VS*, EA3CX*, G3DBZ*, GM3L5*, F3IF*, OE1WL*, OH8NE*, OK1KDC*, OR4RW*, LA5S*, LU2-DAR*, KX6CP*, PA0RU*, LU8ZK*, SM3BZ*, SF8HW*, VE1MX*, VP8EP*, VU2YS*, UA1WC*, UC2BB*, 3APV: G3AAM*, G3GQS*, OH7PJ*, UA1CC*, UA3AN*, UA0KCO*, UB5NK, UC-KAR, UH8KA, UQ2KBR, OQ5IG, 4X4WF*, 4DO: F8CH*, G3GNL*, OK1KJG*, OK1XQ*, OQ5BC*, UA9KCA*, W/K's*, CN8BF, CR8PR, CT1CB, F8KV, F8BZ, GW3J, HB1RM, OH8PK,

OK3KMS, JA/KA's, SP6QH, UA1QC, UA3NK, UC2OM, UL7KA, VQ2GW, YU9EL, 5RK, CE-3AG*, CO2SW*, CO2WD*, CX1FB*, CX2BT*, EA3IH*, EA8CP*, HC4IE*, KS4BB* (Serrana Bank), LU3HL*, LUSAG*, LU9WK*, OQ5BB*, several ZS*, UA0OM*, UB3TQ*, VP8EP*, VP-9CX*, VP8ER*, VQ6LQ*, XE1AX*. L2022: FO-8AC, EA5BA, GM3EOJ, GW3J, FY7YI, HC-1XJ, HK0AI, LA1OA, UP2KBY, VQ6LQ, VR1B, VS6AE, TI9PT, YJ1DC, YV5WSF, ZB1FA, ZK1AK, ZK2AD, 4X4GY, 47RD, BERS19S; BVIUS, CT3AB, CX2BT, DU1OR, EA8CG, ET-2VB, FK8AV, HB1TL, KA0J, CN8OJ, KG6AIG, KP4AIO, KX6CO, P1VVKL, VK6GW, VK8RH, VK0CC, VP8BE, VQ4KRL, VR1B, VS6AE, VU-2SL, ZB1NE, 4X4FU, EL7WG/M, JA3XX/MM, UA0LS/MM, VR2DG/MM, L3039: DL9OA, DL-3JM, HB9IM, HB9WL, IC9J, HH2JD, KP4YT, KM6BL, LA4ZC, LA3DB, LJ4DM, UA0LC, UA-0RF, VK0CC, VP9CX, VSSJA, VS6AE.

14 Mc. Phone.—2AMB: HB9FE*, HH2JK*, TGRAL*, VE0NA*, XE2JD*, ZE6JA*, ZS5OE*, HC1FG, HK1BV, HR1ML, TI2GH, JZ0HA, V9BL, XE1ET, XE3AF, YS1MG, YV1AZ, 4X4HA, 8APV, CE3TR*, G2SB*, G2PU, G3AVZ, G3NBP*, G3JIM*, GW3DAH*, JZ0HA*, KL-7CMI*, KR6JA*, LUS6BA*, OA4HF*, OH8CA*, PY3ARZ*, T19CMF*, VE3BYV*, VE8ME*, VK-0RH*, XE2KO*, W/K's*, ZE7JA*, MP4DA, 4DO: W/K's*, KH6*, F8CH*, KP4GN, VE7JE*, EA8AY*, EA8CC*, JA/KA's*, KP4AA, SP-5PZK, BERS19S*, G2AMG, G31VI, HK4HW, VR2DE, L2001: KA2BE, KA2CG, VE1E1, VE-7TG, VK9AS, VK9VT, XE1HC, L2022: GM3EST, FK8AM, OX1PS, VSSJA, YV5GE, XE1XT, L3089: VR2DA, VP8BC, ZS6BW, GM3EST, L3065: 84 W's, FK8AV, KB6BH, KH8's, KJ6BV, KX6BU, KX6CW, LA1OF/MM, LA7RF/MM, VR2DF, XE2AM.

14 Mc. S.s.b.—L2022: KA0IM, KG6AHW, KG6MAM, KX6BP, VS4JT, VS5BY.

21 Mc. C.w.—2ABH: EA8BA*, ZS10U*, EL4A, 2AMB: OQ5 2QL: T19CW*, VR1B*, ZS4MG*. 2ZR: DJ1BP*, DM2AEB, G2TH*, GWSLFM*, KP4AHM*, O89EJ*, SP7HX, UC2AA*, VE8DL*, VQ2JM*, AC4RP*, ZS410*. 4DO: BVIUS*, DL1DV*, F8QO*, JA9GA, KH6's, W/K's*, XE2FL*, UA0OM*, G5DXV, G5YN, JABAQ, TF5TP, UA1CG, UA4IR, UA0's, VE8DL, VK-0RH, VP8CR, YV5ADP.

21 Mc. Phone.—2AMB: ZE1JV, ZS9RO, 3APV: W/K's*, KH0's*, KR6's*, FK8AU*, G2SB*, 3AS*, 3EFT*, 3CMU*, 3GCD*, 3KBE*, 5JB*, 5US*, H8CJY*, GMSKEZ*, OA4DA*, 9M2DQ*, 4GK*, 4HF*, HC1IF*, ON4GM*, SM3BIZ*, UB5FG*, VK9GW*, VU2NR, VSSJA, YN1AA. 4DO: W/K's*, KP4AAQ*, 4GN*, KH6OR, VSSJA, L2001: EA3CX, CN8FJ, FORAX, HC1IF, JA's, KR6QU, 6EO, KL7BML, VE1E1, VS1AQ, 1GZ, VR2BC. L3065: W/K's, KH6's, FK8AU, HB9MK, HL9KS, F8LE, KB6BH, ON4OM, VR2AZ, 2BC, 2CC, YV5ADX, XE1AHH, 1DT.

28 Mc. C.w.—2QL: LU1BA*, VR1B*, W's 4DO: W/K's. L2022: CN8JE, DL1FF, G2YK, G5DQ, KG6AA, OK1KRR, SP4JF, UA6KOB, VR2DA, 5A1BKV.

28 Mc. Phone.—2ABH: XN1FF*, CP1BY*, CR7LU*, G's*, ZS*, VQ's*, XW8AN*. 4DO: W/K's. VK5 Alan: CR7AD*, 7CK*, HS1B*, KM-6BK*, LUTAFG*, G31VJ*, LU8DDI*, VQ2BK*, 2DJ*, 2RB*, 8AV*, VU2NR*. ZS's*, ZC4AM*, 4X4's*, 457FJ*. L2022: HS1B, UR2BU, 457FJ, 9M2GA.

I wish to thank W4KXV (Don Chesser) for the valuable information taken from his DX Bulletin. Some of the usual weekly bulletins were not published as Don was away with a party on the DXpedition to the Serrana Bank. Although they had some trouble in finding the spot, they finally found it and gave a good account of themselves using the call sign KS4BB. My thanks also go to 2AMB, who never forgets to give me a ring; Spike VU2VS says 73 to you Laurie; 2QL gave me a lift just when I needed it; 3AOM is one of the regulars; Bill W6AL and Owen VR2DK called on George. Bill is known personally to many of the VK-gang, and Owen is a friend of Pete VR2DA. 3APV, your remarks regarding these notes are appreciated; guess the junior op. will give you an excuse to be up at all hours of the night and perhaps a little DX working on the quiet. 4DO found the bands fairly quiet; says a beam would help but has no room for one in the backyard. 5RK keeps me posted on the VK's doings; I'm sorry Ray, I was not sure of Alan's call. L2001, Barney is doing well on the 14 and 21 Mc. bands. L2022, Don has moved and finds the new iron house affects reception but is taking steps to overcome the trouble; best of luck. L3039 finds work plus batching cramps his style a little but managed to hear some good ones. L3065, it should not take you long to get the rest of those 50 States Ian. BERS19S, Eric now has 245 countries confirmed; he finds plenty of DX on 7 Mc. 2ABH just made it. That is about the lot for this month and hope to hear from you all again before the next issue.

FEDERAL

Fed. President: G. M. Hull, VK3ZS.
 Fed. Secretary: L. D. Bowie, VK3DU, Box 2611W, G.P.O., Melbourne, C.I, Vic.
 Federal Councils:
 New South Wales—Bob Godsall, VK2ARG;
 Victoria—Dave Wardlaw, VK3ADW.
 Queensland—Arthur Walz, VK4AW.
 South Australia—Rex Richards, VK5DO.
 Western Australia—Ron Hugo, VK6KW.
 Tasmania—E. J. Cruise, VK7EJ.
 Papua-New Guinea—Russ Coleston, VK9XK.
 Fed. Contest Committee: Reg. Harris, VK5RR, Secretary, Box 1234K, G.P.O., Adelaide, S.A.
 QSL Bureau: R. E. Jones, VK3RJ, 23 Landale Street, Box Hill, E.11, Vic.
 Awards Manager: A. G. Weynton, VK3KU, 5 York Street, Bonbeach, Vic.

NEW SOUTH WALES

President: Dave Duff, VK2EO.
 Secretary: Norm Beard, VK2ALJ, Box 1734, G.P.O., Sydney.
 Meeting Night: Fourth Friday of each month at Science House, Gloucester Street, Sydney.
 QSL Bureau: Box 1734, G.P.O., Sydney. Frank Hine, VK2QL, Manager; assisted by Allan Smith, VK2AIR.
 Zone Correspondents: North Coast and Tablelands: Noel Hanson, VK2AHH, Ryan Ave., West Kempsey; Hunter Branch: R. W. Rose, VK2AQR, 17 Brooks St., West Wallsend; Coalfields and Lakes: H. Hawkins, VK-2YL, 9 Comfort Av., Cessnock; Western: W. Stitt, VK2ZH, "Cambijowa", Forbes; South Coast & Southern: E. Fisher, VK2DY, 2 Oxlade St., Warrarong; Sth. Western: J. W. S. Edge, VK2AJQ, Wallace St., Coolamon; Tamworth: S. Smith, VK2AFS, 50 Upper St., Tamworth.

VICTORIA

President: D. A. Wardlaw, VK3ADW.
 Secretary: J. R. Lancaster, VK3JL.

NOTES

Administrative Secretary: Mrs. May, 478 Victoria Parade, East Melbourne, C.2. Postal address: P.O. Box 36, East Melbourne, C.2.
 Meeting Night: First Wednesday of each month at the Radio School, Royal Melbourne Technical College.
 Divisional Sub-Editor: V. M. Jones, VK3YE, 7 New St., Surrey Hills, E.10.
 QSL Bureau: Inwards and Outwards—W.I.A., Vic. Div., P.O. Box 36, East Melbourne, C.2.
 Zone Correspondents: Western: W. J. Kinsella, VK3AKW, Magdala, Lubeck; South Western: W. Wines, 48 Cranley St., Warrnambool; Far North Western: M. Polle, VK3GZ, 101 Lemon Ave., Mildura; Midlands: R. Jonasson, VK-3ND, Farnsworth St., Castlemaine; North Eastern: T. K. Tennant, Park St., Tatura; Eastern: J. Spark, VK3AJK, 20 Marshall Ave., Moe.

QUEENSLAND

President: John Pickles, VK4FP.
 Secretary: W. J. Rafter, VK4PR, Box 638J, G.P.O., Brisbane.
 Meeting Night: Fourth Friday in each month at the State Service Union Rooms, Elizabeth Street, Brisbane.
 Divisional Sub-Editor: D. B. Hughes, VK4ZBD, 60 Mayne Rd., Bowen Hills, Brisbane.
 QSL Bureau: Jack Files, VK4JF, Vanda St., Buranda.
 Zone Correspondents: Maryborough: R. J. Glassop, VK4BG, 80 North St., Maryborough; Townsville: R. K. Wilson, VK4RW, Hogan St., Stuart, Townsville.

SOUTH AUSTRALIA

President: B. W. Austin, VK5CA.
 Secretary: J. C. Haseldine, VK5JC, Box 1234K, G.P.O., Adelaide. Telephone: M 7851.
 Meeting Night: Second Tuesday of each month at 17 Waymouth St., Adelaide.
 Divisional Sub-Editor: E. C. Daw, VK5EF, P.O. Box 44, Gawler, S.A.
 QSL Bureau: G. Luxton, VK5RX, 27 Belair Rd., West Mitcham, S.A. (Inwards & Outwards).

WESTERN AUSTRALIA

President: L. Roeger, VK6HR.
 Secretary: J. R. Elms, VK6BE, Box N1002, G.P.O., Perth, W.A.
 Meeting Night: Third Tuesday of month at Perth Tech. College Annex, Mounts Bay Rd.
 Divisional Sub-Editor: J. R. Elms, VK6BE, 29 Central Road, Kalamunda.
 QSL Bureau: Jim Rumble, VK6RU, Box F319, G.P.O., Perth, W.A. (Inwards and Outwards).

TASMANIA

President: Mr. L. R. Jensen, VK7LJ.
 Secretary: K. E. Millin, VK7KA, Box 371B, G.P.O., Hobart.
 Meeting Night: First Wednesday of each month at W.I.A. Clubroom, 147 Liverpool St., Hobart.
 Divisional Sub-Editor: I. Nichols, VK7ZZ, 9 Cressy St., New Town.
 QSL Bureau: J. Batchler, VK7JB, 39 Willowdene Ave., Lower Sandy Bay, Hobart.
 Zone Correspondent: North Western Zone—Ray Terry Tongs, VK7TT, Northern Zone—Ray Waldon.

PAPUA—NEW GUINEA

President: F. N. Nolan, VK9FN.
 Secretary: Roy Taylor, VK9AU, P.O. Box 204, Port Moresby.
 Meeting Night: Last Wednesday in each month, R.S.L. Reading Rooms, Ela Beach, P. Moresby.
 QSL Bureau: G. Kiernan, VK9GK, P.O. Box 204, Port Moresby.

FED. CONTEST COMMITTEE

The final meeting of the retiring committee was held on 29th April to attend to the results of the Ross Hull V.h.f. Contest and to conclude the business.

To take up the gap between the retirement of the old committee and election of officers of the new committee to be nominated by the VK7 Divisional Council and ratified by Federal Executive, the retiring committee is acting on their behalf as follows:

VK-ZL Contest: The retiring Chairman and Contest Manager will attend to the posting of the next VK-ZL Rules to overseas magazines and societies.

Ross Hull Contest: The results will be published in A.R. and certificates will be forwarded. Any queries should be addressed to the retiring committee.

The incoming committee will take over with the checking of the R.D. Contest and logs should be sent to the F.C.C., W.I.A., Box 371B, G.P.O., Hobart, Tasmania.

As chairman of the committee for the five years that the members have been drawn from the S.A. Division, I have been very conscious of the ability and the loyalty that those members have brought to their office and on behalf of all members of the Institute I wish to thank them sincerely through this column.

In spite of much hard work and in spite of the many varied problems that have beset the committee from time to time, I can safely say that the service has brought its joy and happiness.

To the VK7 Division, the committee extends its best wishes for a successful term of office for their nominees. We are confident that they will receive the same help from contestants that we have had.

On behalf of the Contest Manager, Rex Richards, VK3DO; the Secretary, Reg Harris, VK-5RR; the V.h.f. Advisor, Reg. Galle, VK5QR; and DX Advisor, Les. Catford, VK5LC, 73 and many thanks.

—Gordon Bowen, VK5XU,
 Chairman (Retiring F.C.C.)

Writer has 11 of the 12 months of 1958 "CQ" for free disposal, November is the month that is missing; unless returned by the borrower in the meantime. First in with postage—approximately 5/—will get the lot.

—Ray Jones, VK3RJ, Manager.

NEW SOUTH WALES

HUNTER BRANCH

Unfortunately your correspondent was absent in Sydney during the April meeting when about 200 participated in a demonstration by John 2JU of his stereo apparatus. The attendance book was filled with empty spaces but forty members were present together with representatives of the I.R.E., "A" and "B" broadcast stations, radio trade houses, music stores, music critics, record manufacturers, University and Technical College and the public. It was voted a great success and thanks were given to the College and to Gordon 2CI for the loan of speakers and vented enclosures. Bill ZL unfortunately missed an opportunity to hear that sound so dear to his heart, but he was busy guiding 2AQR across the busy metropolitan streets.

The monthly social was again poorly attended but those who were there were fortunate to meet Kim W6YNB, of the S.S. Ventura. If the fog is as bad this month, the writer won't be there as he almost got lost after delivering his Fennel's Bay and Teralba cargo. Bill W6AL visited Ron 2ASJ during the month and also spoke to Bill 2XT per medium of the twisted pair. When we arrived at Bill's place for the social he was using his DX-40 and was pleased when he was able to get Harry 2AFA to interpret what fellow-countryman Dave 5DS was saying. Looks like the s.s.b. monster being fabricated at Charlestown is going to make itself heard from 2AWX very soon now. Congrats to John Rugg in attaining his 2ZJR call and hope that it won't be long before the morse is mastered.

SILENT KEY

It is with deep regret that we record the passing of:—

VK3WT—W. G. Barratt.

VK3AWL—L. Western.

FEDERAL QSL BUREAU

The A.R.R.L. advise the new address for the W5 QSL Bureau is: Brad A. Beard, W5ADZ, Box 25172, P.O. Houston 5, Texas, U.S.A.

A number of cards each addressed to different HL stations have been returned by the K.A.R.L., Central Box 162, Seoul, Korea. They bear the endorsement "Unauthorised Stn., return to sender."

Cards for VK0TF should be routed care of Fred Bail, VK3YS, who is handing them on behalf of Ted Fuller.

Under date of 26th April, Eric BERS185 supplies the following note for the column and solicits a few tears on behalf of his beloved "Magpies". All the tears from the wailing wall at Jerusalem would not atone for their performances since that date.

Last year OD5AM gave many VK stations their first contact with Lebanon. The station QSL reveals that the operator Antonie Nader is ex AR8AN. He now operates a 28 watt tx on 14 Mc.—A3 mainly. He requests cards be sent him at Box 1010, Beirut, Lebanon.

Al Scarlett, W2CC, and his good lady recently took a short vacation on Puerto Rico, as the guests of Luke KP4BU. Luke, who is a contractor, and his son who also holds a call sign, showed the Scarletts the whole island. Jack Elliott, ZL3CC, currently on a motor tour of the accessible parts of Europe, will later cross the Atlantic and spend a couple of weeks of his two months in W and VE, as the guest of W2CC.

CONTEST CALENDAR

Compiled by W.I.A. Fed. Contest Com.



NATIONAL FIELD DAY:

Comments on any changes to the F.C.C., W.I.A., Box 371B, G.P.O., Hobart, Tasmania.

REMEMB. DAY CONTEST, 1959:

Dates: Saturday, 15th August, to Sunday, 16th August, 1959.
 Duration: 1800 hrs. E.A.S.T. to 1759 hrs. Eastern: As for 1958.
 Logs: Return postmarked not later than 6th September, 1959.

VK-ZL DX CONTEST, 1959:

Dates: Phone—1000 GMT, Saturday, 3rd Oct.—1000 GMT, 4th Oct.
 C.W.—10th Oct.—11th Oct., 1959.
 Rules: Overseas, as for 1957. VK-ZL, Bonus value altered (watch Aug. "A.R.").

"CQ" WORLD-WIDE:

Dates: Phone—Last week-end Oct. '59.
 C.W.—Last week-end Nov. '59.

Believe Bill 2XT is taking up a collection to commemorate the retirement of Methuselah, understand that full particulars can be obtained from Gordon 2CI. Pleased to hear one of our more distant branch members report in on the 2AWX hook-up; I refer to Tas 2GV. Congrats to the new State Council and to Dave 2EO for his elevation to Presidency. Sorry to lose Pierce 2APQ who did an exceptional job over the past two years. There was quite a gathering of the Goons at Dural early this month. Muriel 2AJA, Bill 2ZL and Neta; Ivan 2AIM and Erica; Tom 2AOV and Barbara, and 2AQR were all present, some with and some without their harmonics. The only Goon absent was Pop 2AHL, who unfortunately doesn't take too kindly to travel. Dural was not wrecked, but I am sure Pierce and his cohorts breathed a sigh of relief when all and sundry departed.

Hope all you chaps headed the words of our advisers and wired, wrote or rang your Federal Member in regards to the proposed cut in your frequencies. The first die has been cast, so now you know why the official arm twisters have been at work so vehemently. The Fund is still open.

George 2ADZ has been roaming this district with his 22 and what he did to 2AQR on the billiard table still makes my hand shake—frame up of course.

The next Branch meeting will be held at the University of New South Wales, Tighes Hill, at 8 p.m. on Friday, June 12, and the next social at Bill Hall's will be on Wednesday, June 24. Your presence will make one more.

VICTORIA

This month we have a change of scribe for the notes in that Vern 3YE, who has been so ably attending to these for so long, has had to give up due to other business arrangements. Who it will be in the future we are not sure, so this month items from VK3 are very brief.

The general meeting of the Division was held on Wednesday 6th and 54 members were present. Fred 3YS, who is now the Vice-President, welcomed David 3ADW as Victorian Division President. We had a visitor in George Fink, W6DIT, who came with John Hiney 3JF.

The agenda item was films, which were: Operation Foothold, an excellent documentary on the establishment of the British Antarctic Base for the I.G.Y. at Shackleton; a travel film on Switzerland, and a further documentary across the Antarctic covering the operations of the Australian Antarctic Base at Mawson.

Following the break the adjourned annual general meeting was resumed and the accounts for the year were received and adopted. The annual general meeting was then closed and the ordinary general meeting re-opened. The following new members were admitted: J. F. Ryan, 3ZBR; P. Furr, 3ZAF; J. R. Goding, 3ZGG; T. K. Long, 3ZFI; and Associates M. W. O'Connor and V. H. Richardson.

The meeting elected Alan Elliott, 3AEL, as Federal Councillor in place of David 3ADW, who resigned to become Divisional President. David answered a number of questions regarding the F.A.S.C. and urged members who had not already done so, to contact their individual

Wireless Institute of Australia
Victorian Division

A.O.C.P. CLASS

commences

THURSDAY, 30th JULY, '59

Theory is held on Monday evenings, and Morse and Regulations on Thursday evenings from 8 to 10 p.m.

Persons desirous of being enrolled should communicate with—Secretary W.I.A., Victorian Division, P.O. Box 36, East Melbourne (Phone: JA 3535, 9 a.m. to 4 p.m.) or the Class Manager on either of the above evenings.

OBITUARY

WILLIAM ("BILL") BARRATT, VK3WT

Bill, who died on 30th April, 1959, after a long illness, was an active Amateur pre-war—operating under the call sign of VK-3WT from 1936 onwards. He was a keen c.w. man and only came on phone after the formation of the Geelong Amateur Radio Club, of which he was a foundation member.

He was a member of the Wireless Institute of Australia for many years.

His bright and cheerful manner and ready smile endeared him to all who met him and he will be sadly missed from our ranks.

Deepest sympathy is extended to his relatives.

Federal Members of Parliament. This was to be done in the Amateurs' capacity as a private citizen as soon as possible.

Fred 3YS appealed for a member to come forward to organise the erection of antennae for 3WI.

The next meeting, Jock 3ZDG is organising a v.h.f. lecture and demonstration; and in July, Lex 3AIL will give a talk on single sideband with particular reference to the phasing method.

GEELONG AMATEUR RADIO CLUB

April was a month of considerable activity for club members, but unfortunately ended on a note of sadness when on Thursday, 30th, our good friend Bill 3WT passed into the ranks of "Silent Keys". Bill, an original and highly respected member of the club was the recipient of the only life membership certificate ever presented by the club. We extend to Bill's relatives our deepest sympathy in their loss.

Club tx hunts were well attended. The first on April 1 was won by L. Costa and party; Keith Vriens, Alf 3AJF and Jim 3ABT being the operators at the hidden location. On 29th Bob 3IC with tx mounted on the motor bike went into hiding. He was found by K. Vriens, L. Costa and H. Michael in that order. The second hunt for the evening was again won by K. Vriens with this time H. Michael in second place.

The S.W. Zone Convention on the second week-end was a busy time for all club members and the culmination of weeks of planning to ensure that all visitors had a really enjoyable time. We congratulate Keith Vriens in being the first winner of the club trophy. This trophy, a very nice barometer and thermometer

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mounted on a piece of polished wood, was presented to the S.W. Zone to be awarded at each zone convention to the first member of the zone or affiliated club who finds the 80 mx hidden tx.

On 22nd of the month Alf 3AJF gave a very interesting talk on modulation with particular reference to the 122 set. Syllabus items for June are: June 10, home construction of gear, part iv.; Amateur tx's, and on June 24, the big night when all members should make an effort to be present—the Annual Meeting.

QUEENSLAND

The absence of notes from the Divisional Sub-Editor over the past months has been due to the sudden retirement, due to overwork of your usual conductor, Alan 4ZAE. Alan is to be congratulated on his effort in carrying the burden for so long and even when the impossible became the order of the day.

Elsewhere in this issue are some of the pertinent details concerning this year's Convention, particularly how much it's going to hurt your pocket. Inflation, or the cost of living or something, has not yet hit us, so we can still provide the meals that really made last year's show a great success.

By the time you read this, the programme and the organisation of the whole show will be completed, down to the last little item, so I can assure you that there are sixteen men on Council whose feelings are going to be pretty hurt if you don't turn up. This is the only Centenary Year Convention you'll have, the chance of attending, so as it's bigger, brighter and better than last year, it would be a good idea to attend.

The last general meeting produced a most unusual tape recording from Tom 4ZBH on synthetic music, which I understand will be played over 4WI some time in the near future. It is recommended for your attention as being really worth listening for, it opens up new vistas in the field of music.—4ZBD.

TOWNSVILLE

It was sustaining to see the last meeting so well attended, in fact, would not be a bit surprised if things are looking up. One new member was admitted, Claude 4UX, from Malanda who has been transferred to the National station here. Apologies were received from a few members who had been called to work in case of sickness amongst their co-workers. A lengthy discussion took place in regard to present war in calling for lectures in call sign order. This may be stopping a few from attending as their turn comes. It was decided that if the member did not want to give a lecture, it was OK with the other members. You are allowed to lecture on any subject you know and can speak about—need not pertain to radio. Some good lectures are in the offering.

Conditions on the band has not been so good although, like fishing, it means being on the right band at the right time. Quite pleased to receive amongst my cards JT1AA and FWAS—will make that double century yet! Bob 4MF has the quad working. Bob 4CR maintaining weekly skeds with Wilkes Land—VK0. Bert 4EB on leave and re-building the modulator. Eric 4EL still waiting to shift QTH. Owen 4OV and Ed 50W are heard in ragchew when the skip is right.

Basil sends along small items of news of the far northern boys. Bob 4TK threatens to try 20 mx one of these days. Claude 4ZY still in strife with burnt out transformers. Bill 4XM just back from a holiday in Sydney; took 2½ days on the return trip. Harry 4HO in Mosman is still complaining of wet weather and long hours. John 4FH is on long service leave; gave the DX away to yarn with the boys in the Tablelands. Sorry to hear that Ken 4XD has been on the sick list. His beat oscillator is not functioning properly. Basil found out at long last that a 7 Mc. folded dipole does not load properly on 14 Mc. New link coupling hastily knocked up.

Hope the I.T.U. Fund gets a boost as we have been talking to a few non-subscribers after tape recording and article in "A.R." by the Federal President.

SOUTH AUSTRALIA

A very filled meeting room was present to view a film on transistors, loaned by the Mul-lard Co. Theory of operation of these midgets were dealt with in some detail, and proceeded through r.f. amplifiers, i.f. strips, a.f. amplifiers and output stages, with complete explanation as to how and why in all cases.

Prior to the films being shown, a few items of general business were dealt with and Fed-

eral Councillor, Rex 5DO, gave a few minutes talk on his impressions and some ideas arising from the Easter Federal Convention.

We were pleased to hear of a DX visitor to VK5 recently in Bill W6AL, who was here in course of a tour of Australia with his XYL. Places visited here being at Austin 5WO and Bram 5AB. Pity it didn't coincide with a monthly meeting for there must be very few VK5 DXers who haven't worked Bill at one time or another.

Wal SDF reports completing his new table-topper, Geloso v.f.o. to parallel 807s, and on test it sounds first class. Keith 5KH went portable recently and let us hear his 122 in action from the beach. Brian 5TN heard recently with 12w. to a Wyndom. We have heard of a certain member of our fraternity who went to VK3 Easter time, who, not unaware of the weather there, decided an overcoat was a must. He promptly put it in a wardrobe at the allotted hotel and forgot it till he was on the Overland to return. Returned to him three weeks later. Anyway, it doesn't rain in Gawler, does it Les?

We were sorry to lose John 5QL who made his farewell on the air on April 19, an hour before the antenna was pulled down. John returns to U.K. after a tour of duty here, so we will look for his G call before long. We enjoyed having you with us John, and hope you come this way again some day. What about considering a permanent transfer?

W.I.C.E.N. activities have of course slowed down from a fire point of view, but as that is but a part of the idea of that organisation, practices, roll calls, and the like are being continued. By the way, if anyone hears any of these exercises they put on, write to Secretary John and report on them, for one of the items is "Coverage", so the more reports they get from as many centres as possible, the better able they can form a pattern of usable frequencies and locations.

An extension to the 5WI broadcast by including v.h.f. notes by Al 5ZCR is a good thing. Ron 5FY, now established at Elizabeth and complete with dipole on 40, works on 15 mx, too. Nobby 5WK heard recently discussing s.b. generation; mean business, Nobby? Reg. 5RR was on the hook with him. Bill 5VR heard quite a bit lately with great strength and getting into DX also.

Les 5LG raised an interesting point at last meeting, re the use of Q code and general c.w. jargon when working phone. That's a subject worth an argument any day and whilst not pursued in debate, was talked of "outside" and it seemed general that we conduct our contacts not for others but for ourselves, so that phrases and expressions peculiar to "Amateur Service Operators" did not in any way differ from the special jargon used, shall we say, by amateur photographers, or even fishermen, or sailors. So what. Who has some ideas on this one. A.R.R.L. had something on this recently, but we don't always have to follow someone else.

TASMANIA

This month, the pride of place goes to the North-Western Zone, particularly those members who had the energy and foresight in starting an A.O.C.P. class which has now blossomed into a full-blown Technical School class of about 20. In the South, also, an A.O.C.P. class, well into double figures, is in operation. We hope soon to have a nightly quarter hour of Morse practice going on the 80 mx band for you fellows, once the approval of the P.M.G. Dept. has been obtained.

It was good to hear 6LS, formerly 7LS, on the 40 mx band early in April. Bob 7OM has been heard again on the DX bands. Ken 7KA has been heard on double sideband suppressed carrier. S.s.b. the next refinement, Ken?

Jack 7JB was very distressed recently as QSL Manager to have returned to him a parcel of VK7 QSL cards sent from here in November last year to G land. The G Bureau refused to accept delivery after the Post Office in England had opened the parcel and found one or two cards in it which did not conform to regulations relating to printed matter. Naturally, the entire parcel of cards was returned to the sender, the VK7 Bureau, including the majority of cards which did not contravene the regulations. Accordingly, the Bureau will have to reject from the outset cards which do not in all respects comply with the regulations, so that correct cards will reach their destinations without any undue delays.

Confats. to Lon 7LJ on working a JA while portable. The I.T.U. Fund has been re-opened in VK7. We particularly ask those who have not previously contributed to re-consider favourably the Institute's request for a donation towards the cost of sending our delegate to

the Geneva conference. Send your donations to the Secretary, Box 371B, G.P.O., Hobart. At the May meeting of the Division in Hobart, it was decided that an honour role of past presidents and secretaries should be prepared for display in the club rooms, dating from the beginning of the Institute in 1925.

NORTH-WESTERN ZONE

Our last monthly meeting was fairly well attended in spite of the flu epidemic and we were treated to an illustrated talk on modulation by Peter 7FF. It was really a fine effort. During April another tx hunt was held; Harold 7MZ and George 7XL together hiding the offending instrument. Syd 7SF and Max 7MX were first home for the afternoon run, and Jim 7SO was first in for the morning effort. I think that will be the last hunt till the warmer weather is with us once more.

Another zone member, Frank 7FH, got onto the air recently and I think he has been getting out OK. Good work, Frank and welcome to the ranks. Sam 7SM is pressing on with the new rig. Max 7MX is still going great guns with his screen modulation. Harold 7MZ is playing around with a modulator for his rig, apparently he is going to give the c.w. a spell for a while.

I heard on the grapevine of the suggested cuts in the Amateur frequencies on the various bands and I'm afraid if they come to pass we won't have much room to work at all on some of the bands, anyway. Let's all hope that such cutting doesn't eventuate. Do your bit chaps in the way of donations to the I.T.U. Fund so that John 2JU can represent us to the full at Geneva.

HAMADS

1/- per line, minimum 3/-.

Advertisements under this heading will only be accepted from Institute Members who desire to dispose of equipment which is their own personal property. Copy must be received by 8th of the month, and remittance must accompany advertisement. Calculation of cost is based on an average of six words a line. Dealers' advertisements not accepted in this column.

FOR SALE: Imported Panda PR120V Transmitter, 120w. input phone, 150w. c.w., 2/807s parallel output pi-net to co-ax. outlet. Band switched 80 to 10, completely enclosed in solid steel case, filtered leads, t.v.i. proof, carries maker's service, £285. This is not a mini-mitter but the full rated job. FS6 Transceiver, modified to crystal operation on 40 metres, and to plate and screen modulation, complete with vibrator power supply, phones, mike, cables, etc. £20. Inspection and enquiries invited. E. C. Daw, Box 44, Gawler, S.A.

FOR SALE: One pair of 4X-150A's, still sealed in original cartons, £12 the pair. A. C. Rechner, 36 Payneham Rd., St. Peters, S.A.

FOR SALE: Type A Mk. III. Portable Transceiver, 100w. c.w., 230/6 volt, 40-80 metres. Best offer. JX 4693 (Vic.) after 7 p.m.

SELL: Klemt T.V.A.T. 200 Field Strength Meter, perfect order, complete with antennae, etc., circuit and book, £100. Rotary Converter and Transformer, 230v. d.c. in, 230v. a.c. out, 1kw. £30. S. Bryant, Nagambie, Victoria.

SELL: BC348 Receiver cpte. with pwr. supply and 2 c.c. converters for 15 and 10, double conv. to 85 Kc., S meter, £50. BC348 d.c. to 85 Kc., 17 tubes with pwr. supply, £30. ARE Receiver, no p. supply, £15. T. R. Naughton, Box 80, Birchip, Vic.

WANTED: Dry Rectifier from A Mk. III. equipment, or wrecked equipment containing it. W. E. Coxon, Darling-ton, W.A.

Homecrafts

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COLLARO 4-SPEED RECORD PLAYER
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BSR TU-9 230v. AC Turntable £7/10/0

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available now, Price 32/6

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HOT IN FIVE SECONDS, £6/10/0

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- Centre Rod Assemblies 8/4
- Steel Barrels 4/4
- Ceramic Beads 1/8
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- Switch Nuts 1/8
- Scope AC/DC 6v. 6-seconds Soldering Iron £2/10/0
- Scope 230v. Transformer 49/7
- 1/8 in., 5/32 in., 3/16 in. Spin Tites 11/6

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- 100 watt Inverters: 12, 24, 32, 50, 110, 230v. DC input; 230v. 50 cycles AC output, £33/2/6.
- 150 watt Inverters: 12, 24, 32, 50, 110, 230v. DC input; 230v. 50 cycles AC output, £37/1/3.

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ZEPHYR MATRIX BOARDS

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- 262B—6 " " " 12 " 6/3 "
- 263B—6 " " " 36 " 12/7 "
- 270B—9 " " " 6 " 3/10 "
- 272B—9 " " " 12 " 8/1 "
- 250—Small Pin, Solder Lugs 2/6 dz.
- 252—Large Pin, Solder Lugs 2/6 dz.
- 254—Right Angle Brackets 3/- dz.
- 255—Valve Socket, 7-pin .. 8/11 ea.
- 256— " with shield .. 8/8 "
- 257—Valve Socket, 9-pin .. 4/2 "
- 258— " with shield .. 10/7 "
- 281—Eye Bolts 2/- dz.
- 282—Rivetting Tool 38/11

High Quality "Brown" Headphones, Type "F"

60/- plus 25 per cent. Tax

Homecrafts Pty. Ltd. for the Finest Stereo and HI-FI Record Playing Equipment.

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- Connoisseur £49/10/0
- Orpheus £29/11/6
- Commonwealth Electronic:
 - Non-syn. type 12B1 .. £20/17/6
 - Synchronous type 12B .. £89/17/6
- Lenco £30/0/0

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- Aegis 3-4 £37/19/6
- Aegis 5-10 & control unit £48/2/6
- Gramphon, c/w. pre-amp. unit £58/16/0
- Leak TL12 c/w. Mk. III. pre-amp. unit £105/13/0
- Quad £113/12/6
- Steans 8 watt Hi-Fi EV4430 £47/15/0
- Armstrong A10 £82/19/0

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- BSR Players HF8/S £16/16/0
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- OC70 27/1
- OC71 27/1
- OC77 39/6

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- TS1 27/0
- TS2 29/8
- TS3 82/0
- 2N185 31/10
- 2N308 52/6
- 2N252 55/6

DIODES

- OA70 5/3
- OA79 6/5
- OA81 5/7
- OA85 7/1
- GEX00 4/11
- GEX35 5/8
- GEX45 12/11
- GEX54 12/11
- GEX56 22/7

Transistor Transformers

ROLA

- TR7 Output 420/3.5 ohm 18/0
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- DR4 Driver 3000/1330 ohm 18/0
- TR18 Output 375/3.5 ohm 21/0
- DR17 Driver 3000/2000 ohm 21/0
- TR27 Output 450/15 ohm 22/3
- DR27 Driver 4000/2000 ohm 23/5

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A complete range from
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Complete with grativule, etc.
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- 5C £1/13/6
- 5CX £1/18/0
- 5F £2/2/6
- 5FX £2/6/6
- 5-7H £2/8/0
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- 6H £2/5/0
- 6M £2/18/6
- 6-9H £2/15/0
- 8-PA £3/3/0
- 8M £3/3/0
- 12-O £6/0/0
- 12-O De Luxe £6/10/0
- 12-MX. twin cone, £6/16/6
- 12-OX, twin cone, £11/4/0
- 12UX Hi-Fi, 15 ohm V.C. £28/19/6

290 LONSDALE STREET, MELBOURNE

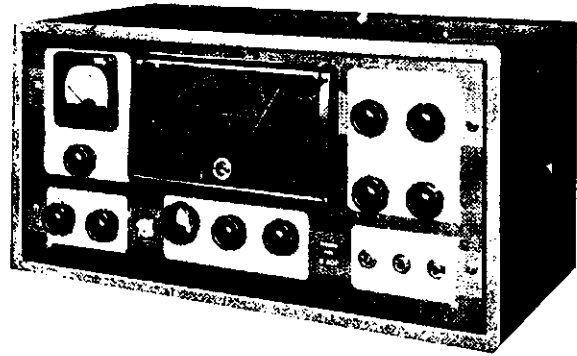
FB 3711



AMATEUR BAND H.F. COMMUNICATIONS RECEIVER

Model
209-R

This is a 12-Tube (plus 1 voltage stabilizer, 1 current stabilizer, and 2 selenium rectifiers) H.F. Communications Receiver designed exclusively for Amateur Band operation.



The following features and specifications are presented:

FREQUENCY RANGES:

10 metre band: 28.0 — 29.8 Mc.
11 metre band: 26.4 — 28.1 Mc.
15 metre band: 20.6 — 22.0 Mc.
20 metre band: 13.8 — 14.6 Mc.
40 metre band: 6.95 — 7.5 Mc.
80 metre band: 3.5 — 4.0 Mc.

ACCURACY OF CALIBRATIONS:

80, 40 and 20 metre bands ± 10 Kc.
15, 11 and 10 metre bands ± 20 Kc.

INTERMEDIATE FREQUENCIES:

1st I.F. 4.6 Mc.
2nd I.F. 467 Kc.

SENSITIVITY:

Better than 1 microvolt for 1 watt audio output.

IMAGE REJECTION:

Better than 50 db. on all frequency ranges.

SIGNAL TO NOISE RATIO:

At 1 microvolt better than 6 db.

TUBE LINE-UP:

R.F. Amplifier 6BA6
Oscillator buffer 12AU7
Mixer, 1st I.F. (4.6 Mc.) 6BE6
Mixer, 2nd I.F. (467 Kc.) 6BE6
Crystal Oscillator for S.S.B., 12AU7
1st I.F. Amplifier 6BA6
2nd I.F. Amplifier 6BA6
Audio and A.V.C. Det., B.F.O., 6T8
Mixer for S.S.B. 6BE6
A.F. Amp. Crystal Calibrator, 12AX7
Noise Limiter 6AL5
Audio Output 6AQ5

SELECTIVITY:

Five positions: Normal, Xtal 1, Xtal 2, Xtal 3, Xtal 4.

RECEPTION OF S.S.B.:

Amplifier and detector circuit for S.S.B. signals, upper as well as lower sidebands, with carrier re-insertion.

"S" METER:

S1-S9, S9 + 20 db., S9 + 40 db.

ANTENNA INPUT:

Balanced or unbalanced.

AMATEUR NET PRICE: £163/1/10 (F.O.R.) including Sales Tax

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JULY, 1959



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At the request of numerous Amateur Operators, a NEW AEGIS Type J.39 455 Kc/s. highly stable, highly selective I.F. Transformer for COMMUNICATIONS work has been made available. This quality Transformer has been found particularly suitable in single sideband circuits incorporating cascaded half-lattice crystal filters, as described in "QST" and A.R.R.L. Handbooks.

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(KEN MILLBOURN, PROF.)

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1H6	3/6	6F6G	10/-
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1K7	5/-	6J5GT	7/6
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1P5	5/-	6K6G	7/6
1Q5	5/-	6K7G	5/-
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3S4	7/6	6SF7	12/6
5U4G	12/6	6SG7	12/6
5V4G	15/11	6SJT	12/6
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6C8	5/-	12AH7	7/6
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1C7	3/- each or 7 for £1	956	7/6
2X2	7/6 each or 3 for £1	12SK7	5/-
6AC7	2/11 each or 8 for £1	12SN7	12/6
6C4	5/- each, or 5 for £1	12SQ7	2/6
6H6Gs	£1 a dozen	12SQ7GT	2/6
6K7G	5/- each or 5 for £1	12SR7	5/-
6SH7	5/- each or 5 for £1	25Z5	5/-
6SH7GT	4/- each or 6 for £1	42	12/6
7C7	2/6 each or 10 for £1	45	5/-
954, 955	5/- ea. or 5 for £1	75	2/6
		78	2/-
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		726A	7/6
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		829B	£5
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		833A	£15
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		866/DQ2	£1
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		885	7/6
		VT50	2/6
		VT52	10/-
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		X61M	12/6
		956	7/6 each or 3 for £1
		12SF7	10/- each or 3 for £1
		1625	5/- each or 5 for £1
		CV66 (RL37)	5/- ea., 5 for £1
		EA50	2/6 each or 10 for £1
		EF50	3/6 each or 7 for £1
		EF50 valve sockets,	3/6 ea.
		RK34	5/- each or 5 for £1
		VT501	7/6 each or 3 for £1
		VT127	£1 a dozen

THIS MONTH'S SPECIALS

SCR522 Transceiver, freq. range: 100-150 Mc. Complete with valves including 832s, as they come, clean condition, £10.

CRYSTALS in DC11 Holders. All £1 each—

5170 Kc.	5980 Kc.	7962.857 Kc.	8425.714 Kc.
5410 Kc.	6350 Kc.	7997 Kc.	8460 Kc.
5700 Kc.	6420 Kc.	8065.714 Kc.	8525 Kc.
5710 Kc.	6423.333 Kc.	8161.538 Kc.	8562.857 Kc.
5810 Kc.	6450 Kc.	8360 Kc.	8645.45 Kc.
5910 Kc.	6960 Kc.	8371.428 Kc.	8682.857 Kc.
5950 Kc.			8751.428 Kc.

Crystals: 1898.75 Kc., 1986.25 Kc., and 1985 Kc., £2 each.

3.5 Mc. Marker Crystals, miniature, with holder £2/10/0

Meters—0-0.35 amp. R.F., FS6 and 101 type 10/-

BC455 Command Receiver, 6-9.1 Mc., air tested, with valves £5

APN1 Receivers, complete with valves £7/10/0
As used in A.C. Power Supply for No. 22 Set. (see page 3).

A.W.A. Transmitters, Mobile, freq. 33 Mc. Contains four type 6V6s, one 807 final. 6v. vibrator supply. Modulated. £7/10/0

108 Mk. III. Portable Transceivers. Complete with Valves, Headphones, Mike. Freq. range: 7-9 Mc. Bargain £7/10/0

128 Portable Transceivers, freq. range: 2-4.5 Mc. Nine miniature valves (1.4v. series), 0-500 microamp. meter. Less Crystals. Bargain £7/7/6

3BZ Transmitter, complete with valves, 12v. operation £15

AT5 Transmitters, as new, with valves & dust covers, £8/17/6

AR8/AT5 Connecting Cables 10/- each

SCR522 Signal Generator, freq. cov. 100-150 Mc. Calibrated dial. Complete with valves £6

SCR522 28 volt Genemotor Power Supply 30/-

SCR522 Modulation Transformers 30/-

SCR522 Driver Transformers 10/-

A.W.A. V.h.f. Mobile Transmitter, f.m. Freq. range 156-172 Mc. Crystal controlled, complete with min. valves and two 2E26 and vibrator supply. A gift at £12/10/0

Type "S" Power Supply. 230v. AC. Good condition £25

Co-ax Cable, 72 ohm, 1/2" diam. in 10-yd. lengths £1, or 2/- yd.

Co-ax Cable, 98 ohms, in 100 yard rolls. £7/10/0 per 100 yard roll, or 1/9 yard.

Co-ax Cable, 100 ohm, any length 2/- yard

American Ampenol Co-ax Sockets (chassis type) 2/6

Pi Type Co-ax Plugs and Sockets 4/- pair

Command Receiver Flexible Drives, 12 ft. long 10/-

Relays—522 type, 5000 ohm £1

Relays—522 type, aerial change-over £1

U.S.A. I.F.F. Units, complete with Valves and Genemotor, £5/17/6. Less Genemotor, £4/17/6.

Car Radio Suppressors: Spark Plug type, 2/- each; Distributor type, 2/- each, or 12 for £1.

APX1 24v. Shunt Motors, ideal for Small Beams. Works on A.C., new £1/10/0

APX1 Chassis, top deck, containing 28 Miniature Ceramic 7-pin Valve Sockets, Condensers, Resistors, etc., etc. A good buy at £1/15/0; postage 5/- extra

1625 Ceramic 7-pin Sockets 3/6; 807 Ceramic 5-pin Sockets 2/6

Loctal Valve Sockets 1/- each

Valve Sockets, Acorn Ceramic 3/6 each

ALL Q-PLUS T.V. CONSTRUCTORS PARTS READILY AVAILABLE

Pots., small wire wound: 25, 50, 100, 250 and 500 ohms, linear 3/6 each

Electrolytic Condensers: 16 uF. 525v.w. (pigtail type), 2 uF. 525v. (pigtail type), 3/- each or £2/10/0 per carton of 20.

3" Coil Formers, Plastic 6d. each

Midjet Ceramic Trimmers, 3 to 55 pF. 1/-

A.W.A. B.F.O. Type 4077. 10 cycles to 13 Kc. A.C. operated. Condition as new £25

A.W.A. Valve Voltmeter, 1.5v. to 150v. A.C. operated. £15

English Filter Chokes, small type, 40 Ma., 100 ohm resist. 3/6

Shielded Wire, single, American 1/6 yard

Power Transformer, small, 265v. aside 60 Ma., 6.3v. 2.8 amp.: 200-225-250v. primary. Brand new 25/-

American 4 mfd. 1000v. Condensers 7/6 each

Miniature Variable Condensers, screwdriver adjustment, silver plated. Sizes available: 25 pF., 55 pF., 80 pF., 105 pF., or 110 pF. New condition. 7/6 each or Three for £1.

Two-Gang Condensers, Broadcast 12/6

Three-Gang Condensers, AR8 High Frequency Type 15/-

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1958 Call Books now in stock, 5/- Also Log Books, 4/6.

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Subscription rate in Australia is 18/- per annum, in advance (post paid) and A£1/1/- in all other countries.

Wireless Institute of Australia (Victorian Division) Rooms' Phone Number is JA 3535.

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI: Sundays, 1100 hours EST, simultaneously on 3875 Kc., 7146 Kc., and 146.0 Mc. Intrastate call-backs taken on 7050 Kc. only at present.

VK3WI: Sundays, 1130 hours EST, simultaneously on 3373 and 7146 Kc., 61.016 and 146.25 Mc. Intrastate working frequency 7135 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI: Sundays, 0900 hours EST, simultaneously on 7146 Kc., 14342 Mc. and 50.172 Mc. Country hook-up Sunday mornings 0900 hours. Please call VK42M on 20 mx and Bruce VK4ZBD on 6 mx.

VK5WI: Sundays, 1000 hours SAST, on 7146 Kc. Frequency checks are given by VK5MD and VK5WI by arrangements on all bands to 56 Mc.

VK6WI: Sundays, 0930 hours WAST, on 7146 Kc. No frequency checks available.

VK7WI: Sundays at 1000 hours EST, on 7146 Kc. and 3672 Kc. No frequency checks are available.

VK9WI: Sundays, 0830 hours EST, simultaneously on 3650, 7146 and 14342 Kc. Individual frequency checks of Amateur Stations given when VK9WI is on the air.

AMATEUR RADIO

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA

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Postal Address: P.O. Box 36, East Melbourne, C.2, Vic.

EDITORIAL



THE W.I.A. I.T.U. FUND

The Federal Executive, Federal Council and Divisional Councils of the Wireless Institute of Australia express their thanks to all the Members, Non-Members, Short Wave Listeners, Trade Houses, Overseas Societies and Amateurs who have so willingly subscribed to the Institute's Fund to finance its own accredited Amateur representative with the Australian Delegation to the International Telecommunications Union Conference due to commence in Geneva this August.

After deducting the expenses attached to organising such a fund, the current nett total has reached £2,000—a most heartening indication of the seriousness with which the necessity to send our own representative was considered by those who contributed.

Readers will remember that our estimated target figure requirement was to reach a sum of £2,500. Taking into account that many contributions were in excess of the £1 requested and that from 3,800 licences a maximum of £3,800 was possible without contributions from non-licensed people, it is obvious that it is still possible to reach the target figure.

The Fund will close on 31st July and we are appealing to those who have not contributed to support the Fund before the closing date.

It is common knowledge now that the Wireless Institute of Australia,

with the assistance of Honorable Members of the Australian Government, has done all in its power to protect the current frequency allocations for the use of all Amateurs. Can we therefore anticipate your donation during the closing weeks?

Elsewhere in this issue is a brief summary of the contributions received for the Fund. A final balance sheet will be published after the Fund closes and any balance in hand after the Geneva Conference concludes will be directed to providing some service for the benefit of all Australian Amateurs, not for only those who are members of the W.I.A.

A tremendous effort has gone into making a stand on behalf of Amateur Radio and never before has it been so urgent for unity of thought and action as it is right now. Your cherished and unique hobby is in jeopardy! You have reached a critical stage in the position of Amateur Radio in the ever widening sphere of communications. What happens at Geneva could well effect the functioning of the Amateur Service the world over. Irrespective of petty grievances, irrespective of whether you are a member of the W.I.A. or not, irrespective of all thought to the contrary, you should support your own representative at the forthcoming Geneva Conference.

FEDERAL EXECUTIVE.

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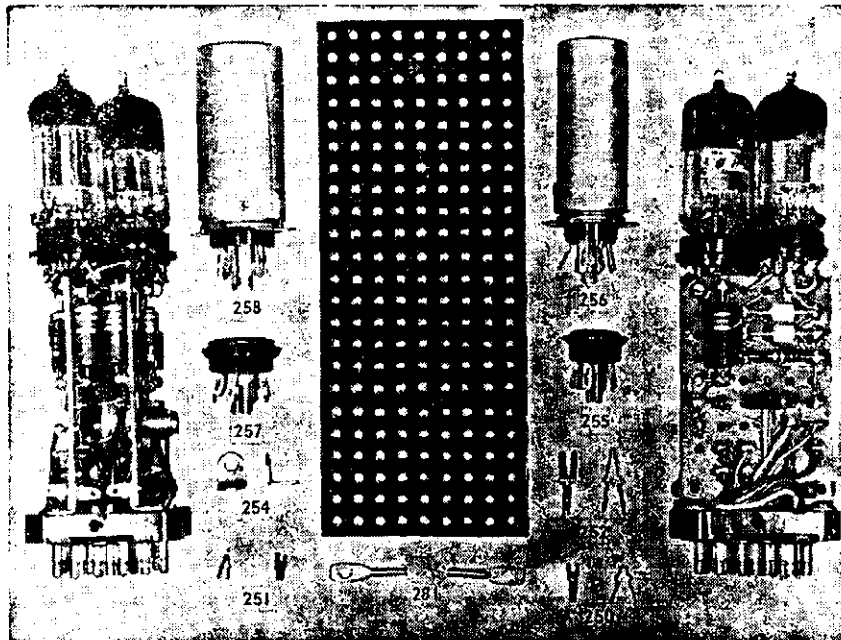
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Wireless Sets No. 22 and No. 122

Modifications Compiled and Tested by W.I.A. Publications Committee

THESE popular items of disposals equipment are finding great favour with Amateurs, many of whom have agreed to pass on the results of their developmental work through these columns.

Briefly, the two types are basically the same, but the 122 set provides for the use of two crystals in addition to the v.f.o., which is common to both.

The circuitry is that of a transceiver, operating from a primary source of 12 volts to a twin vibrator supply which provides an input power of approximately 20 watts c.w. and 10 watts on phone on two switched bands; 2-4 Mc. and 4-8 Mc. Valves used in the receiver and speech amplifier sections are of the 2 volt, directly heated variety, but the transmitter uses a 6U7 m.o., 807 p.a. and a 6N7 modulator. These heaters can be switched off to reduce battery drain to 0.9a. for listening only. Primary current on transmit is 6.3 amps.

It is not within the scope of this article to give a detailed description as it is considered that persons desiring to carry out modifications would be well advised to obtain a copy of the official handbook. The circuitry is difficult to follow and there is very little space for working among the closely spaced components. However, for those who are not familiar with these transceivers, a few more details could be of interest. Adequate metering facilities are provided, including a.v.c., drive, receiver h.t., transmitter h.t., and battery voltage. A b.f.o. with pitch control, together with separate r.f. and audio gain controls, plus a rather mediocre noise limiter give reasonably good control for Amateur operation. The output is through a piccoupler which needs constant maintenance to ensure good contact. Push-to-talk operation and keying is accomplished by relays.

The units are true transceivers in that the transmitter frequency on v.f.o. operation is the frequency to which the receiver is tuned. It must therefore be emphasised that the lining up procedure must be thorough and great care should be taken not only in lining up according to the manual, but in the avoidance of adjacent channel QRM during operation.

It has been a general opinion that these units lack audio. With a desire for a higher percentage of modulation, a series of modifications were carried out and these are given below. However, it is considered by some that the desired results can be achieved without any modifications, simply by using a microphone with a much higher output. Some of these microphones are available and have been heard in tests with several VK3 stations. The one disadvantage appears to be that the increased sensitivity picks up background noise—mainly vibrator hum.

AUDIO

For those who prefer the original dynamic microphone, the following

modifications will increase the modulation percentage:

(1a) Earth the cathode of the 6N7 modulator. The cathode is normally connected to the positive side of the heaters and this bias can be removed with safety.

(1b) Remove R4A from the grid of the 1F5 audio driver. If instability occurs, replace with an r.f. choke right at the socket—not in the resistor position.

(1c) Increase the plate load on V1C to 125K. It is normally 25K (R36B). The easy way is to lift one end and put 100K in series. Likewise increase the screen resistor to 600K. It is 100K (R4B), so put 500K in series. By-pass these at the h.t. end with a 0.01 μ F. capacitor.

This modification increases the gain of the microphone pre-amplifier.

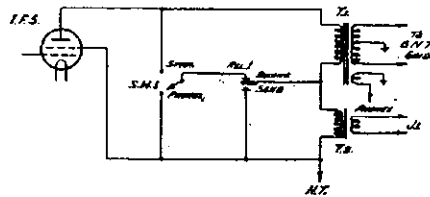


Fig. 1.

T1—Existing driver transformer.
T2—Miniature speaker transformer.
Sw1—is the normal/remote s.p.d.t. switch.
Rel1—Existing relay R1A, modified by removing the "break/right" springset (contacts 21 and 22) and replacing with a change-over set.
J1—Existing Jack marked "Line".

Some sets have given trouble with low frequency instability on phone. The following treatment was found to be effective:

(2a) By-pass h.t. at R5A in the plate circuit of V3A with an 8 μ F. electrolytic capacitor. There is ample room for this near R5A.

(2b) Add a screen by-pass to the 1F5 audio driver. This does not appear to be necessary in all cases, but has been found useful when instability has resulted following circuit changes.

Whilst some operators have endeavoured to change the frequency response in the modulator circuitry, others have obtained good results by leaving this severely alone. These modifications have been suggested and are given merely as a basis for individual experiment.

(3a) Remove the inverse feedback components R5B and C17A. This feedback only levels out the response of the receiver. High frequency response is said to be better.

(3b) Decrease coupling condenser C16E to 0.002 μ F. This is to decrease the low frequency response.

SELECTIVITY

Receiver selectivity has been claimed to be improved by removing the resistors which are in parallel with the i.f. coils. As these resistors have values of 500K and 750K, it was decided to test two unmodified receivers against one

from which all the relevant resistors had been removed. All sets were aligned and readings taken to determine bandwidth. It is extremely doubtful whether any improvement comes from this difficult modification and it is therefore not recommended.

Better results were obtained by the use of a Q Multiplier connected by coaxial lead to the mixer plate.

POWER INCREASE ON PHONE

Increased power is possible for phone work only by adding a toggle switch to the power supply and connected between pin 5 on the power outlet plug and ground. When this switch is closed, RL1 is energised and power input is increased to approximately 18 watts. This modification is beneficial if increased modulating power is made available. Increased voltages make the receiver more sensitive (and noisy).

Care should be used with this modification for two reasons, (a) return the toggle switch to "off" before switching on the b.f.o., otherwise the transmitter will come on; and (b) when switched to high power, re-tune and re-net.

After careful testing, it was concluded that the advantage, if any, gained by the increase of power was more than offset by the undesirable effects resulting from lack of regulation.

RECEIVER AUDIO OUTPUT

A proven method of obtaining ample loudspeaker output is illustrated in Fig. 1.

The speaker transformer was mounted under the chassis in the compartment under the 1F5. Shifting the tag strip from the rear wall permits this and the same mounting holes suffice. The tap strip is re-located under the chassis on a bracket held by a mounting screw which holds the bank of electrolytic relay delaying condensers. This new position shortens the wiring to the tag strip.

In operation, the selector switch gives the type of operation desired with no loss of efficiency on transmit. It will be seen that transformer not required is shorted out and the 1F5 is never without voltage on the plate.

Another method is to use the two existing break contacts (21, 22) and J1 as previously mentioned but use a speaker with a 200 ohm line transformer. This can be made up from a normal speaker transformer by dismantling the core, unwinding the secondary and then take off turns from the primary until a d.c. resistance of 50 ohms remains. Take out flexible leads, add an insulating layer and then rewind the primary and reassemble the core. The output obtainable by this method is not as great as that which is illustrated.

MAINTENANCE

Briefly, all that is necessary to get really good performance from a 122 set is to ensure all relay contacts are clean

(Continued on Page 16)

THE WARBURTON FRANKI PAGE

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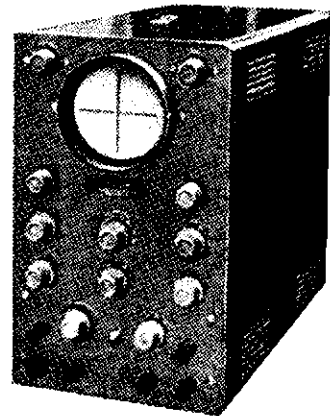
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The "Mickey-Match"

A SIMPLIFIED S.W.R. INDICATOR AND OUTPUT MONITOR

ROBERT C. BUNCE, K6QHZ

● Here is an ingenious version of the Monimatch, using a form of construction that eliminates a few components and, in doing so, simplifies the electrical problems. The key is the use of flexible co-ax cable (reminiscent of the co-ax Twin Lamp) for the line section, making it possible to have the input and output connections close together.

IN view of the current popularity of s.w.r. indicators of all varieties, we thought we might as well throw this little piece of gear into the ring. Because the instrument lends itself to a compact mounting box we were about to name it "Minimatch," but that seemed rather common so we took the next name that came to mind—Mickey.

Enough of that. Little Mickey is just an off-spring of the Monimatch. We started out to make the Monimatch originally, but couldn't find a piece of sheet metal of the proper dimensions around the shack. Discouraged, we sat down and cogitated. Suddenly the light dawned. The pick-up trough of the original Monimatch is really nothing but a piece of co-ax with one side missing to let some r.f. out. Now, if you could just take a plain ordinary piece of co-ax and slide an insulated wire under the shield, it would pick up r.f. just like the old Monimatch line.

It worked. In fact, as the final design took shape this one modification led to several other design short cuts that add up to an extremely simple, and surprisingly accurate, s.w.r. indicator. To enumerate: since co-ax is flexible, and the field entirely confined inside the shield, the pick-up section can be rolled up and put in a small box of common dimensions. When rolled up, the input and output connectors can be placed close to each other, and the two end leads from the pick-up line can be brought out near each other. In the final version these leads are brought directly to a switch, kept short, and the r.f. is switched. Exit one crystal diode, and with it the problem of matching diodes—a single diode detects both forward and reflected power.

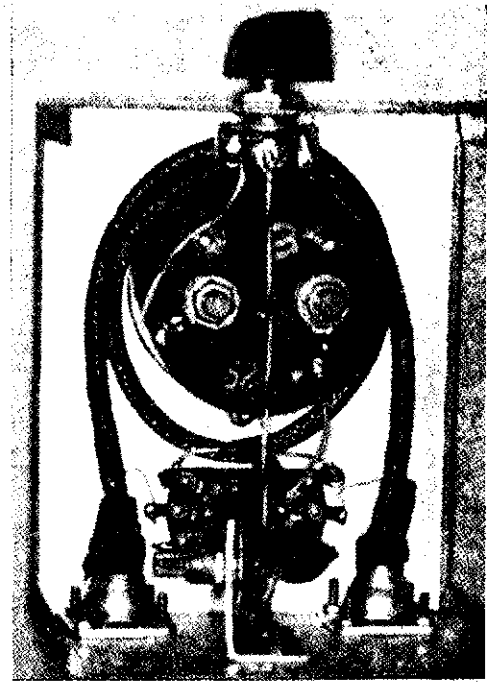
One other modification was the clincher. A later version of the "daddy" Monimatch uses a fixed line-terminating resistor, and the impedance of the pick-up line is adjusted by varying its proximity to the main conductor until the impedance equals the value of the resistor. With the Mickey-Match, it is obviously impossible to vary the spacing in this manner, but the resistance is varied instead; i.e., the pick-up line is terminated in a potentiometer which is adjusted to equal the impedance of the pick-up line.

CONSTRUCTION

The unit pictured and described here is designed for power levels between 10 and 200 watts and uses 73 ohm RG-59/U, although a 53 ohm version, using RG-58/U, could be built in exactly the same manner. Parts required are listed under the schematic diagram, Fig. 1. The components are mounted in a 3" x 4" x 5" aluminium box, with the meter and selector switch on top, the sensitivity potentiometer on one end, and the two coaxial connectors on the other end, near the switch. The terminating potentiometer is mounted inside on a bracket, since it only has to be adjusted once, during calibration.

Construction of the pick-up section is shown in Fig. 2. To make it, use a piece of RG-59/U (or 58/U) about 16" long. The length isn't critical. Strip the outer jacket from the entire piece. Bunch the shield together into the middle of the line, and work a hole through the bunched braid about 1/2" from each end. Thread a piece of thin insulated wire (the thinner the wire the better; we used No. 30 enameled in this version) through one hole, under the braid, and out through the other hole. It's easy if you feed through a stiff wire first, and use it to pull the thin wire through. Stretch the braid back over the co-ax centre conductor, with the insulated wire inside, and the section is made. Install co-ax connectors and connector hoods (those funnel-shaped things) on the ends of the line.

Fig. 3 shows how the co-ax is looped and installed around the meter in the



This inside view shows the co-ax line section looped around the body of the microammeter. The forward-reflected switch, terminating potentiometer, and crystal diode are between the two co-ax fittings at the top. The variable resistor at the bottom is the sensitivity control.

box, with the pick-up line ends connected directly to the switch. Keep these leads as short as possible to prevent unnecessary reactance from creeping into the act.

The inside-view photograph shows the general wiring details. Remember that crystal diodes don't like heat; hold the leads in a pair of long-nose pliers while soldering, solder quickly, and keep hold of the leads until the solder joints cool. Keep the r.f. leads as short as possible, with one lead from the crystal connected directly to the jumper across the switch and the other to a tie point, with the by-pass capacitor connected straight to the ground lug. We removed the back cover from the terminating potentiometer to reduce internal capacitance and it helped reduce residual reactance, particularly on ten metres.

Before the completed unit can be checked out, you'll need a dummy load. We made a 70 ohm load by soldering a tremendous quantity (80, to be exact) of 330 ohm, 2w. resistors in a series-parallel arrangement that came out to 70 ohms. We happened to have a basket full of the things and they worked well, but any combination of carbon resistors that adds up to 50 or 70 ohms, as the case may be, and that, in toto, will handle the power output of your transmitter, will do the trick. Non-inductive loads also are available commercially. Don't try to calibrate with a light bulb—it "just don't work." Light bulb filaments vary all over the lot in resistance, and they have a ten-to-one or better ratio of hot resistance to cold resistance.

ADJUSTING R1

The forward-power switch position is labelled "Calibrate" and the reflected-power switch position "Read" (meaning

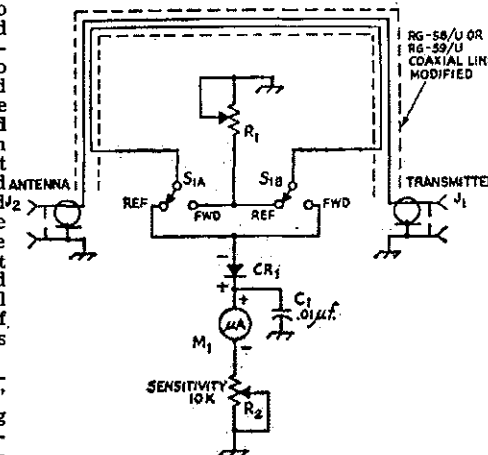


Fig. 1.—Circuit of the co-ax line s.w.r. indicator.

- C1—Disk ceramic.
- CR1—1N34 or equivalent.
- J1, J2—Co-ax chassis receptacles.
- M1—0-200 microammeter, or other range depending on sensitivity desired.
- R1—200 or 250 ohm carbon variable.
- R2—Potentiometer, linear or log taper.
- S1—D.p.d.t. "tone-control" switch.

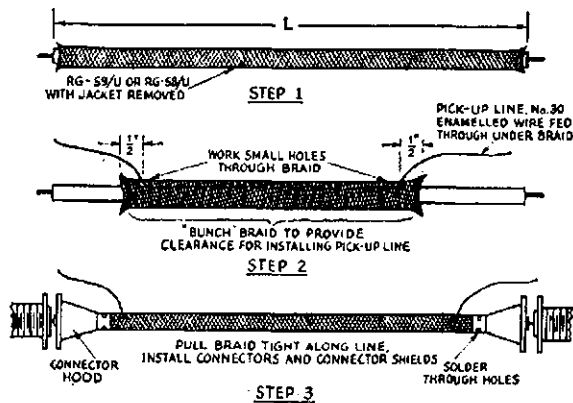
(Note: Values as high as 500 ohms may be used for R1 if lower values are not readily available, but the higher the value the more critical the adjustment.)

"Read s.w.r. in this position"). To adjust R1, leave the cover off the instrument. Attach the dummy load to the antenna connector, and the transmitter output to the transmitter connector. Set the selector switch to the "Calibrate" position. Energise the transmitter on 10 metres, or the highest band used, and load the transmitter into the dummy. If the meter goes off scale, and it probably will, turn the sensitivity control R2 until it comes back on scale.

Now switch to the "Read" position, and adjust the sensitivity control for as high a reading as possible, keeping

To check out the over-all balance of the instrument, turn the switch back to the "Calibrate" position and adjust the sensitivity control for a full-scale reading. Switch back to the "Read" position and re-check to make sure the null is still complete. Then connect the transmitter to the antenna jack and the dummy load to the transmitter jack. The null reading should now occur with the switch in the "Calibrate" position, and the full-scale reading should occur with the switch in the "Read" position; i.e., the functions reverse. If the reversed readings exactly (or almost ex-

Fig. 2.—Construction of the line section. If enamelled wire is used, be careful not to scrape off the insulation when the wire is drawn through the braid. Length "L" can be varied to suit power level; sensitivity increases with frequency and with increased length of line section. The instrument shown in the photograph uses a 16-inch length for reasonable sensitivity over the 3.5-30 Mc. range with power levels of 10 to 200 watts.



the needle on scale. Turn the terminating potentiometer R1 for a null in the meter reading. If your dummy load is reasonably good the null will be extremely deep—the meter reading should drop almost to zero. The unit pictured nulled out to less than 5 μ A. on 10 metres with the sensitivity potentiometer full out, and with 50 watts of r.f. in the load. The setting where the null occurs will vary all the way from 20 ohms to 150 ohms, depending on the size of the pick-up wire and dielectric constant of its insulation. The setting of this resistor (at the null) is the characteristic impedance of the pick-up line. The higher this final impedance, the more sensitive the instrument. The version pictured, using No. 30 enamelled wire, nulled out at about 90 ohms, and the sensitivity is about the same as earlier versions of the Monimatch.

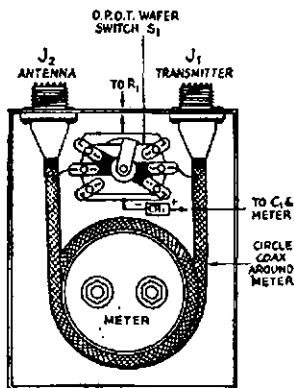


Fig. 3.—Installation of the line section. R.f. leads should be kept as short as possible, but d.c. leads can be as long as desired. Longer line sections can be installed by wrapping more turns around the meter.

actly) equal the original readings, the instrument is in good shape. There was no detectable difference in these readings with the unit pictured.

With this adjustment, replace the cover, and you can use the thing to adjust antennas with no further ado.

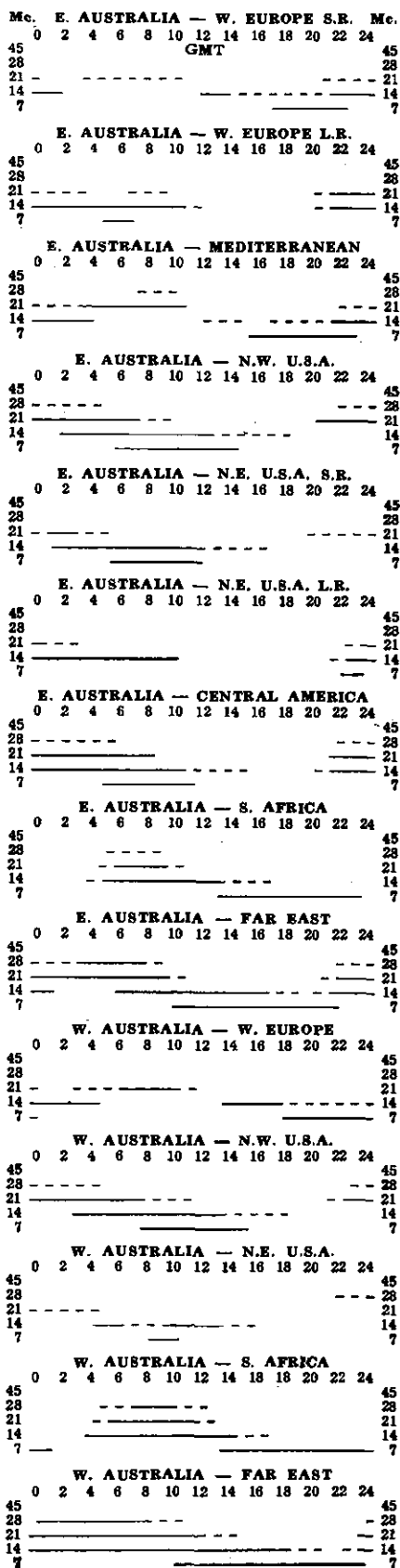
OPERATION

In actual use, it is only necessary to set the switch to the "Calibrate" position, rotate the sensitivity control for a full-scale deflection, and switch to the "Read" position. To use the instrument while adjusting or pruning antennae, or for adjusting link-coupled antenna tuners, you don't need any graphs (although it is possible to calibrate for s.w.r. and power). Just set the switch to the "Read" position and, with power in the antenna, adjust the antenna or the tuner for minimum meter reading.

If you want to make a kilowatt version, use a bigger box and RG-8/U or RG-11/U. The meter can be less sensitive (a 0-1 mA. meter will work well), or the pick-up section shorter, but the principles are the same.

If you have an extremely low-power transmitter, the forward readings on the 80 and 40 metre bands may be less than full scale, or even half scale, with the sensitivity pot. full out. This can be overcome by using a longer piece of co-ax for additional pick-up. You can coil up as much of the stuff as necessary, with no effect on the performance. However, a full-scale deflection isn't actually necessary to the functioning of the instrument, just so enough of a forward reading is obtained to allow a good comparison with the reflected reading.

PREDICTION CHART, JULY '59



SIMPLE SIDEBAND*

PARTS FIVE and SIX

LESTER EARNSHAW, ZLIAAX

THE ADJUSTMENT OF PHASING SHIFT EXCITERS

Though mainly concerning the two coil systems of obtaining the r.f. phase-shift, the following adjustments will be of equal value to those who use other systems providing you make allowances for the different means of obtaining the same end. The circuit of the two-coil system s.s.b. exciter is shown on page 4 of May 1959 "A.R."

Because I have long been of the opinion that all stations, whether a.m. or s.s.b., should have an oscilloscope, I am only discussing tuning methods using this versatile instrument. In any case, in s.s.b., a 'scope is practically a must. To back up my above statement, most checks given to a.m. Hams by observer stations, are on modulation percentage.

In addition to a scope you will require a simple tone oscillator. It need not be elaborate, but it must be free from harmonics. Fig. 1 shows the circuit of an oscillator which will cost but a few shillings though most likely the "bits and pieces" will be already about the place.

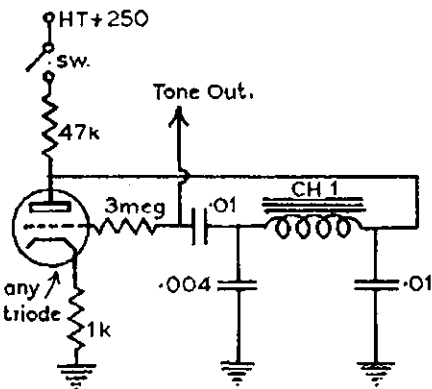


FIG. 1.

Fig. 1.—A suitable tone oscillator. CH1 may be the primary of an output transformer. The two condensers to ground at each side of CH1 may need different values to get the right frequency of tone.

An r.f. indicator consisting of a crystal diode and an r.f. choke will indicate the presence of carrier and will be an extremely useful gadget about the shack. A v.t.v.m. or field strength meter may be used instead if you wish.

Begin your adjustment by adjusting the wire wound 1k pot. in the cathodes of the 12AT7 to approximately the centre of its range. Turn the audio gain control down and apply all the normal voltages. Proceed in the following order:—

(1) Couple the link of your indicator to the oscillator coil L1 and adjust slug for maximum reading. Back off the slug a little on the high side to reduce crystal current. (Usual for crystal oscillators.) Rotate the two carrier pots., P2 and P3. If the oscillator stops, wind

out the slug a little more until reliable oscillation is obtained at all times at any setting of P2 and P3.

(2) Couple the indicator L2 and adjust for maximum on meter. Check again that the oscillator is not pulled out of oscillation.

(3) Couple to L3 and adjust for maximum reading. It will be noted that the reading will be maximum when the two pots. are near the ends of their travel.

(4) Couple the indicator to each of the tuned circuits in the following amplifier stages and adjust for maximum output.

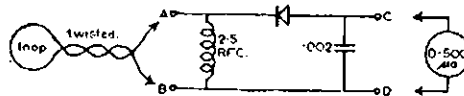


FIG. 2

Fig. 2.—By connecting the loop to A and B and a meter to C and D this instrument will indicate the presence of carrier. Connect an unknown a.c. source to A and B and you will get a comparative reading. Connect an antenna to A and you have a field strength indicator. Connect phones to C and D and you have a broadband crystal set.

(5) Leaving the indicator coupled to output stage, wind out carrier using first one balance control, then the other. Return again to the first control, then back to the second. Continued adjustment should completely eliminate the carrier. A receiver, when tuned to the frequency, will of course show the presence of signal. This will be received directly from the crystal oscillator. I mention at this stage that failure to balance out the carrier may be due to a number of causes. Usually it is either due to self oscillation in the amplifiers or alternatively inadvertent coupling between L1 and L2 and some of the later tuned circuits.

(6) Remove the crystal oscillator tube. Couple the tone oscillator to the top of the audio gain control. The frequency of the tone must be adjusted to around 1000 cycles to 1250 cycles, dependent on the demands of the audio phaseshift network used. Couple the horizontal and vertical plates either to the plates of the double triode following the phaseshift network or to the "hot" end of the secondary windings of T2 and T3. Adjust the pot. PI until you get a circle on the scope. Get this picture as near a circle as possible. Mark this potentiometer setting.

(7) Couple the scope to the r.f. amplifier stage; use the internal time base (50 cycles a.c. may be used if you make allowances for the non-linearity of the sweep and consequent squeezed-up picture at the ends of the trace).

(8) Adjust the slug of L2 to minimise ripple along the top and bottom of the pattern. Before adjustment, the picture may have looked like Fig. 3. Fig. 4 shows a partly adjusted exciter. The object is to get as little ripple as possible. After each adjustment of the L2 slug you must switch off the tone and balance out the carrier again. You will note that every other depression in the ripple is due to the presence of carrier.

(9) Switch to the other sideband by reversing the two leads from either T2 or T3. The ripple may appear larger now. Again adjust the slug L2. Try and get the ripple even on each sideband.

(10) Touch up the adjustment of PI to minimise the ripple. Switch sidebands and touch up the slug L2. Switch sidebands again and touch up PI. Keep doing this until you wear the ripple down. You will find that there is an in-between setting of the two controls which will give minimum ripple.

(11) Adjust the 1k pot. in the cathodes of the 12AT7 for minimum ripple. Go back over the previous measurements. The final picture should look like Fig. 5.

It is important that you do not favour one sideband. You will be favouring that sideband for one frequency only—the frequency of the tone. Here are a few points which may help out if you strike trouble:—

If you use the more common type of network available, such as the B. & W., etc., you must deliberately apply unequal audio input to get equal output. Pins 3 and 7 of the B. & W. type network require 2/7ths of the voltage input. Pins 1 and 5 receive the other 5/7ths of course. This you do with P1.



FIG. 3.

FIG. 4.

Fig. 3.—Carrier and unwanted sideband present.

Fig. 4.—Carrier suppressed. Unwanted sideband present.

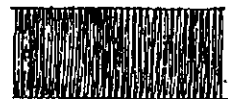


FIG. 5.

Fig. 5.—Carrier and sideband suppressed.

The two coils L1 and L2 must have the correct spacing. Although diode balanced modulators do not seem to be fussy about balanced amplitude of the two r.f. inputs, it is absolutely imperative that the phase relationship be

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correct. Therefore, if you use coils different in diameter from those I have suggested, you may have to play about with spacing.

Distortion in the audio amplifiers will cause ripple to appear on the pattern and you may worsen the sideband suppression in an effort to get rid of the ripple from the trace. The same applies if the tone is not a pure sine-wave. **Harmonic distortion gives ripple indistinguishable from that caused by poor sideband suppression.**

The balanced modulator output circuit must be tuned with equal condensers. When one balanced modulator tube is removed, you should be able to balance out the carrier with the other working potentiometer.

Though the adjustment of the phasing type exciter sounds complicated, it really is simple once you have done it a couple of times. I well remember my Grandma, when using the phone for the first time and having been told to ask for Central when she rang, said, "Hello! Is that the middle?" Now of course she uses the phone as though she was born to it. The moral is: Go over the operation a few times and you will discover little points and short cuts I am not able to tell you here. And you will build up a familiarity with the equipment. This will also prove quite conclusively, that sideband really is simple.



Fig. 6.—Ratio A—B.

1:5	14 db.	1:30	30 db.
1:10	20 db.	1:50	34 db.
1:15	24 db.	1:100	40 db.
1:20	28 db.		

THE ZL LINEAR

When I began this series, I expressed a desire to live up to the name I gave it—Simple Sideband. Although this has not always been easy because, naturally, certain portions of any form of transmission are difficult to define in simple terms, this time, in this particular article, I trust I will have hit the jackpot in simplicity.

Most generators of r.f. for transmission purposes require amplifiers of one form or other. For c.w. or high level a.m. this is no problem because almost any old amplifier tube connected up in almost any old manner will amplify a carrier. (The proof of this is the many c.w. and a.m. Amateur Stations in operation at the moment!) What matters if the loading is light or the grid drive is incorrect?; the tube working on the wrong part of the curve? What matter distortion of the r.f. waveform? So long as you are modulating the signal after it has been amplified it doesn't matter a scrap. But amplify an already modulated signal with any old amplifier operating under near-enough conditions and boy oh boy, are you going to have an argument with your brother Amateurs!

An audio amplifier is a linear amplifier—or should be—and within certain limitations most audio tubes will amplify s.s.b. Mostly the limits are those

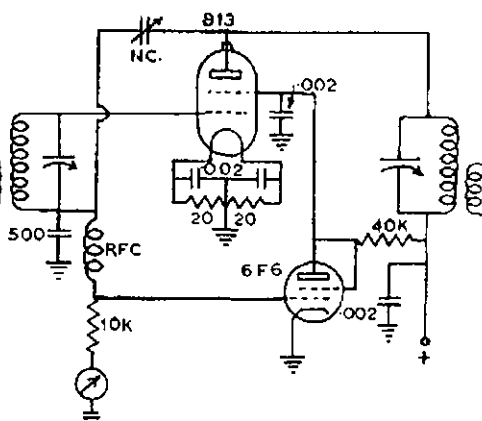


Fig. 7.—ZL Linear Amplifier.

imposed by frequency. So long as the audio tube is capable of operation at the higher r.f. frequency and is neutralised when the tube capacities would normally cause oscillation, you should be able to pinch the a.m. amplifiers from what will be your unwanted a.m. modulator and use them to put your s.s.b. on the map in a big way. If you should be using zero bias 807 modulators for example, there is no logical reason why you should not be able to use the same set-up to amplify s.s.b. Merely substitute tuned circuits for the transformers and pick up the QSL cards as they come rolling in.

One major difference between an amplifier that amplifies s.s.b. and one that amplifies audio, when the operation is other than Class A, is that in the latter case one must use push-pull tubes. But when amplifying s.s.b. signals in Class AB₁, AB₂ or Class B, one tube is sufficient. This comes about due to the flywheel action of the plate tank circuit which puts back the missing half of the cycle in exactly the same way as does a Class C stage.

Remember this, treat your s.s.b. signal like audio, operate your tubes as

you would if they were operating in your pet Hi-Fi amplifier and you'll get a lot of fun out of this exciting form of transmission.

But before I begin the story of the ZL Linear, you must have a scope to correctly set up for linear operation. Variable factors such as antenna loading make this an absolute necessity. If you are not loading the little old final the way it should be loaded; if you over-drive it; if you are using incorrect operating conditions—you have splatter.

To the best of my knowledge, the ZL Linear has not before appeared in print, though before long it is to appear in an American Sideband Manual. It is quite original only because no one else was damn-fool enough to try what I tried when first I discovered it. (I'm not going to discuss this point further!) But first I warn you that this amplifier does everything that the good book says you must not do. Linear amplifiers must have regulated bias supplies for example. They must also have regulated screen supplies. The ZL Linear has neither! In fact it has varying grid and screen voltages! It is quite simply a Class C type of final with clamp tube screen voltage control. Fig. 7 shows the circuit and you will recognise it as being the conventional c.w., a.m. amplifier. Several now have had a shot at explaining the operation of this linear and one or two have come up with ideas even more fantastic than the amplifier itself. My own ideas (which may well be incorrect) are as follows:

No signal: Clamp tube resistance is low and holds down screen voltage which in turn keeps the plate current at a low figure. The actual figure is dependant on the type of clamp tube.

With signal: Grid current with signal causes a voltage drop across the grid leak. This means that the final is developing its own negative bias and the amplitude of the bias varies in accordance with the signal producing it. This bias is also applied to the grid of the clamp tube which allows the clamp tube

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to unclamp, the screen voltage to rise, and the plate current to rise and accommodate the signal.

Reviewing the situation a signal applied to the grid allows the screen voltage to rise and this of course allows the plate current to rise. So we have a state which is purely automatic and the clamp tube is really operating as a gating valve.

There are one or two superior points about this method of operation which I think will appeal to many:

(1) May be used for a.m. without alteration to the circuitry. Just feed your r.f. into the grid and modulate in the normal manner. Don't forget this is actually an a.m. amplifier.

(2) Requires no bias supply.

(3) Requires no screen supply other than a simple dropping resistor.

(4) Practically no adjustment required unless you are pioneering a new tube type.

(5) Is the most easily adjusted and the most tolerant to mis-adjustment of any amplifier I have ever known.

Disadvantages (and it has one major disadvantage): In the event of the clamp tube failing, more than likely you will also be buying a final tube as well. This may be overcome in two ways, one by using two clamp tubes in parallel; or two, by using an overload cutout in the final plate supply.

Here are one or two conditions: The clamp tube must not clamp too heavily. It must allow the screen voltage to rise the moment signal is applied to the grid. This is quite important. I found that with most final tubes the 6Y6 was too severe in its clamping action and would not allow the screen voltage to rise until after considerable signal had arrived at the grid. This, of course, gives distortion at lower levels.

Here is data on operation of the 813 as a ZL Linear:

Plate voltage, 1,000 volts.
Grid leak, 10,000 ohms.

Screen resistor, 40,000 ohms.

Clamp tube, 6F6, 12A6.

Standing plate current, 40 to 50 mA.

With 3 mA. of grid current, with carrier wound in, or on tone modulation: plate current 120 to 150 mA.¹

On voice modulation plate current rises to approximately 100 mA. Different 813s have given values considerably different from these figures. Different clamp tubes will give different standing plate currents. The larger the standing plate current, although the power wastage in heat is higher, the better the linearity because the less the plate impedance of the final varies.

Values of grid and plate tuning condensers do not seem to be quite as critical as Class AB2 or Class B operation but in any case one cannot go wrong in using the Class B values. I use the following values which were worked out from the good book:

Plate tuning condenser:

80 mx:	240 pF.	in circuit capacity.
40 "	120 "	" " "
20 "	60 "	" " "
15 "	45 "	" " "
10 "	30 "	" " "

Grid tuning circuit:

Values same as above.

In order to use a 6Y6 clamp tube and to adjust the clamp action accurately, Ron ZL1ARH and Cliff. ZL2AHV both came up with the suggestion that by placing a potentiometer across the grid leak the clamp bias could be adjusted separately.

Although I have not applied this system to other tubes (other than a 6146), various stations on both 80 and 20 metres are using the system on 4-125As, 807s, and 1625s. Don Stoner, W6TNS, is at the moment playing with the system applied to a kilowatt final.

I mention, before shutting up shop, that there seems to be many who would

have it that the system doesn't work, that it splatters, that it shouldn't be on the air, etc., etc., but a Collins 75A4 just three miles away from this QTH gives an excellent bill of health. Further, two tones, a 1400 cycle and a 600 cycle, when fed into the exciter, show the following outputs: 1400 cycles, 600 cycles, 2000 cycles, 800 cycles, and away down, at approximately 30 db., the harmonic products! All of which means that the amplifier is "clean". Scope patterns are of course excellent. Like all amplifiers, it will of course overload, it must be correctly loaded (which means heavily), but otherwise it is about the easiest-to-get-going linear amplifier I have ever used.

In conclusion, I give a list of stations who have adapted the ZL Linear to suit tubes other than those used here. I am quite sure that these stations will be found ever-ready to give cut data concerning the particular tube types they use.

ZL2AHV—813.

ZL3BG—4-125A.

ZL2AVA—807s in parallel.

ZL1ARH—One of the double tetrode series with a QQE number, but very similar to an 829.

ZL1ND—KT88.

The 6146 I have found to be unsuccessful in this set-up. It appears that the screen does not exercise sufficient control of the plate current.

My thanks to those who have, over the last year, assisted in pioneering the ZL Linear, even though they often were not easily convinced that it would work. My thanks especially to John ZL2AG, who was the second station sufficiently daring to use the principle (to a 4-125A), and to ZL2AHV for the many tests he has himself conducted with it.

Next month I hope to discuss voice control and also show the system in operation at this station.

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VK2PV	All	54,752	175	48	68
VK2AKF	All	17,020	156	21	16
VK2APK	14	31,659	189	23	38
VK2OW	14	741	13	9	10
VK2CX	14	19,836	102	21	36
VK3XB	7	9,604	120	14	14
VK4BG	21	23,580	132	23	37
VK4XW	7	3,179	64	9	8
VK5NO	All	217,308	420	75	107
VK5JT	21	2,709	44	12	9
VK5MY	14	22,320	113	23	49
VK6RU	All	476,720	700	85	151
VK7UW	All	119,500	347	53	72
VK7JB	All	30,537	133	34	47
VK7KA	21	10,764	69	24	28

Phone—Single Operator

Call Sign	Band	Score	QSO	Zon.	Cnts.
VK2AKF	All	28,126	131	36	46
VK3HL	All	11,840	68	30	34
VK3MX	21	540	10	8	10
VK4BG	21	6,148	48	18	20
VK5AB	21	46,560	173	31	66
VK6RU	All	131,026	243	75	116
VK6CL	21	14,625	77	22	43
VK7WA	All	21,175	103	33	44
VK7LZ	All	16,985	81	35	44
VK7SM	14	5,006	55	17	19

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Conversion of the SCR522 Transmitter to 5 Metres

R. L. LEAR,* VK2ASZ

WITH the conclusion of the I.G.Y. close at hand and thence the close of the 6 metre band to our use, thoughts of many Amateurs will turn to greater use of the old 5 metre band as well as 2 metres, for local communication and for use in W.I.C.E.N.

Many chaps with 6 metre equipment will find no difficulty in converting that equipment to use on 5 metres, but this article is directed to those who have SCR522 equipment lying around as a result of the large issue of this equipment by the W.I.A. Circuits are available from Reg. Brooks, of Gosford, so that no trouble should be experienced by anyone in sorting out the mysterious innards.

First move in the conversion is to firmly grasp a pair of side cutters in your hand and snip out all the wires going to the relays at the audio end of the chassis. The relays can be removed and placed carefully aside. All the side tone circuitry may be removed if it is desired to use the modulator as it stands with a carbon microphone. However, I feel that the quality of modulation is not good enough to meet the standards of the usual run of Amateur Stations and a better idea is to use the good quality audio transformers in the 522 and construct a separate modulator using a good shielded enclosure and a good quality crystal insert. The difference is worth the trouble.

With the transmitter, mechanical changes to be carried out are as follows. The aerial plug is removed and two co-axial sockets are inserted in its place. This is to carry the aerial lead-in and the lead to the receiver used. One of the relays is mounted on the side wall away from the oscillator tube and acts as aerial change-over relay. A word of warning here. Check the relay contacts first as some of the relays are of the self-shorting type and have an internal connection to the frame of the relay.

The crystal sockets in the front of the transmitter are out of circuit until the relevant slide is in, thus closing the relevant switch contacts on the transmitter front. Easiest way here is to drill a small hole in the slide bracket near the left hand edge and then pushing in the first slide, and drilling a matching hole in the slide itself. A small screw will then hold the slide in place so that the first crystal socket is in circuit and able to be used.

An 0-1 ma. meter is installed on the front panel and connected at the back to the meter switch plug. All existing shunts in the set are adjusted for an 0-1 ma. movement.

WIRING CHANGES

- (1) Rewire heaters if it is required to use 6 volt tubes.
- (2) Shunt a 250 pF. condenser across the oscillator anode tuned circuit. (Note. This was to suit the 6450 crystal used here and will need to be varied to suit the crystal used in your station.)

(3) Remove coil from 12A6 anode circuit and replace with a 20-turn centre-tapped coil. (22 s.w.g. on $\frac{1}{2}$ inch diam. air wound.)

(4) Remove Ohmite ZO RFC's from grids of the 832 2nd harmonic amplifier. (Also remove note K if fitted. This is a capacitor from bottom side of coil to earth.)

(5) Remove 25K resistors from junction of 150v. bias line and bottom of chokes.

(6) Add two 15K or 20K resistors from 832 grids to bias line point.

(7) Remove Lecher lines from 832 2nd harmonic amplifier anodes.

(8) Unscrew c.t. position of lines and remove completely, then lift back shielded B+ line to 832 temporarily out of the way.

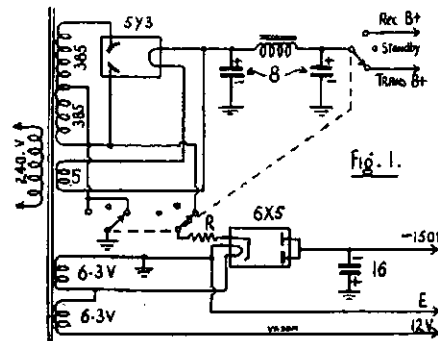


Fig. 1.—"R" is adjustable to give -150 volts from plates of 6X5 (approx. 10K ohms needed.)

(9) Connect the two 20 pF. grid coupling condensers from grids of final 832 to the stator plates of 1st 832 anode split-stator condenser.

(10) Wire coil of 11 turns (22 s.w.g. on $\frac{1}{2}$ inch diam. air wound) across the condenser and fold down between anode pins of tube. Connect folded back, shielded B+ lead to centre-tap of this coil.

(11) Remove final tank coil and substitute a 12-turn coil (20 s.w.g. on $\frac{1}{2}$ inch diam.) air wound with a gap in the centre of $\frac{1}{2}$ inch for coupling loop, already there.

(12) Put the g.d.o. over all tuned circuits and ensure that they will cover the required band. In my case, with a 6450 crystal, the line-up was 6G6 6450, 12A6 19.350 mc., 1st 832 58.030 mc., and 2nd 832 as straight out final on 58.030 mc.

POWER AND BIAS NEEDS

At this stage a short discussion on the power and bias requirements of the transmitter would be in order. In its original form the transmitter used a genemotor supplying 300 volts h.t. and minus 150 volts for bias. This is the easiest method to use. By making up a normal 385 aside power supply and using a separate rectifier off the same transformer to supply the requisite -150 volts. This is shown in the circuit of Fig. 1.

You will note that a separate switch section is used to cut the bias lead from the secondary of the transformer. This is essential and if it is not done, when the switch is put to the standby or receive position, a positive voltage of 150 volts appears at the output of the B+ point, even though the transformer centre-tap is open-circuit from ground. This allows the transmitter oscillator to work and creates a signal in your receiver on your own frequency which is most annoying.

For the diehards, however, who insist on using battery bias, you will see that the -150 volts is applied across a divider network consisting of R147 (1.8K) and R146 (6K) to feed the transmitter, and R152-3 and R152-4 (50K) and R145 (15K) to feed the modulator. A little maths. here will show that this provides approximately 20 volts negative to the modulator grids and approximately 37.5 volts negative to the transmitter bias line. If the resistors 152-3, 152-4, and 145 are removed and the two wires swung over as shown in Fig. 2, then by applying a battery voltage of -30 volts to the old -150 volt lead, these voltage requirements will be met.

The power requirements are as follows:—

Pin 1	-150 volts
Pin 2	+12 "
Pin 3	+300 "
Pin 8	earth "

The lead from pin 4 was transferred to a pin left vacant by the removal of the sidetone wiring and then 300 volts was fed to pin 4 from pin 3 and a lead run inside the transmitter up to the aerial change-over relay, through it and back to the transferred pin. This means that when the h.t. is applied to the transmitter the 300 volts flows through the relay coil and the drain from the pin 4 connection is just enough to give a 12 volt drop across the relay and pull it in smartly.

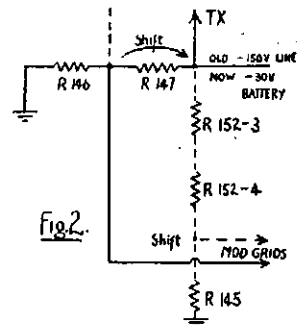


Fig. 2.—Alter wiring to that shown in solid lines.

TUNING UP

Tuning the transmitter is quite simple. With the switch on position 1 (50 ma. full scale), tune 1st left hand control to maximum. The 2nd control can be tuned for a dip on this position or on pos. 2 for maximum (100 ma. full scale). Position 3 (100 ma. full scale) (Continued on Page 13)

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VIF7 5.5 Mc/s. Sound Trap, Sound I.F. or Sound P.V.	13/9
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TECHNICAL TOPICS

BY PAT HAWKER (G3VA)*

CHOOSING CONDENSERS

PROBABLY as many fixed condensers are used in Amateur Radio equipment as all other components put together. And yet, all too often, we just search around in the junk box for the right number of "muffs" or "puffs", hope the rather dirty object we discover will stand the voltage, and reach for the soldering iron . . . and then wonder why results do not always match up with expectations.

Recently, there have been several useful articles on choosing condensers for particular applications (especially WIZEO/2 on the right types for an s.s.b. exciter in "QST", July 1958, and W5DF in "CQ", August 1948, on negative temperature coefficient condensers) while a good deal of information for designers appears in the standard reference books. Although a full scale attack on this subject would take more space than can be spared for "Technical Topics", it is felt that the following notes may at least indicate to newcomers some of the complexities involved.

Not so many years ago, condensers fell conveniently into three main categories: paper condensers for a.f. work; mica condensers for r.f. circuits; and electrolytics for smoothing. Today, there are dozens of different types, each with its own particular merits, and disregard of a designer's specification may jeopardise results and reliability.

For example, waxed cardboard paper tubulars are still widely used, but should be avoided for any position where a high insulation resistance is essential. After a few years' use—and much less than this in the tropics—their d.c. resistance may easily amount to only about 5 megohms. For many purposes this does not matter much, but, for instance, if used for intervalve coupling, may easily result in a positive bias being applied to the following valve; avoid them also for decoupling a.g.c. lines.

To reduce leakage there have been introduced many new types of containers which maintain an insulation resistance of some hundreds of megohms even at quite high temperatures (the effect of high ambient temperatures on the life expectancy of some type of condensers can be alarming.)

Then again, the type of voltage applied across a paper condenser affects considerably the ratings required. It is sometimes forgotten that high a.c. voltage peaks may occur in quite low power a.f. stages, and any condensers subjected to these voltages must be rated to withstand the peaks, plus any direct voltage which may be across them. Condensers subjected to continuous a.c. stress—for example chassis, aerial and earth isolating condensers in a.c./d.c. equipment, and those for the suppression of interference in motors, etc.—should always be rated specifically for a.c. working (roughly speaking an a.c. working of 300 volts is about equivalent to a 1,000 volt d.c. rating). For such condensers, petroleum jelly or

liquid impregnants are much better than wax. Special types of condensers have been developed for electrical interference suppression, and the use of conventional types for this purpose may prove highly dangerous, as their failure can result in the outer casings of domestic appliances becoming "live".

Moulded mica condensers are still widely used for r.f. purposes, although the smaller size of the silvered mica types has made these very popular. As the power factor of either type of good quality mica condenser is low, they can handle quite high transmitter currents. Silver mica types are very stable over long periods and should therefore be used for tracking and padding in tuned circuits.

Ceramic condensers have taken over many of the tasks formerly allotted to mica condensers, except where a very high order of stability is necessary. The so-called high-permittivity (high-k) types are useful and economical for most r.f./i.f. decoupling, and similar purposes. In the low-permittivity class, deliberate use can be made of their sensitivity to temperature variation to

CONVERSION OF SCR522 TX

(Continued from Page 11)

should be tuned for maximum on 3rd control and then for dip on 4th control. Check on position 5 that these last two controls give maximum reading (2 ma. full scale) of grid drive and it is quite normal to send the meter hard over off the scale which will do no harm.

If an r.f. indicator is fitted to the transmitter in the final enclosure, then position 4 (1 ma. full scale) will enable all controls to be peaked for maximum r.f. output.

A simple half wave dipole directly fed with 50 ohm co-ax. has given quite good results from here, but a good 5 metre 5 element beam should produce quite startling results.

A few tips on the transmitter would not go amiss here. The drain on the bias battery in the system shown is about 0.5 ma. and it would be a good idea to install a switch to cut it when not in use.

In the original transmitter, modulation is applied to the first 832 screens as well as to the final. The quality can be improved by removing this modulation and this is done by removing the yellow lead from the junction of the two 40K resistors near the final 832 under the chassis and connecting it to pin 2 of the modulation transformer or to the unmodulated h.t. on pin 3 of the power plug. Leave the blue wire in place as it supplies modulation to the final 832 screens.

Many of the points in this article will be of use to anyone who is converting the transmitter for 2 metre operation also and it is very easy to arrange to have two of the transmitters going on 2 and 5 metres, both operating off a common modulator as is the case at this QTH.

I wish to thank Wal VK2MZ for the great assistance he has rendered in this conversion and it was he who did most of the hard work involved in it.

See you on Five, chaps!

3.5 Mc. BAND CONTEST

BY VK9

The Contest is being organised by the Council of the Papua and New Guinea Division of the W.I.A. as an effort to encourage the use of the sparsely occupied 3.5 Mc. band. No prizes are being offered for this Contest, but QSL cards will be sent by those stations contacted. As QSLs from Papua and New Guinea on 3.5 Mc. are scarce at present, it is hoped that many Amateurs will take this opportunity to acquire one of these cards.

The Contest will be run from 1st to 31st July, 1959, and will be for either phone or c.w. or both. Only one contact per station (either phone or c.w.) per day will be permitted.

provide compensation for changes which would otherwise occur in tuning circuits during warming up. There are few modern television and f.m. tuners which do not make use of this characteristic to keep frequency drift within permissible limits (admittedly, these tend to be wide by communications standards), and correct use of such condensers can greatly reduce drift in receivers and v.f.o.s. Incidentally, even professional designers tend to determine the type of drift correction condenser required in a circuit largely by "try it and see" work on prototypes, so the Amateur need not be discouraged. By using one of the N750 (i.e. 750 part/million/degree Centigrade) types the value of this condenser can usually be kept a small proportion of the total capacity across the tuned circuit. With some ceramic condensers, excessive heat from a soldering iron can cause permanent damage.

Electrolytics have improved beyond all recognition over the years; a remarkable number of "muffs" can now be contained in a very small space, and will continue to stay there happily for many years (it is not so long since a respectable explosion in a broadcast receiver at G3VA sent the contents of an electrolytic far and wide). At least one broadcast receiver has 116 μ F. of smoothing and 300 μ F. is a common figure for television sets; a transistor receiver may have 200 μ F. across the battery. But even today it is worth remembering that the shelf or junk box life of an electrolytic is much less than when in regular service. After some months out of use, the insulation resistance falls sharply, and the condenser then requires re-forming (or re-ageing as it is often called) before putting into use. Otherwise, there may easily be a blown condenser and, more likely than not, a dead rectifier valve. The usual method of re-forming a condenser is to apply the normal d.c. working voltage through a limiting 10K ohms resistor until the leakage current falls to a low figure.

Looking over these notes, it is realised that such important points as series inductance, tolerances, ripple currents, and the like, have had to be omitted; but at least we may have shown that there is more than just a couple of lines on a diagram to the modern fixed condenser, and that we can no longer ignore specified types with impunity.

* Reprinted from R.S.G.B. "Bulletin," Nov. '58.



DRIFT TRANSISTORS

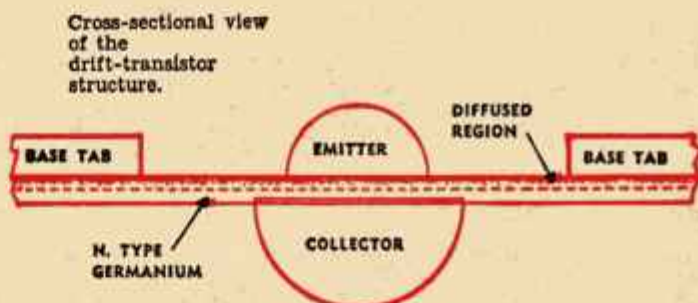
A NEW CONCEPT IN DESIGN FOR HIGH-FREQUENCY APPLICATIONS

NOW COMMERCIALY AVAILABLE FOR HIGH-FREQUENCY APPLICATIONS IN INDUSTRIAL AND ENTERTAINMENT APPLICATIONS. YOUR BEST CHOICE FOR HF TO VHF.

ABOUT THE NAME DRIFT

The word DRIFT is a well-known term in physics used to describe the motion of charged particles in ionized gases under the influence of an impressed electric field. Charged particles move much faster in a given direction by "drifting" in an electric field than they can by random diffusion in the absence of an electric field. In keeping with the analogy between the drift phenomena in gaseous discharges and in semiconductors, the word 'Drift' is applied to transistors which incorporate a "built-in" accelerating field.

The electric field in drift transistors, which literally propels the charge carriers from emitter to the collector, is achieved by the graded distribution of an impurity in the germanium base region. This "built-in" accelerating field, a feature not available in conventional transistor designs, results in greatly decreased transit time and therefore a much higher upper frequency limit.



THE DRIFT PRINCIPLE

The successful use of the drift field principle lies in the critically accurate control of impurity distribution in the base region during manufacture. The density of the impurity distribution in the base decreases exponentially from very high values at the emitter to low values at the collector. The impurity distribution introduces a constant electric drift field which accelerates (propels) the charge carriers through the base region. Compared with the performance of conventional transistors, in which the charge carriers move by means of diffusion—a comparatively slow process because of its random nature—the acceleration of charge carriers by the drift field represents a major improvement. Because of the accelerating field in drift transistors, the transit time of the charge carriers is substantially less than the transit time of the carriers in a conventional transistor. This results in greatly increased high frequency performance.

"DRIFT" TRANSISTORS PROVIDE SUPERIOR PERFORMANCE

The high impurity density in the base near the emitter results in a *low base resistance*, while the low impurity density near the collector contributes to *low collector capacitance* and results in a high collector breakdown voltage. The extremely low value collector capacitance makes neutralization unnecessary in most applications and permits the design of simple and economical circuits.

SHIELDING MINIMIZES INTERLEAD CAPACITANCE

The combination of low base resistance, high collector breakdown voltage, low collector capacitances, and short transit time, makes possible the design of high-power gain, high-frequency circuits with excellent operating stability and good automatic-gain control capabilities over a wide range of input signal levels.

The drift transistors described here have four flexible leads and are hermetically sealed in metal cases. The fourth lead is connected to the case internally to minimize interlead capacitance and reduce coupling to adjacent circuit components. These important design features contribute to the usefulness of drift transistors in high-frequency circuits, particularly in those industrial and commercial applications where low feedback capacitance is an important design consideration.



DRIFT TRANSISTOR DATA CHART

TYPE	CLASS OF SERVICE	MAXIMUM OSCILLATOR FREQUENCY	TYPE	CLASS OF SERVICE	MAXIMUM OSCILLATOR FREQUENCY
2N247	RF Amplifier	132 Mc.	2N544	RF Amplifier	132 Mc.
2N274	RF Amplifier	132 Mc.	2N640	Automobile RF Amplifier	132 Mc.
2N370	RF Amplifier	132 Mc.	2N641	Automobile IF Amplifier	132 Mc.
2N371	RF Oscillator	132 Mc.	2N642	Automobile Converter	132 Mc.
2N372	RF Mixer	132 Mc.	2N643	High Speed Switch 20 Mc.	—
2N373	IF Amplifier	132 Mc.	2N644	High Speed Switch 40 Mc.	—
2N374	Converter	132 Mc.	2N645	High Speed Switch 60 Mc.	—
2N384	VHF Amplifier	250 Mc.			

FEATURES OF DRIFT TRANSISTORS IN HIGH-FREQUENCY APPLICATIONS

- low base resistance
- high output resistance for increased gain
- low feedback capacitance
- high alpha-cutoff frequency
- controlled input and output characteristics
- controlled power gain characteristics to insure unit-to-unit interchangeability
- rugged mechanical construction
- excellent stability
- exceptional uniformity of characteristics

DESIGN BENEFITS INCLUDE:

- high input-circuit efficiency
- excellent high-frequency operating stability
- good signal-to-noise ratio
- good automatic-gain-control capabilities over a wide range of input-signal levels

These drift transistors are germanium p-n-p alloy-junction types which are specifically designed and controlled for operation in mass-produced electronic equipment operating at frequencies up into the vhf band.



AMALGAMATED WIRELESS VALVE CO. PTY. LTD.

47 YORK ST.

SYDNEY

GELOSO V.H.F. V.F.O.

The last few years has seen such an enormous increase in the activity on the v.h.f. bands of six metres and two metres that a v.f.o. is a necessity for the up-to-date station that expects to be in the running during the DX openings. Even for local contacts the v.f.o. will be found very useful during round table conferences or to locate yourself in a clear spot in the band when local activity is running high.

The Geloso Signal Shifter No. 4/103 will provide a neat and compact exciter unit which will cover the full two metre band (144 to 148 Mc.) with switching facilities to change to crystal control if desired. The unit will provide adequate drive to run an 832 or a 2E26 to their full ratings provided the h.t. supply does not fall below 270 volts. A power supply rated at 300 volts 80 mA. and 6.3 volts at 2.35 amps. is recommended.

An examination of the circuit in Fig. 1 will show that the 5763 is common to both crystal and v.f.o. circuits, but with either arrangement only one 6CL6 and one half of the 12AT7 is in operation at any time.

Firstly, considering the exciter with the v.f.o. The first 6CL6 consists of an oscillator doubler operating on a fundamental frequency in the 18 Mc. region and having a 210 volt regulated screen supply. The output is doubled in the plate circuit of this tube to 36 Mc.

The 36 Mc. output is capacitively coupled to one half of the 12AT7 which operates as a further doubler with a 300 volt plate supply and provides a 72 Mc. output.

The output from the 12AT7 is then capacitively coupled to the 5763 which operates into a series resonant plate circuit at 144 Mc.

With the switch in the crystal control position, the cathodes of the 6CL6 and the half of the 12AT7 previously used, are opened, and the remaining 6CL6 and the other half of the 12AT7 are brought into operation.

Although a 12 Mc. crystal is specified for the oscillator doubler, the more common 8 Mc. crystal may be substituted and the stage operated as a tripler without any further alterations or adjustments.

The 24 Mc. output from this 6CL6 oscillator doubler stage is capacitively coupled to half of the 12AT7 which is operated as a tripler with an output on 72 Mc. This 72 Mc. output is then capacitively coupled to the 5763 which operates as a doubler to 144 Mc. as before.

Facilities are provided on terminal 4 of the terminal strip to measure the drive to the 5763 doubler.

A series tuned link is provided to couple the output to the co-axial socket mounted on the rear of the chassis. Also a socket is provided at the rear of the chassis for a balanced output if desired.

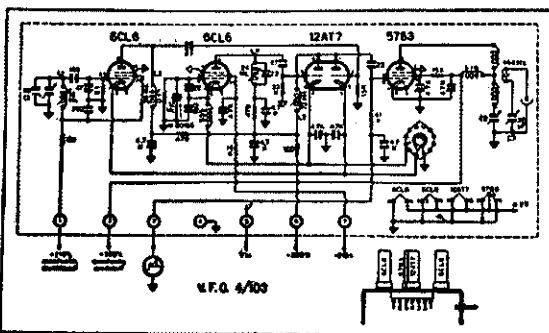
The usual quite large and handsome Geloso dial is provided to enhance the appearance of the unit. The scale,

graduated from 144 Mc. to 148 Mc., is 8 inches long, it is however not linear; at the 144 Mc. end of the band $\frac{1}{4}$ inch represents 100 Kc., whereas at the 148 Mc. end of the band $\frac{3}{16}$ inch represents 100 Kc. This of course is taken care of in the graduations. An outer linear scale in red is graduated 0-100.

The chassis is very lightly constructed and unless care is taken to mount it rigidly on a solid main chassis, trouble will be experienced with vibration effecting the frequency when v.f.o. controlled. Mechanical rigidity is important with v.f.o.'s. having a fundamental frequency as high as 18 Mc.

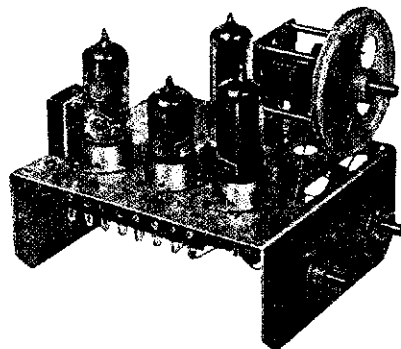
The 5763 doubler may be supplied with modulated h.t. and the exciter may then be used as a complete low power transmitter.

The unit upholds the tradition that the Geloso people have established in



providing equipment of a satisfactory standard at a reasonable price. The exciter will enable the Amateur to build a transmitter for two metres that can operate with v.f.o. or crystal control at the flick of a switch and having an appearance which should even appeal to the XYL.

We are indebted to R. H. Cunningham Pty. Ltd. for making one of these units available for test.



SILENT KEY

It is with deep regret that we record the passing of:—

VK3HT—D. G. Britt.

VK3ZBD—W. I. Dawson.

(use writing paper only, not emery), clean all contacts associated with the rotary inductance, carry out modifications 1a, 1b and 1c, plus 2a and 2b if necessary. Then you will have performance equal to the best of them.

Remove all traces of oxidation from the rotary coil and wheel. Slacken the screws which hold the leaf springs and increase their tension. This causes the wheel to press more firmly on the coil.

MECHANICAL CONSIDERATIONS

If you want to experiment further, these mechanical considerations are given as a guide.

Ease of control and finer tuning can be obtained by the following method. Remove the small knob from the frequency control and replace with one of larger diameter. This provides easier and smoother control. An alternative is to remove the knob and fit a small planetary type reduction with a suitable pointer and scale. There are several screws adjacent on the panel for mounting. This gives very fine adjustment and lots of bandspread on the scale which can be accurately calibrated. The one in use was calibrated against a 100 Kc. oscillator and 10 Kc. multivibrator. The scale is so open, it is easy to interpolate the 5 Kc. points.

Antenna terminal can be replaced with a co-axial connector.

It has been suggested that the r.f. metering transformer absorbs useful power. It is not of any great use in tuning as most Amateurs rely on p.a. plate current readings.

The r.f. metering transformer is easily shorted out by a piece of heavy gauge tinned copper wire soldered between the lead to the contact on the rear end of the rotary inductance and the transformer. This is easier, quicker and much less messy than attempting to remove the transformer.

The modifications, both electrical and physical, which can be applied to these ubiquitous little sets are limited only by the imagination, time and tenacity of purpose of the operator. It has been the object of the Committee to sift, test and present in a brief form, the main ideas for quick and easy results, bearing in mind the old saying, "You can't make a silk purse from a sow's ear."

In conclusion, here is one final thought. For those who are interested in emergency networks where it is advisable to keep equipment at least outwardly standard, the removal of drop cords could be opposed. In emergency work it is advisable for equipment to be interchangeable and the use of a multiplicity of plugs and sockets could prevent the use of equipment in certain circumstances.

This list of modifications has been made possible through the interest and co-operation of the following Amateurs: VKs 2OU, 2ACB, 2AEE, 2ASF, 3CN, 3OH, 3OM, 3PE, 3PZ, 3RN, 3UW, 3ZX, 3AAK, 3AHN, 3AIJ, 3ZCB, 5EM, 5KH, 7JB, 7TT.



Yes sir!

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**TYPE W 99
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- ★ Patented construction of patterned metallized paper allows extremely small size for miniature applications.
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- ★ Available for A.C. and D.C. working.



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- ★ Metallized paper construction with compact size for applications where space is limited.
- ★ Wide range of values up to 2 mfd.
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- ★ Overlapped foil construction resulting in self inductance of extremely low value.
- ★ Connections bonded to foil by special process ensuring low resistance at high frequencies.
- ★ Tough moulded casing providing clean engineering finish and wide range of operating temperatures
- ★ Available in a wide range of preferred values up to 1,500 volts D.C. working.



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Agents in all States

AE21

BOOK REVIEW

"THE RADIO HANDBOOK"

The frontispiece of the fifteenth edition carries the claim: "The standard of the Field for Advanced Amateurs, Practical Radiomen, Practical Engineers, and Practical Technicians."

The previous edition contained 31 chapters on all aspects of Radio and Electronics. This edition contains no fewer than 34 chapters; the additional three chapters have been added without increasing the U.S. price. The added chapters are "High Fidelity Techniques", "Electronic Computers" and "R.F. Feedback".

The existing chapters have been completely re-written where necessary and a total of 40 new pages added. Constructional articles are short, but complete enough for experienced persons. All the equipment described has that thoroughly engineered, commercial appearance for which "Editors and Engineers" have become famous.

I will not bore you with a lengthy description of everything in this book, but I consider that some of the highlights are well worth mentioning. For some time now I have considered that a "turret tuner" from a television set could become the basis for a good Amateur receiver and pages 540 to 547 contain the description of an advanced receiver using such a turret. Local Amateurs would find it hard to obtain the mechanical filters used in the second i.f. of this receiver, but crystals for cascaded half lattice type filters can be obtained and should yield very similar results.

This edition of the "Radio Handbook" also includes a number of constructional articles on specialised single band "Transceivers" in addition to the more conventional equipment.

Our copy from McGill's Authorised Newsagency, 183 Elizabeth St., Melbourne. Price 85/6, plus 2/- postage.

"MOBILE RADIO TELEPHONES"

by H. N. Gant, A.M. Brit. I.R.E.

This book has been written to assist company executives in choosing the right type of equipment for v.h.f. mobile radio communications. It explains the difference between a.m. and f.m. systems and enumerates the advantages and disadvantages of each. Equipment for both the 80 and 160 megacycle bands are discussed and also the procedures necessary to obtain a licence in Great Britain. Here in Australia, of course, applications for licences are made to the P.M.G.'s, Department.

Block diagrams and circuits of typical equipment are reproduced and used to describe the operation. Since the book is not intended for constructors, there is insufficient detail given for Amateurs to reproduce the equipment described. It is an excellent little publication and can be thoroughly recommended to persons contemplating the installation of a mobile radio system.

Our copies from Technical Book and Magazine Co. and McGills Newsagency, Melbourne. 34/9 plus 1/- postage.

"CQ" NEW MOBILE HANDBOOK

If you are contemplating some mobile operation, here is the very book you have been looking for. Every phase of mobile work is fully covered.

Let's run through the contents list just to see what there is. First of all we meet the automotive ignition system. Included is information on adjusting regulators and how to take care of your car battery. This is very useful, even if you are not interested in mobile operation.

Next comes mobile power supplies with plenty of information on vibrators and genemotors.

Chapter three is entitled "Mobile Receivers", but this is only half the story. There are converters of all types. How to use the "Command" Receiver. Two metre converter and receiver and five pages on direction finding for the hidden transmitter boys.

One of the really important adjuncts to mobile reception is a good noise limiter and in chapter four you will find plenty to choose from.

The transmitter chapter should suit all tastes. Modulators of all types, transmitters from five watts up to sixty watts, and of course full treatment on "Command" transmitters.

Single sideband is taken care of in chapter six. Three transmitters are described, all of which look good for home work as well as mobile.

Antennae are the subject of chapter seven. Theory of design and operation as well as practical design are fully covered.

To conclude, several pieces of handy test gear are described that will help you get the most out of your mobile station.

Well there it is! By far the best all round manual on mobile operation we have yet seen.

Published by The Cowan Publishing Corp., New York. Price in Australia 35/- plus 1/6 postage. Our copies from McGill's Authorised Newsagency, 183 Elizabeth St., Melbourne; and The Technical Book and Magazine Co., 295 Swanston St., Melbourne.

LOUDSPEAKERS

By G. A. Briggs

This is the fifth edition of a book on a subject of vital interest to anyone in the Radio-Electronics field.

This man, who is an acknowledged authority of world repute, deals expertly with his subject from its modest beginnings to these modern days of hi-fi and stereo.

Our copy from McGill's Authorised Newsagency. Australian price 29/6 plus 1/6 postage.

TUBE AND SEMICONDUCTOR SELECTION GUIDE, 1958-59

Compiled by Th. J. Kroes

This new addition to the Philips' Technical Library is designed to enable the user of electronic tubes and semiconductors to quickly determine which tube or semiconductor is to be preferred in

different cases, to do this a series of tables are used as follows:

1. Philips' manufacturing ranges and their suitable equivalent types, giving type numbers.
2. Tubes grouped according to their most important properties.
3. Tables of types which should preferably be used in new apparatus.
4. Tables of tubes which should exclusively be used in existing apparatus.
5. Tables of tubes which may be used for replacement of obsolete tubes.
6. Descriptions of type-number systems and data of a number of tube bases.
7. Data of diodes and transistors.

Texts of the tables are printed in English only, translations of these texts in French, German and Spanish are given.

This book is another Netherlands production in the series of Philips' Technical Library and is available from Philips Electrical Industries Pty. Ltd., 69 Clarence Street, Sydney. Australian price: 13/-.

"CQ" ANTHOLOGY

The Best of "CQ" 1945-1952

This volume re-publishes in book form a series of the best articles published in "CQ" over the period mentioned. The articles have been chosen by Amateurs from all over the world as they are the people who have sent the numerous requests for information to the publishers of "CQ".

It contains a wealth of information that will be useful to old-timer and beginner alike, and is well worth the modest sum of 20/9 plus 1/- postage being asked by Mc. Gill's Authorised Newsagency and The Technical Book and Magazine Co. of Melbourne.

CHANGE OF ADDRESS

W.I.A. members are requested to promptly notify any change of address to their Divisional Secretary, not direct to "Amateur Radio."

DUIPAR TO OPERATE AT 10th WORLD SCOUT JAMBOREE

During 17th to 26th July a special world event will take place in the Philippines—the 10th World Scout Jamboree. It will be ten days of fun and adventure in fellowship and friendship with Boy Scouts from 69 countries of the free world participating. The scene will be at the beautiful Makiling National Park in Los Banos, Laguna, about 30 miles south of Manila.

The Philippine Association for Radio Advancement (67 Espana Extension St., Quezon City, Philippines) will put up an Amateur Radio Station and operate every hour on the hour during the entire period of the Jamboree under the call sign of DUIPAR on the following bands: 80, 40, 20, 15, 10, 6 and 2 mx.

The station DUIPAR will issue special commemorative QSL-Certificates for each and every contact established to commemorate this rare event in their country.

AMATEUR CALL SIGNS AMENDMENTS FOR APRIL 1959

NEW CALL SIGNS

VK— Australian Capital Territory
1JE—J. H. Edwards, 60 Ormond St., Turner.
1VV—R. M. Marsden, Canberra Ave., Kingston.

New South Wales

2BK—K. W. Jeffcoat, 180 Wellington St., Bondi.
2PI—W. Marsh, 188 Steyne Rd., Saratoga.
2AOC—R. J. Brown, Childo St., Byron Bay.
2ATI—J. E. Shrubbs, 33 Kingsley St., Byron Bay.
2ATX—I. E. Huser, 47 Victoria Ave., Concord West.
2AUK—R. R. Butler, Black Forest, Bingara.
2AYG—P. Gresser, Cr. Powderworks Rd. and Merridong Rd., Narrabeen North.
2ZBS—W. J. Steuart, 57 Cooks Av., Canterbury.
2ZGT—G. K. Trevitt, 2 Hassans Walls Rd., Lithgow.
2ZHJ—J. W. Hutchison, Flat 2, "Womboy," Edward St., Wagga.
2ZJR—R. J. Rugg, 12 Roslyn St., New Lambton.
2ZKP—L. K. Phillips, 178 Trongate St., Granville.
2ZMW—C. M. Wright, 11 Miowera Rd., Turramurra North.
2ZOL—O. Longfield, 53 Illawarra St., Carlton.

Victoria

30D—D. D. Watson, 64 Newcastle St., Preston.
3ZDE—R. A. Ellis, 16 Chinnick St., Reservoir.
3ZDX—J. McEwen, 28 Flowerdale Rd., Glen Iris.
3ZHA—A. L. Heath, Main Rd., East Eltham.
3ZHB—W. J. Henry, 49 Kensington St., South Yarra.
3ZHJ—P. J. Jackman, 16 Vears Rd., Ashburton.
3ZHS—C. R. Saunderson, 5 Hughendon Rd., East St. Kilda.
3ZIA—B. C. Aeberli, Anzac Rd., Mt. Macedon.
3ZIS—S. M. Mackereth, 26 Derby St., Camberwell.

Queensland

4ZCC—M. C. Butler, McMullen Rd., Brookfield.
4ZDL—D. E. Laver, 28 Hicks St., Mt. Gravatt.

South Australia

5ZDQ—E. J. Patching, 18 Golden Glow Ave., Underdale.
5ZDR—M. J. McMahon, 25 Branksome Tce., Dover Gardens.

Western Australia

6CW—C. C. Patchett, Filnt St., Wyalkatchem.
6ZCA—T. H. Mosel, 31 Nelson St., Inglewood.
6ZCE—K. J. Kosina, 99 Middleton Rd., Albany.
6ZDS—R. K. Graham, 40 Hensman Rd., South Perth.

Territory of Papua and New Guinea

8JR—J. Rutherford, C/o. Posts and Telegraphs Department, Port Moresby.

Antarctica

0DS—D. Smith, Macquarie Island.

CHANGES OF ADDRESS

VK— New South Wales
2HU—R. H. T. Yuille, 159 Mona St., Granville.
2IG—L. J. M. Bone, 2 Waratah St., Eastwood.
2MD—R. M. Cumming, Lot 6, Newton Rd., Blacktown.
2MJ—A. J. T. Crisp, 58 Greenacre Rd., South Hurstville.
2OS—I. N. C. Crisp, 6 Glenroy St., Thornton.
2OZ—W. E. Dixon, Evans Pde., Glenbrook.
2ACW—L. R. Hawkins, 13 Allen Rd., Blacktown.
2AJC—B. J. Eve, 125 Pentecost Highway, Turramurra.
2AMV—J. A. Meagher, 26 Bandon St., Forbes.
2AUT—G. Taylor, C/o. Mrs. Norman, 535 Canterbury Rd., Campsie.
2ZAN/T—K. N. North, 189 Stewart St., Bathurst.
2ZCO—A. E. Cook (Mrs.), 46 Liverpool St., Cowra.

Victoria

3GO—R. C. G. McGowan, 40 Williams Rd., Blackburn.
3JK—J. K. Herd, Portable, "Kinta," 6 Balcombe St., Mornington.
3QY—C. W. Richardson, 1152 Nepean Highway, Cheltenham.
3AZJ—D. G. G. Johns, 21 Nioka St., Chadstone.

Queensland

4UN—R. J. Scott, "Anthony's Wood," Patricks Rd., Grovely.
4ZAT—T. R. Cuttle, North St., Brilbie Island.
4ZCE—K. M. McKay, Yandina Rd., Nambour.

South Australia

5AP—H. R. Hodgson, 28 Carroll Ave., Kilburn.
5FT—F. K. Tapley, Government Rd., Yatala Vale.
5ZAC—K. J. Skewes, 15 Hutchinson Ave., Risdon Park, Port Pirie.

Western Australia

6HK—D. E. Graham, Lot 920, Purdom Rd., Wembley Downs.
6KV—D. T. Lysle, Flat 3, 10 Smith St., Highgate.
6RO—B. J. Sorley, 40 Williams Rd., Hollywood.
6SK—A. A. Skinner, 104 Addis St., Kalgoorlie.
6ZBA—J. R. Bartlett, 22 Queens Cres., Mt. Lawley.

Tasmania

7ZAG—W. G. Grewling, 4 Mimosa Court, Berriedale.

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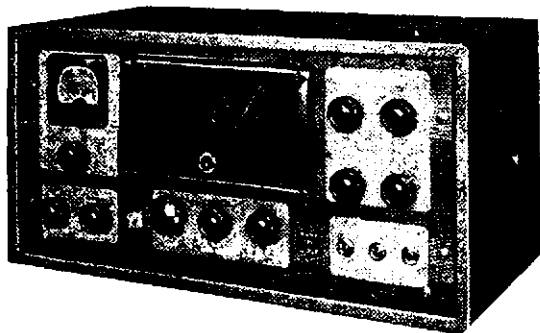
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VHF

Frank P. O'Dwyer, VK30F
190 Thomas Street,
Hampton, Vic.

Editor "A.R." Dear Sir,

After reading the v.h.f. notes in the May issue of "A.R." I had another look at the cover to make sure it was not the April issue. As it was not, I can only assume that the remarks on Tasmania's appointment as Federal Contest Committee were made seriously and not meant as a joke.

Anyone who accepts office in the Institute, or any other body, must expect and accept justified criticism, but it surely is a new departure to criticise the actions of a committee before it has even been convened. The anonymous VK2 is entitled to his opinions, even if we in Tasmania consider them derogatory, but it certainly is not in the best interests of the Institute to publish them in the editorial content of our journal.

However, it is not too late yet, the way is still open to have this "tragedy" rectified. This Division was asked by Federal Executive to accept the functions of the Contest Committee when it was relinquished by South Australia. However, as far as I know, the appointment has not yet been ratified. Therefore, it is not too late for the N.S.W. Division, or the V.h.f. Section of it to come forward and offer to take over the F.C.C. and, in this event, Tasmania would, I am sure, be only too happy to relinquish the somewhat dubious honour.

—K. E. Millin, Hon. Secretary,
Tasmanian Division, W.I.A.

The above letter is the most welcome ever received, more important it is better than any other ever quoted here. It is the practical proof that the W.I.A. has a very vital core of enthusiasts who are the antithesis of the bulk of the members who attend meetings, maybe collect QSL cards, pay varying degrees of interest to whatever is going on, who earbash at the slightest opportunity and who are quite prepared to allow someone else to carry out the onerous duties, both executive and odd job, which allows the W.I.A. to function both in the Divisions individually and as a unit through F.E. While this living core remains, undoubtedly there is such in each Division, then the W.I.A. will continue to function as a living body prepared to fight for its rights and at the same time keep its own house in order. It is the best answer to those who claim that the W.I.A. is a dead body, that those who run it are a lot of dead heads, that they wouldn't know how to fight for their rights if they had to.

The quote of the letter referred to by VK7 (May 50 Mc. Notes, V.h.f. page) was not directed by the writer at VK7. He mentioned another Division altogether. I accept the responsibility for the change made. Unfortunately my wisdom was on the negative side, a re-reading of the quote on my part made me see it in the same light as VK7. This was never intended. As the original writer of the letter was not at fault, I ask VK7, as a Division, and those individual members who may form the F.C.C., to accept my apology for the first line of the quote. I offer my apology also to the VK2 Division and the writer of the letter. Having come to the W.I.A. with the A.R.T.L. when that body, in the interests of Amateur Radio in VK, fused with the W.I.A., and having remained active ever since, I cannot see the point in sniping at any member or Division at this late stage, so weakening the body as a whole.

The remainder of the quote is a general expression of opinion which may be heard on the 50 Mc. band at any time from innumerable stations. The R.H.C. rules are a great talking point and one in the forefront of discussion all the time. Most of us wish that we were at some other place most of the time, e.g., the rest of VK on VK4 to have a crack at the Ws and other DX; the east coast boys in the west, so that they could have a try for ZS; the VK4s in VK3 so that they could make full use of 144 Mc. during the Contest, and so on. We Hams are never satisfied.

As it is, the R.H.C. is not on 50 Mc. alone. Let us look at 144 Mc. 144 Mc. scores many points for VK3 in that they can use the band to work VK2, 5 and 7 if conditions are right. But where does that leave the other Divisions? Southern VK2 can work VK3, whilst Sydney

in the past was linked on one occasion with ZL. VK3 work VK2, 5 and 7; VK4 have the dubious honour of working DX on 50 Mc. (missing but for a couple of contacts during the last contest period), but nowhere on 144 Mc. VK5 can manage VK3 and 7, on a couple of break-throughs in the past they have swapped sigs with VK6, but that is not the regular happening, and these openings were VK6's only DX. VK7 can contact VK3 and 5, whilst in VK9 it is going to take a lot of painstaking work before they crack the 144 Mc. DX barrier.

That gives some idea of the problem facing F.C.C. located in any Division. The geographical factor affecting all Divisions and parts of Divisions on the bands used. Quite frankly, my own personal opinion is that VK3 is the favoured Division at present. But whoever wins or wherever he may be located, a lot of time, energy and concentration is required on the part of the winner and he has earned his win the hard way.

Another factor is the period of the contest. Originally brief, the period was extended. This year for the first time, the complaints are that it is too long. The opposite views on this are: (1) The shorter period would allow the Contest to be over and done with, so permitting intrastate ragchews for the remainder of the season when Es openings are frequent. At present in most cases the Contest contact is "Hello, number, goodbye." (2) The longer term suits those whose yearly leave covers the Christmas-New Year period and whose family at that time wish to go on holidays. So, briefly, the shorter period suits the single man who has only himself to consider, the longer the family man. These arguments have all been thrashed out before but very few of the OT's remain on the band for the Contest, there is a new and rising generation in their place now.

Items of particular interest regarding operation in the Northern Territory appear from 2HE and 4ZBE. With stations operating from there, some of the heart burning re the W.A.S. Certificate should be eased.—30F.

NEW SOUTH WALES

Meeting, 1/5/59.—27 members were present to hear a lecture by Dr. Bob Black, 2QZ on Computers. He covered the field very well in the time at his disposal, from multivibrators to counting circuits, and in an easy to understand manner. Jim 2PM presented the 1958-59 Chairman's Trophy to Dick 2ZCF in the form of a travelling clock for shack and mobile use.

Coming Lectures.—July meeting, a lecture on "The General Application of Transistors," by 2AAH; August, by 2RW, "The Design and Construction of Transistor Power Supplies."

Coming Events.—Hidden night Tx Hunt on 15th July, details over the Sunday Night V.h.f. Broadcast. Mid-winter contest to be held on July 25 and 26. Sat., July 25: 8 to 10 p.m., a scramble on v.h.f. 6 and 2 mx, and u.h.f. 288 to 576 Mc. and up. Contacts must be two-way on any band, no cross band operation will count for points. 30 minutes per band must elapse before contacting the same station on each band. Points score is: 1 point per v.h.f. contact, and 3 points per u.h.f. contact. Sun., July 26: 8 to 10 p.m., a message handling contest on 2 mx only, in which each station may originate a message each 30 minutes, i.e., each station may originate in the time four messages. This should ensure plenty of activity chaps. Points score will be 1 point for a message in, and 1 point per message cleared.

Day Event, 24/5/59.—This took the form of a progressive Hidden Tx Hunt and commenced at 10 p.m. from the Bear Farm, Pennant Hills, with John 2ZAV as the first fox. Eight cars attended. The day was won by Bob 2OAT with two catches.

Night Hidden Tx Hunt.—On 13/5/59, John 2ZAV as the fox proved that you don't have to go to the scrub to hide successfully as the fox was parked in the middle of a large field with darkness his only cover. Some hunters walked within yards and did not spot him. Placings were 2OA 1st, 2RX 2nd, 2PM 3rd. A very nice supper was provided by John and XYL Pat.

Wal 2MZ has been having nightly skeds with 2HL and is putting a 576 Mc. m.c.w. signal into Horrie's from Blaxland. Rx is on the way and two-way contacts should be on soon. 2ZCE is also working on 576 Mc. equipment and 2ZAC's interest in June on 576 Mc. should stir up nice supper was provided by John and XYL Pat. Wal 2MZ has been having nightly skeds with 2HL and is putting a 576 Mc. m.c.w. signal into Horrie's from Blaxland. Rx is on the way and two-way contacts should be on soon. 2ZCE is also working on 576 Mc. equipment and 2ZAC's interest in June on 576 Mc. should stir up nice supper was provided by John and XYL Pat.

6 Metres.—Good opening to VK3, 4 and 5 for a few hours on 12/5/59 at about 8 p.m., but

nothing much besides. 2AXI has got going on six and heard 5/9 at this QTH.—2ASZ.

Additional 50 Mc. News.—2ZCH rounded off April by having somewhat difficult contacts with 5ZAG and 5EC at 2130 on 29th. On May 2 I heard JA4IO working VK6s. Barry 2ZAG and I managed to contact him 5 and 7/8 both ways at about 1500. JA5IO was again heard calling CQ at 1450 on May 10. Neither Barry nor I made a contact on the occasion. The 15th had 2RX, 2ZCH and 2MZ making good contacts with 5EC, 5MK, 5ZGA, 5ZBM and 4ZAX and 4ZAA.

An s.w.l. informed me he heard 5NE on 21 Mc. He tells someone, "That 2HE would be interested to hear that I (5NE) am taking 5 and 6 mx gear to the N.T." I am most interested and would like further details re times of operation and how long he proposes to operate there.—2HE.

VICTORIA

Six Metres.—The big news last month was of course 3ALZ working XE1FU on the 2nd. 3ZFA and 3ZBN heard the signals but were unable to work anybody. Everyone else seemed to be elsewhere. Later on the same day, JAs were in at 1800 hours. June 7, VK4 came through at 1445 at good strength to delight those on the band. Last out at 1530 was Bob 4NG. Quite a few of the newcomers to the band in VK3 worked their first DX. Apart from these openings, 50 has been dead from the ears down with the exception of scattered reports of signals, and some scratchy contacts by 3ZER portable in no-noise areas.

Two Metres.—The Ballarat gang provided the following information. During May the first breakdown in the regular skeds with 3ZCW Ouyen and the Ballarat gang occurred. On May 21, 23 and 24 signals were very poor, but on 22nd it was a washout, and the boys report that the cosmic noise level appeared to be fluctuating up to 3 db. at the rate of from 1 c.p.s. to almost a "motor boating" rate. No definite relation between noise and direction could be discovered, so the cause remains a mystery. 5BC has been sighted on odd occasions, the latest being on June 1 when 3ZEJ heard him at S5. A new station in Ballarat is John 3ZFW, and an old station due to reappear is Stan 3SE. 3ZBS makes the suggestion that a 12 or 24 hour contest be held on the v.h.f. bands every so often. Any bites?

One Metre.—Tests are still being carried out by the interested parties and some new gear is being developed. However, nothing special has occurred lately.

576 and Above.—A minute's silence, please. Request.—Would anybody willing to take over writing these notes and doing the broadcast please come forward, as your scribe has too much on his plate at the moment, with P.R.P., W.I.A. logs, 50 Mc. campaign, not to mention trying to keep on the air. Please!—3ZDG.

Technical.—Les 3ZCN has produced a couple of working parametric amplifiers for 2 and 6 mx. Some pointers. (1) He has a buffer stage (6AK5) between the pump and the varactor, and varies the injection by varying the screen volts. (2) He uses the 0A1 diode (Philips). (3) He has separate input and output links at the cold end of the tank, where the injection link is also. (4) He is using a coil of 6 mx. through line on 2. (5) Six mx noise figure measured 1 db. Due to inherent error in measurement on a single tank amplifier, probably db. (6) Gain on 6 mx 30 db.

Tubes.—The ECC189 mentioned recently is also called a 6ES8.—3ZDG.

QUEENSLAND

Brisbane.—May 1 brought JAs, also the 4HD/4XJ link started with a 30 minute QSO. Max 4HD building a long yagi. 4XJ has been heard at this QTH. 4ZAX swapped reports with Leo, not a bad haul, Dave. Bob 4NG dropped in on the Bundaberg gent and I believe that they are going to try to get through to Rocky at 1915 hrs. Heard Laurie 4ZGL having a f.b. long QSO with JA1BLV one evening. Max 4HD had a scratchy contact with Exter KH6CTC on the 10th, he also heard W3BJG/KH6 and K6RGP/KH6. Our "DX" station, 4ZAT, is settling in on Brible Island, but is kept too busy to get much time on 50 Mc. Had an unexpected break to VK3 and 5 on the 12th, heard an occasional VK3. 2ZES first copied here at 1915. It stirred up quite a few of the gang. A good piece of work, Ian 3ALZ, in working XE1FU. Congrats.

A nice opening on 15th. JA1, 2, 7, 8 and 0 heard here. New call signs coming in Brisbane. Heard Ron 4ZEB airing his gear one night with 4DR: welcome to 50 Mc. Ron. Had JAs in on 23rd, 24th and 27th for short sessions. The Euderm-Bundy link still going, but a lull with Bundy-Rock so far. Heard 4ZAB (Ipswich) at S5 on the 24th.

End of month had a few surprises. JAs in 29th and KH6s. 4HD worked KH6CTC 5/9 each

way and KH6DFE. 4PU collared a JA8. Congrats 4NG on coming "top dog" in VK4 in Ross Hull Contest. Believe 4NG has a KA7 QSL in his shack now.—4ZBI.

North Queensland.—Six has just started to fade for the autumn season. So far I have had over 1,250 contacts for about 350 different call signs. Last JA sigs heard here June 3. They are now weak and heavily affected by QSB. The KH6s were still coming in up to May 16 with some very good contacts. Most surprising incident during May was a half hour 5 x 9 QSO with Russ 8XK on May 10 at 1520 E.A.S.T. Also heard on the same day between 1040-1200 E.A.S.T. were 2HE, 2ZCF and 2ZAC. With all my efforts they refused to be worked. Signals were from S6 to S9 all the time, but one by one they QRT and nothing further was heard from VK2 or other areas.

Bob 4RW has at last made his appearance on 6 mx with a 2E26, 10w., 4 el. yagi outfit. Bob has had a few contacts on 6 with JA and also managed to get one with KH6CTC. The JA8s have broken into their Es season now and it is hard to get a contact. KR6MD has hit the ether in Okinawa and KR6AK is all set to go home to U.S.A. There is an FK8 station on the air now but as yet no contacts with him.

His freq. are 50.00, 50.25, 50.75 and 50.85. Radio Peking seems to come through strongly on 50.8 and also another f.m. station on 49.7.

4ZBW has been transferred to Darwin and promises to be operating soon, now there will be a Z station in the Northern Territory at last. 4ZBJ has been told of a transfer from Atherton to Brandon, a bit closer to this QTH, so we hope for increased activity.

144 Mc.—At last the "2" barrier has been cracked between the Towers and Townsville with 4LK and 4ZAK doing the honours. General tendency is for the "2" sig to be far above the "8" sig in strength, also it remains more constant in strength, six has some very bad fades. 4LK is using an 832 final and a 10 el. yagi, 4ZAK is using a 522 with a 10 el. yagi also, 4ZBW is using his 50 Mc. tx for local contacts on 144 Mc. but could not make the "Towers".—4ZBE.

SOUTH AUSTRALIA

Most activity for the month has been on 288 Mc. Garry 5ZGH has very nice modulation on 288 Mc. for a mod. osc. George 5GB has the nicest 1 mx signal that I have ever heard. Barry 5ZBZ has his 12AT7 transceiver going nicely, and has had several crossband contacts with Al 5ZCR, 288 to 50 Mc. Vic 5JH has been mobile most week-ends with trips to Sellicks Hill and Bumbunga Hill. Signals received in the city from Vic have varied from 5 and 5 to 5 and 9, very nice going for a distance of 80 miles with mod. osc. and super regen.

Graham 5ZAP is getting some gear together for xtal control on 288 Mc., starting off with the tx. George 5GB, when he is on, runs a cool 100w. to his 829B on this band, a beautiful xtal signal George.

Bill 5ZAX has beaten the gun in this Division with his t.v. transmissions on 288 Mc. I haven't the details of Bill's gear yet, but know that he intends feeding the signal into a 32 el. beam. I also understand that Keith 5MT has built a 288 Mc. converter for his t.v. rx and that Sid 5ME and Clem 5GL have done likewise. Wish I had a t.v. rx to monitor your signal Bill. Al 5ZCR is also interested in t.v. and is building a rx using a 3EP1.

The final fox hunt for this season was a combined effort on 288 and 50 Mc. Eight mobiles took part on 288 and three on 50 Mc. The hunt was enjoyed by all participants with Brian 5ZBI winning the 288 division and Hughie 5BC winning the 50 Mc.

50 Mc. has been very quiet with only one break through and that to VK4. John 5ZDL does a regular re-broadcast of the 5WI session on Sunday mornings, with transmissions on 288 and 50 Mc. Mick 5ZDR is re-organising his gear and putting everything into a rack. He is also v.f.o. controlled. Bill 5WR has just received his 50 Mc. tx from Al 5ZCR and should be on the air shortly. Bill has been listening on 50 Mc. for some time, 5NO situated at Elizabeth has almost completed his 50 Mc. gear. He will be running 150w. using his present rotatable G4ZU with parasitic elements for 50 Mc. Don 5TM also of Elizabeth is erecting a beam and should have it up by now.

John 5ZJM will shortly be mobile 50 Mc. in VK3. He has converted a taxi tx and his freq. is 50.8. Peter 3ZDR paid VK5 a visit recently and did the rounds of the various shacks, our worthy V.h.f. President, Al, playing host most of the time.

The V.h.f. Section held a demonstration of the D.M.E. equipment used by the Dept. of Civil Aviation. There was quite a good attendance, the boys being over-awed by the osc. used and the power it was running as well as the natty tuning condenser in the grid lines to control the frequency.—5ZAW.

WESTERN AUSTRALIA

June has been a very quiet month from the DX angle—several JA openings, but signals subject to very heavy QSB and openings very short. So far there has been no sign of any opening into ZS, and I feel that no such opening is likely now. It appears to me that any reflections in an East-West direction cover a very narrow area of territory (sea?) and Africa is missed entirely (note our working VK9 on F2 but no VK4, and last year's openings to ZL1 and 2 but no 3s and 4s).

Activity, generally, here has dropped considerably—the most active stations being 6BO, 6ZBZ, 6ZBY, 6HK (glad to see you back on the air, Don), 6BE, 6ZBG, 6ZBC, 6ZBX has re-appeared after a long absence—beam building. Russ has demonstrated that the ZL Special really works on 6. Jack 6ZBU has now shed his "Z" and is 6BU. Jack has been heard trying his wings on 40 and 80, but still conducts his nightly sessions with 6GE.

Keith 6KH was at the last fox hunt. He will probably be moving to Mosman Park in the near future (more QRM, Roy!). Talking of fox hunts, Wally 6ZAA ran the last one. Modesty forbids any mention of the winners, but Mrs. 6ZAV finished up receiving the prize.

Another re-arrival in the city is Ron 6FM. Ron is settling back into his old home at Applecross and should be back on the breeze before long. Mobilers 6EO, 6ZCB and 6ZAA may be heard frequently running 50 Mc. mobile; Rolo has done two trips to the south west operating mobile each way and has had quite a deal of success, especially as Bob 6ZBY is strategically placed en route.

We believe Rolo has received that JA9 card and can now apply for his A.J.D. (50 Mc.) which he has worked about six times over. This will be the second award for VK6 with two or three other chaps still awaiting QSLs. Others will be waiting for the spring openings to complete the award. Better make the most of it, chaps, it may be the first and last time in history that this award is possible on 50 Mc.

The beacon has ticked up some 800 or so hours but, since VK8, there have been no further reports. The writer intends to make an all out effort during September/October to work those countries which have heard or been heard by VK6, i.e. DU1, VU2 and possibly KR6 and VS6. These should be certainties, but so far seem to have missed out.—6BE.

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Just a thought. These remarks are mostly concerning the bands used for DX purposes.

We all know that the Law of the Land permits phone and c.w. to be used in any part of these bands. Now, that is OK from the official point of view, but as one of those who is crushed into these narrow limits it seems to me that if each of us was to abide by the "Gentleman's Agreement" which has been in operation for many years things would be more comfortable for all.

Reports support my observation that there is a growing amount of phone appearing from the VK gang in the c.w. section of each band. I appeal to these fellows to move up a little in frequency and so separate the phone from the c.w. Of course the c.w. man has no legal right to the lower few kc. of each band—it's only a "Gentleman's Agreement"—but it does help the majority when the going is tough in overcrowded bands.

Perhaps some of the newer chaps didn't know about the agreement, and perhaps some of the not-so-active old-timers had forgotten it. How about it, fellas.

Just a few words in support of the s.w.l. DX men. I would like it to be known that much of the news on this page is passed on to me by the S.W.L. Group, especially those in N.S.W. and Victoria. Often their reports give additional support to news and comments by licensed operators. A cross section of all reports make it possible to pass on reliable information concerning band activities, QTH, etc. Some of the listeners feel they are losing publicity. (Especially dropping the s.w.l. column in "A.R.") (This month it has been re-started after another volunteer to write the notes has been obtained.—Editor.) This is bad. While it may be due in some part to lack of organisation on their part, I would like to see more encouragement given them by the fully fledged Amateur. They give strength to the W.I.A. membership and from their ranks many new Amateurs are born.

NEWS AND NOTES

There is a possibility of VK5BV making a trip to Portuguese Timor in the near future. It all depends upon whether the necessary equipment can be made available. He said he can open up from CS10 within 3 or 4 weeks after equipment is operational. Anyone interested can contact Ray on 21 Mc. phone, where he is quite active, or write him direct to R. C. Howland, C/o. D.C.A. Mess, Darwin, Northern Territory, Australia.

W2BIB and H2FF are working out plans for a DX-pedition to Nepal during mid-August. The call prefix will be 9N4. They expect to be there for about two weeks.

HL9KJ is genuine and is working phone most of the time and some c.w., 14 and 21 Mc. are used.

W0AIW and VQ4ERR will make a trip to the Seychelles as VQ9ERR and should be on the air about 22nd August. 14 and 21 Mc. will be used. The station will be fairly high powered.

DL9FF, DL1KB and DJ2MN will operate from Andorra from July 29 through to 30. C.w. only, 24-hours-day, and all bands.

Afghanistan; YAI1W is reported to be working on 21 Mc. s.s.b. daily, and YAI1B is currently working 14 Mc. a.m.

W8PVE will be active from Pakistan in the near future. His license application has been approved and he hopes his call sign will be either AP2R or AP2JR.

Iwo Lima.—KA0IJ and KA0IM, s.s.b. may be found on 14 Mc. daily commencing about 1200z.

CR5AD js active from Portuguese Guinea. He is using 100 watts.

The Cook Electric Installation crew now in Nepal includes four Amateurs. None are believed to be hot DX'ers but the King has given permission to operate Amateur stations. Both phone and c.w. will be used on 10 and 20 mx.

* Call signs and prefixes worked.
z zero time—GMT.

V54JT is active from Sarawak on s.s.b. and c.w. on the 14 Mc. band. Listen for him between 0900 and 1200z.

VF6PV is crystal controlled on 14100 Kc. and is very active around 1100z.

MP4BBW's tentative plans for his s.s.b. DX-pedition are: MP4QAN, Qatar, July 16 to 18.

L0U2C currently active on 14 Mc., is in the South Shetland Islands. There has been some misunderstanding about his QTH as he gives it as "Antarctica". This is not the case for DXCC purposes, it is South Shetland Islands.

It is understood that EA3CA now has permission for s.s.b. operation from Ilni.

V59MB, Maldiv Islands, is temporarily off the air due to a burnt out transformer in the tx. A replacement is expected any time now.

CR7B5 is a club station in Mozambique. They are now working s.s.b. on 14 Mc. with low power, but hope to boost their signal soon by the addition of a linear amplifier.

Poland's first s.s.b. station, SP3PL, is now operating 10 through 80 mx with about 150w. His XYL's call sign is SP3SQ.

Jan Mayen.—No station will be active from this location during 1959 and 1960, according to LA6CF. He is investigating the possibility of getting up there in 1961 for a few weeks DX-pedition.

YAI1B, Afghanistan, is fairly active on 14 Mc. phone between 1400 and 1600z. (W6BSY)

Aaland Island.—OHRRD, with OH3QC and OH3ND plan to operate as OH3AB/0 or OH3QC/0 from August 7 to 18. OH3ND is XYL of OH3QC.

...CE0AC, Easter Island, is now active Wednesdays and Sundays from 1215 to 0300z. QSL via CESH or the R.C.C.H.

Franz Josefand will be put on the DX map by UA1CK on all bands during mid-August.

FF8BY will be the call used by VE2ABE and VE2JC while on a visit to St. Pierre Island, 14 Mc. c.w. and phone will be used. Time, late June and early July.

W2HTI, in a letter to 2EG, says, "My Buddy, K2JGG/FF8AB will be operating from St. Pierre and Miquelon during the first two weeks of July. He hopes to have s.s.b. in addition to a.m. and c.w." W2HTI is also FF5AE. He expects to be back on St. Pierre is, during first half of September. Will be operating on c.w. and a.m.

H2FF will probably be active as HV1CN, Vatican City, in July. He intends using s.s.b., a.m. and c.w.

VR1B would like to work as many VKs as possible. He operates on all bands, 3.5 through 28 Mc. It is known that he would appreciate a fair go by some of the DX hungry QSO busters from other places, if they would wait until each contact is finished.

ADDRESSES

FR7AI—Paul Canavy, Rue des Remparts, Cayenne, French Guiana.

9G1CF—Dr. Hugh de Granville, Box 4, Winneba, Ghana.

V59AE—Ian Dunbar, V-4 Bandar Sheik, Little Aden, Aden.

V59AH—Major G. R. K. Lyon, Armoured Car Sqn., Aden Protectorate Levies, B.F.P.O., 69, Aden.

EA8CM—J. M. de la Vega Artlich, la Transversal de la Salle, 31, Santa Cruz de Tenerife, Canary Islands.

ZB1NR—419237 S.A.C., N. B. Rivett, Air Radio Section, R.A.F., Ta-Kali, Malta.

ZB2Z—R. W. Bush, Room 1, "C" Block, R.A.F., New Camp, Gibraltar.

BK7AB—H. McCormick, P.O. Box 216, Bucaramanga, Colombia.

OD5CI—QSL C/o. U.S. Embassy, Beirut, Lebanon.

SV1AB—G. Vernardakis, 3 Erythreas St., Peristeri, Athens, Greece.

ZC4RJ—N. Joyce, Hq. Forces Broadcasting Service, B.F.P.O. 53, Cyprus.

VP8EG—QSL via G8KS, Holwood Park Ave., Farnborough, Kent, England, or via R.S.G.B.

ST2KO—P.O. Box 30, Khartoum North, Sudan.

Z77JI—H. B. Helm, P.O. Box 272, Sinoia, Sth. Rhodesia.

BK3RJ—Dr. Jorge Reynolds, Apartado Aereo 83-36, Bogota, Colombia.

ZC4RF—S. J. Butlin, 148 Yew Tree Lane, Sth. Yardley, Birmingham 26, England.

CR9AB—QSL via W1DWH, 147 Glenwood Av., Boston 36, Mass.

EL4A—QSL via W7PHO, 18549 Normandy, Seattle, Washington, U.S.A.

EA0AF—Box 185, Fernando Poo, Spanish Guinea. (2QL)

8A2CZ—QSL via ON4QX. (2QL)

FMTWU—H. Fontaine, P.O. Box 61, Fort de France, Martinique. (BERS195)

OQ6JR—Bob Center, P.O. Box 27, Shinkolobwe, Belgian Congo. (BERS195)

W2CTN is QSL Manager for JZ0DA.

Anybody unable to extract a card from ZD9G to date may find a try via W2ZGB worthwhile.

QSL'S RECEIVED

2AHE—JT1AA, JB2I, JZ0PB, OQ5AO, UR2KAE, Z2EJA.

2AMB—ET2VE, FB8XX, OQ5HU, VR1B, VS1FJ, VS1ZC.

2QL—EA6AM, ET2VB, H18E, ST2KO, T12LA, VE2LU, VP9EP, SV0WR, 4X410, 4S7FJ.

L3065—BV1US, PI1J, YV5AEC.

BERS195—ET2UB, FMTWU, GC2CNC, KX6CO, OQ5JR, PY2KT, UA1RF, UR2BU, VK-2AYY/LH, VK2FR/LH, VK9JG, VQ6AB, VR1B, VR2DE, ZC4PN, XV5A, 4X4FU.

ACTIVITIES

7 Mc. C.w.—2QL: UA9OM*, UP2NM*, BERS-195: DM2ABL, DU7SV, EI2S, ET2US, G3EYN, GB3AWR, HA5KDQ, LA7X, LZ2KSL, OK3KMY, ON4JB, SM3HR, SP6QH, UA3HK, UA0FT, UB-5CW, UP2NM, UQ2AW, UO5T, UR2KAE, VE-8MX, VQ4FK, VR1E, YU3IE, Y03AC, ZE3JV, ZS4JD. BERS1002: Gs, KH6BDV/K36, WH6DBR, YU5AJ, Ws.

14 Mc. C.w.—2AMB: CN8BP*, KM6BL*, KC-6JC*, LU0AC*, T12WR*, VE8DC*, VQ4HT*, VR5AC*, CX5CO, HH2LD, HT1AW, KW6CW, T12PZ, VP5FR, VQ4CW, VQ6LQ, 4S7FJ. 2QL: EA8CG*, EA0AF*, F2CB/FC*, T12WP*, UN-1AE*, UP2NM*, VR5AC*, 3A2CZ*. 2ZR: DJ-1RK*, F2FA*, G2HNO*, GM3HQ*, HB4FD*, HB9WE*, HB9VW/FR*, JZ0DA*, LUINE*, LU-8FBS*, OK2KEH*, OY8JR*, OZ1QM*, PA-0WBR*, SM7CZ*, UA3HK*, UB3KDK*, UC2AA*. 4DO: W/Ks, KH6s, DL8DE*, HA5TO*, SM-3AGD*, SP8AAT*, SP8HU*, UC2BG, XW8AL, BERS195: BV1UC, CN2AY, CX5CO, FK8AW, HB1RM, HC4IE, IT1PDN, JZ0DA, KM6BK, KX6CO, LX2GH, T12WR, UH8KAA, UP2NM, OQ2CG, VK9GW, VKORT, VR1B, VR2CC, VU-2JA, 8M2DW, LA7RF/MM, LA1OF/MM, LU-0AC/MM, UA0LS/MM. BERS1002: FO8AC, G3JKI, KP4AZ, KX6CJ, LA7RF/MM, PJ2AE, UB5FU, UQ2KAA.

14 Mc. Phone.—2AMB: CN8LE*, KB6BH*, VP5FR*, ZE3JV, F8SCF*. 3A0M: G2PL*, G3EHT*, H1CVS*, H1XB*, CT1EY*, OA4DA*, OA9B*, ON1DZ*, VEs*, XE2KO*, YS1MS*. 4DO: CO8JK*, KHs*, KP4AMR*, W/Ks*, EA-1BC, HK7LX, VE2CO, VU2SS, 9M2GA. L3065: Ws all districts, K7KFX/KL7, KR6OU, KW6CJ, KX6AF, VE7JZ.

21 Mc. C.w.—2QL: T12WR*, XE2AW*, 2ZB: DL7AQ*, F8DA*, G3EFT*, GC2CNC*, HB9UB, KP4A00*, OE3NH*, OK1KTI*, SP8BE*, UA-KUV*, 4X4CJ*. 4DO: W/Ks, KH6s, BV1USB*, CO2US*, DL7AQ*, DM2AEB*, DU7SV*, F3AB*, FK8AB*, G2DC*, G6XY*, JAs*, KX6CN*, OK-1KTI*, UA4IF*, VP9CR*, F8AH, JZ0A, OK-2WL, KR6AK, SP2KAC, T12CME, UA0UV, UA4KYA, YV5ABL.

21 Mc. Phone.—4DO: W/Ks, KH6s, FK8AB*, FQ8AE*, VR2CS*, HK3OK, HK5ER, OA5N, VK-9MF, VK9RO. L3065: G2AMG, G3CKH, G3JAF, G6VX, G8MM, G13JM, Vrs, KB6BH, F9YK, FK8AU, FK8AV, VK9RO, Ws, KH6s.

28 Mc. C.w.—2QL: XZ2TH*. 4DO: W/Ks, KH6s*.

28 Mc. Phone.—4DO: W/Ks, KH6s*.

The bands seemed rather patchy this month. At times Europe came through with plenty of punch on the 20 mx band but the periods were quite short. After 2020z there was some good pickings for about one and a half hours, but these cold mornings and breakfast time prevented much activity from the VK-gang. Rare DX was scarce. 15 metres did not open until the afternoons when signals were good but made difficult to work easily as the band was full of W signals. Got very little information on other bands.

That about finishes it for this month except for my thanks to all who supplied me with information. I have used extracts from the DX Bulletin published by W4KVV; 2AMB for info. and comments; 2QL for first hand tips collected between snagging the rare ones and handling the QSL duties; 2AHH is looking for Zones 2 and 35. Any suggestions? Could have helped about 3 months ago. 3A0M has worked three American stations at which Neville VK3ACN is staying. According to Neville he is having a wonderful time. BERS195, Eric, as usual is doing good work with receiving and also getting swags of QSLs. BERS1002 has heard 90 countries so far this year which brings his overall total to 181. L3065 would be pleased to see you in person when you come to Sydney Don. 2EG, thanks for the phone call Bill.

S W L

Maurice Cox, WIA-L3055
Flat 1, 37 Boyd Crescent,
Olympic Village, Heidelberg,
N.23, Victoria.

[Enquiries have been received as to why there have been no S.w.l. Notes. Ian Hunt, your previous scribe, found it impossible to carry on. Early in May, Maurice Cox approached me with an offer to write the notes, which were to commence in the June issue. Owing to the extensive coverage given in that issue to the F.A.S.C. Proposals to reduce some of the Amateur Bands, space was not available. It is now up to the S.w.l. Groups of each Division to assist Maurice Cox to keep this section alive.—Editor.]

Hi fellows! This is your new scribe, so let me introduce myself to you. My name is Maurice Cox, WIA-L3055 (address as above), Secretary of the S.w.l. Group, Victorian Division of the W.I.A.

Firstly, I wish to thank our past Secretary and present Assistant Secretary, Ian Hunt, for his outstanding service for the Group in the past, in his duties as Secretary and Scribe. Ian has now passed on to the ranks of sending as well as listening, and I am sure we all wish him success on the bands that he has listened to for so long.

Now, seeing that this is my first attempt at doing anything like this, I hope you will bear with me and help in making these notes in the magazine a success. Please write to me with news from your Groups as to what you have been doing and future activities. Don't be frightened to write, I will answer either personally or via the notes.

We want to make the S.w.l. Groups a big success in this country; we have the numbers, but somehow not the complete interest. You see, I myself don't care much whether I become an Amateur or not. I like s.w.l., not only the Amateur bands, but also the s.w.b.c. bands. So in future you'll see not only news on the Amateur bands but also the s.w.b.c. bands.

To make a good job of these notes I want news, so again I am going to say "send me the news". I am certain you will chaps, so don't let me down.

If you have reports on either bands, write to me at my address, or phone me at my work, The Repatriation Department, MX1 110, Extension 311, and state what you have heard, when, and frequency, etc.

VICTORIAN S.W.L. GROUP

March.—I took the Secretary's chair for the first time since being elected in August owing to a slight delay in hospital with polio, anyhow we beat that okay. The meeting was attended by 13 members (more to come I hope in future). Ian Hunt reported that Council had increased the age from 16 to 19 years for Junior Members. Other Associate Members' fees to be considered in 12 months for reduction. A receiver station is to be set up in the rooms for our use, also Ian Thomas proposed that we Victorians challenge the rest of the States in the R.D. Contest. What about it chaps? (Challenge accepted by N.S.W.—See Correspondence.—Ed.) John McEwen suggested we encourage new members from the High and Technical Schools and this was agreed. Then yours truly gave a lecture on short wave reporting and Ian Hunt one on antennae.

April.—That was a beauty. Fred 3YS came along and gave us a demonstration on stereophonic sound. It was wonderful. So much so that I have asked him to come along again. Thanks very much for your demonstration Fred.

May.—Our honoured guest was Eric Trebilcock. He gave us a talk on what he has accomplished in 32 years of s.w.l'ing. He brought along cards to show us, some had no data on them, others were incomplete. He told us he has heard 256 countries and of them 247 confirmed, also he showed us his awards and there were some very nice certificates. Eric mentioned he listens an average of three hours per day every day, doesn't worry about conditions at all. He also said his listening comprises 90% c.w. and 10% phone. He stated that every s.w.l. should learn c.w. and should

have his own card. In the last 32 years he has sent out 30,000 reports and received 15,000 cards.

The rx equipment is a baby Hallcrafters, two antennae—a long wire and a vertical. Most of his listening is done of a night when other countries are awake and we asleep. These are the main points of his talk which lasted 1½ hours and I could go on giving many more interesting facts of his talk. I would like to convey to Eric our whole hearted thanks for one of the most interesting and enjoyable talks that we have ever had. Many thanks Eric. We hope you may come along again sometime in the future.

June meeting will be a rx night so I hope you chaps will bring along your rx's to discuss and tell us all about them.

The card of the month I am going to keep going and also the mammoth one. George Fox was the winner of the January Card of the Month. I have forgotten what the call sign was. February, March and April—no card of the month. Apparently nobody received any cards in those months.

Ian Thomas has written me a couple of letters. He asks about the card of the month and the mammoth contest. Well Ian they are still going along. Thanks for your offer of service, I may ask for your help. Hope your antenna is up again. Yes, conditions were particularly good on most of the bands in April. Ian also reports having logged 180 DX stations on 15 and 20 mx during the month of May and logged two new countries—ZM6 and G13—bringing his total to 82 countries heard. Has received cards from BVIUS, PIJ and TIZHP. Good work Ian.

Ian Hunt received a letter from the Secretary of the VK2 S.w.l. Group (and passed it on to me) enquiring about the S.w.l. Notes and advising that the Group has a publicity officer and hope to have something for the notes in "A.R." Good show, just what yours truly wants. Thanks very much VK2.

Now here is a letter from a new member of the Group, E. Hutchins who hails from Hamilton, Vic. He writes me about his activities in the wireless world, "I have been interested for some years but pressure of farm work has not allowed me to follow it with any sort of fixed activity. However, I hope that within a few years I will have sufficient knowledge to try for a tx license. Have been working hard on c.w. My listening equipment at the moment is a bandspread Radiola which works very well on 80, 40, 20 and 15 mx and am at present building a converter to cover the other bands." Thanks a lot for your letter Mr. Hutchins and hope to hear from you again in the near future.

Max Hilliard won the VK3 listeners' section of the Ross Hull Contest. Congrats. Max.

NEW SOUTH WALES

Office-bearers of the N.S.W. S.w.l. Group are as follows: President, John E. Douglas, WIA-L2012; Vice-Pres., Barney Smyth, L2001, George Mains, L2023; Secretary, Tim Mills, L2052 (VK-

2ZTM); Publicity Officer, Les Stahl, L2049; QSL Manager, Barney Smyth.

Now that the Group's teething troubles are over we feel that this year can be even more successful than last. Your President and office-bearers would like to see all city members attending the monthly meetings. We want to hear from country members (all letters will be answered). We want your ideas and suggestions. We especially want this year to be a successful and active one.

W.I.C.E.N.—Here the S.w.l. Group can be of use if the need arises. You should listen into practice sessions (first Tuesday of month at 8 p.m. 40 and 80 mx) and become familiar with the procedure. In times of emergency you could be needed as a second operator to your local Amateur. We intend to discuss this matter with W.I.C.E.N. Officer, Bob Winch (20A) and see how we fit with the picture.

New Members.—The more the merrier, we would like each of you to obtain one or more new members. At the May general meeting of the Institute, there were 365 associates and 63 s.w.l's. on the books. We want to see the other 302 s.w.l's.—how about it?

Meetings.—There will be at least one meeting per month and several outings this year. All meetings will be held at Gore Hill Technical College on the first Friday of the month until further notice. Good lectures for the year are being arranged. Many outings are being planned including, we hope, a tour of the R.A.A.F. control centre at Richmond and the Bringly O.T.C. Receiving Station.

Technical Group.—We hope to start a technical group to help you (particularly country members who cannot attend meetings) with your radio headaches. The actual form of this group has not been finalised. If you can assist or have any ideas on the subject let us know.

Log Books, Call Books.—We have log books if you want them. There is a new call book coming out this month. They will be obtainable from the Secretary of the Institute, P.O. Box 1734, G.P.O., Sydney.

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NOTES

FEDERAL

150 WATTS PLUS OR MINUS!

The P.M.G. Department will be asked to permit an overall meter tolerance of 10% in relation to meters used by Amateur stations for purposes of measuring d.c. power input to the final stage of transmitters.

The Federal Council considers this justifiable since most meters with the exception of highly priced accurate instruments would vary by this amount. It is because of a permissible tolerance in manufacture of meters for general metering work that broadcast stations have a meter reading tolerance.

The P.M.G.'s Departmental Radio Inspectors would normally allow for such tolerance in meters but cases have been reported where such was not the case and the Amateur concerned was reported for running a few watts above his licensed power when the d.c. input to the final was measured by the Inspector's naturally more accurate meter. From engineering principles, the few watts gained by a meter reading low by an acceptable tolerance would mean practically nothing in radiated power and signal strength at the receiving station.

REIMBURSEMENT TO MEMBERS OF PUBLICATIONS COMMITTEE

Due to the increase in the amount of work involved in producing the Institute's magazine, "Amateur Radio," Federal Council has agreed to a recommendation to the Headquarters Division (VK3) that consideration be given to implementing some form of payment to members of the Publications Committee for the work and time given to its publication.

If some suitable scheme can be arranged it should go a long way towards providing for more technical articles and of a higher standard.

A BETTER INTERNATIONAL AMATEUR RADIO UNION

The Federal Council has empowered John Moyle, VK2JU, as the Amateur representative to Geneva, to arrange during the course of the I.T.U. Conference a meeting of I.A.R.U.

CONTEST CALENDAR

Compiled by W.I.A. Fed. Contest Com.

★

NATIONAL FIELD DAY:

Comments on any changes to the F.C.C., W.I.A., Box 871B, O.P.O., Hobart, Tasmania.

REMEMB. DAY CONTEST, 1959:

Dates: Saturday, 15th August, to Sunday, 16th August, 1959.
Duration: 1800 hrs. E.A.S.T. to 1759 hrs.
Rules: As published "A.R." June, 1959.
Logs: Return postmarked not later than 6th September, 1959.

SCANDINAVIAN ACTIVITY CONTEST:

Dates: C.W.—1500 GMT, Sept. 19, to 1800 GMT, Sept. 20, 1959.
Phone—1500 GMT, Sept. 26, to 1800 GMT, Sept. 27, 1959.
Rules: Watch "A.R."
Logs: Mailed not later than 15th Oct. '59 to Contest Manager, S.R.A.L., P.O. Box 306, Helsinki, Finland.

VK-ZL DX CONTEST, 1959:

Dates: Phone—1000 GMT, Saturday, 3rd Oct.—1000 GMT, 4th Oct.
C.W.—10th Oct.—11th Oct., 1959.
Rules: Overseas, as for 1957. VK-ZL, Bonus value altered (watch Aug. "A.R.").

"CQ" WORLD-WIDE:

Dates: Phone—Last week-end Oct. '59.
CW—Last week-end Nov. '59.

member representatives to discuss the organisation and operation of the I.A.R.U. with a view to making it "work" more satisfactorily on behalf of the Amateur Service in the international sphere. One proposal will be that member societies contribute finance to enable the Union to function as it should do under its present constitution.

W.I.A. FEDERAL CONVENTION IN PERTH IN 1962

The Federal Council, subject to ratification, has agreed to the holding of a Federal Convention in Perth in 1962, the year the Empire Games will be held there.

The West Australian Division is most anxious for this to eventuate and are prepared to raise an estimated £300 as the difference between holding the Convention in Melbourne where it is generally held. It is suggested that considerable saving can be made by an application for reduced air fares; this will be investigated at a later date.

W.I.C.E.N. FREQUENCIES

The Federal Council will be asked to ratify proposals to standardise the frequencies of 7080 Kc. as the primary frequency and 7040 Kc. as the secondary frequency for the use of the Wireless Institute Civil Emergency Network (W.I.C.E.N.). It will also be asked that 3501 Kc. and 7002 Kc. be accepted as the national guard frequencies.

SHORT WAVE LISTENER AWARDS

The New South Wales Division of the W.I.A. has been asked by Federal Council to submit draft recommendations for short wave listener awards, etc. By encouraging short wave listening to Amateur Service transmitters and the formation of S.W.L. Groups and activities within the Institute, a useful growth of Amateur station licensees is envisaged.

FREQUENCY SHIFT KEYING

Proposals from the New Zealand Association of Radio Transmitters (Incorporated) for the use of frequency shift keying in bands other than above 29,700 Kc. have been studied by the New Zealand Post Office and approval has been given for the use of FSK in the following bands employing any degree of frequency shift up to 850 cycles:

Band Kc/s.	Frequencies for FSK Kc/s.
3,500 — 3,900	3,500 — 3,550
7,000 — 7,300	7,000 — 7,050
14,000 — 14,350	14,000 — 14,100
21,000 — 21,450	21,000 — 21,100
26,960 — 27,230	26,960 — 27,230
28,000 — 29,700	28,000 — 28,100

MORSE CODE PRACTICE TRANSMISSIONS

The following morse code practice transmissions are currently operating for those who want to obtain regular practice for the A.O.C.P.:

- VK2 Division on 3573 and 7050 Kc. Monday evenings 2030 to 2100 hours E.A.S.T.
- VK3 Division on 3550 Kc. each Sunday 2030 to 2100 hours E.A.S.T.
- VK4 Division is not operating at present.
- VK5 Division on 3504 Kc. Sunday evenings 2100 to 2130 hours Adelaide time.
- VK6 Division on 3600 Kc. using m.c.w. and 50 Mc. using c.w. Wednesday evenings at 2000 hours W.A.S.T.
- VK7 Division on 3315 Kc., 1915 to 1930 hours E.A.S.T. nightly except Tues. & Sundays.
- VK9 Division is not operating at present.

The New Zealand Air Force station ZKF also transmits morse code practice transmissions every night at 1830 (N.Z. time) on 3324 and 6865 Kc.

W.I.A. OFFICIAL BROADCASTS

At the Federal Convention held in Melbourne during Easter the Federal Council discussed the times and frequencies used by the official WI stations for the Sunday morning broadcasts and intrastate hook-ups following the broadcasts. Subject to ratification by all Divisions the following table was agreed to:

Official Broadcasts on 7146 Kc.	
VK2 1100 hours Eastern Aust. Standard Time	
VK3 1030 " " " " " "	
VK4 0900 " " " " " "	
VK5 0930 " " " " " "	
VK6 1130 " " " " " "	
VK7 1000 " " " " " "	
VK9 0830 " " " " " "	

Intrastate Hook-ups on following Frequencies:

VK2 7050 Kc.	VK6 7085 Kc.
VK3 7135 Kc.	VK7 7115 Kc.
VK4 7105 Kc.	VK9 Freq. not specified
VK5 7125 Kc.	VK3WIA 7095 Kc.

There is no reason why this table should not be ratified and as soon as this is done Divisions will be officially notified of its implementation to take place forthwith.

LIMITED LICENSEES SEEK TO PRACTICE

MORSE CODE ON V.H.F. BANDS

A motion discussed at the Easter Federal Convention seeking permission for licensees holding Limited A.O.C.P.'s. to practice morse code on the v.h.f. bands in which they are licensed to operate was defeated by four votes to one, with two Divisions refraining from voting. The general feeling was that full licensees cannot use the bands (including the v.h.f. bands) for this purpose prior to obtaining a license and in view of the morse code practice transmissions currently in operation for this purpose the Federal Council, by a majority, agreed that adequate facilities were available for Limited license holders to obtain practice without needlessly cluttering up the v.h.f. bands. If this is the real reason for wanting such a facility, then it would seem the Federal Council made a wise decision.

SUMMARY OF W.I.A. I.T.U. FUND CONTRIBUTIONS

Licensed Amateurs		
Division	Amount	Subscribers
VK1	£20 19 0	43
VK2	£708 8 0	513
VK3	£590 10 6	434
VK4	£155 7 9	131
VK5	£255 18 6	182
VK6	£137 15 0	110
VK7	£88 12 3	78
VK9	£33 15 6	23
Total	£1991 4 6	1484

Associate Members, S.W.L.'s., Miscellaneous

Division	Amount	Subscribers
VK1	£9 10 6	3
VK2	£126 9 5	97
VK3	£22 15 6	20
VK4	£14 5 0	8
VK5	£10 2 0	11
VK6	£4 8 0	5
VK7	£26 6 6	17
VK9	£1 0 0	1
Total	£214 16 11	162

Overseas

Hong Kong Amateur Radio Society and VS1 Amateurs	£30 5 0
Trade Organisations	
Ducon (Aust.) Pty. Ltd.	£20 0 0
Trimax Transformers Pty. Ltd.	5 0 0
Total	£25 0 0
Grand Total	£2236 6 6

It is estimated that expenses of organising the Fund including air fares to bring the W.I.A. representative to Melbourne for meetings of the Frequency Allocation Sub-Committee will not exceed £250.

The Fund will close on July 31. If you have not already subscribed please address your donation to Federal Secretary, W.I.A. Federal Executive, Box 2611W G.P.O. Melbourne, before this date. All contributions will be gratefully received. Help us to reach the target figure of £2,500.

NEW SOUTH WALES

The May general meeting of the Division was held at the usual venue, Science House, Gloucester St., Sydney, on Friday, 22nd May. The President, Dave ZEO, opened the meeting at 8 p.m., there being some 63 members present. The only visitor present was 2XN from Strathfield. Following the usual formalities, the meeting was thrown open for business and it was decided to make a donation to the Ralph Basden Fund. Mr. Basden has for some years made available all the facilities of the Tighes Hill Technical College to the Hunter Branch for their meeting and conventions, all this being done without charge to the Branch. New members totalling 21 were admitted to membership, the membership of the Division now stands at 1102.

Council would like to congratulate those who undertook the recent relays in connection with the Sunday Broadcasts, and would thank participants for their efforts in this regard.

The President made comment on the progress made in the campaign to bring to official and public notice the recommendations of F.A.S.C. Interest has been created in an unprecedented manner, the response was most gratifying, and the result is that the matter has now reached high political level. Council is justly proud of the members' support, and would thank all who took action in this matter. Do not rest on your laurels chaps, but continue to support F.E. and Alan Fairhall in their difficult task.

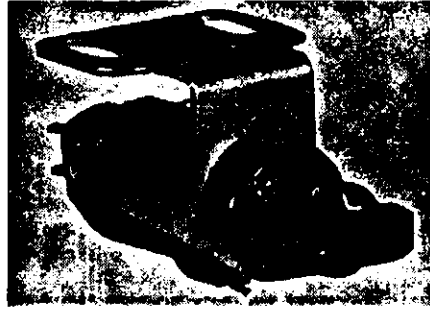
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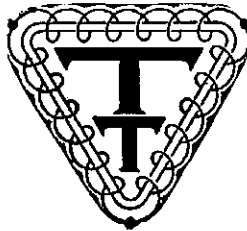
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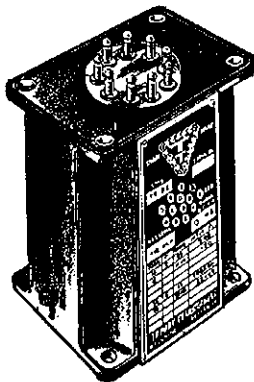
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The lecture was delivered by Max 2OT, his subject being "Command Receivers," and he outlined the confusion in the mind of a newcomer to Amateur Radio, as to the best type of receiver to purchase. Max dealt with the shortcomings of commercial communication receivers in general, and pointed out that by a little thought that the Command Receiver can be utilised to advantage. He demonstrated that by stacking these units a very good receiver can be set up, and one which will have most of the attributes required in any receiver for Amateur use.

Following question time, Frank 2QL, in moving a vote of thanks to the lecturer, drew notice to the attentive manner of the members and further testified to the excellence of the units discussed. The meeting closed at 10.25 p.m. and members adjourned for coffee and the usual ragchew.

HUNTER BRANCH

Annual Dinner and Blackall's Field Day.—Yes, they will be on again this year. A bit early to make the announcement, but will give you chaps a chance to save up and go on a diet. The dates, oh yes—Oct. 3 and 4.

At the May meeting we were favoured by a visit from our Divisional President, Dave 2EO, and Max 2OT. Dave gave us the dope on some Divisional matters, whilst Max expounded how he made the Command rx's work the way he wanted them to. I have been given to understand that Max is writing in like vein for "Amateur Radio." (Be pleased to receive same.—Editor.) The following interested gang were present: VKs 2ZDL, 2RJ, 2ZJR, 2AOR, 2AKX, 2AHA, 2XT, 2ZK, 2AFA, 2ZL, 2CS, 2ALA, 2RU, 2AQR and associates Sutherland, Bob Bailey, Jones, Gray, McLachlan, Foster, Middlehurst and Rod Bailey. The latter is a new associate whilst Keith 2AKX is also a welcome new face. Apologies were received from Fred 2AEE.

Dave and Max arrived late which was only to be expected as they were waylaid by the Gosford mob and apparently only got out of their clutches by bringing some with them. Welcome Gosford, come again. Congrats to Ron Roberts in attaining his call, 2ZRR. Stuart 2ZDF will be absent for some months in Melbourne or some other foreign land. Congrats to Bill 2ZL for passing his 2,000th contact with 2AQR; condolences to the latter for being on the other end.

No doubt you all heard the excellent speech from Lionel 2CS over 2AWK the other Monday night, he certainly did himself proud. A newcomer to the call-backs was Maurie 2VN. We are all pleased to hear that one of our members, Bill 2ZK, is now President of the Newcastle Branch of the I.R.E. The wandering insecticide from Taree, Bill 2AYE, has been visiting this away and called on the two Bills, 2XT and 2ZL. Of course I am not surprised.

A speedy and we hope the most reliable delivery of your disposal items has been formulated by your committee. If you wish to avail yourselves of this service, make a notation on your disposal order form stating that you wish to use the bulk transportation service to Newcastle and then the stuff will be sent to Varley 2SF, with your name on it. Do this each time you send in your application to Sydney.

Well chaps, the July Branch meeting will be at 8 p.m. on the 10th at the Newcastle University of N.S.W. at Tighes Hill and the social at Bill Hall's on Wed., 22nd.

VICTORIA

MELBOURNE UNIVERSITY AMATEUR RADIO CLUB

The inaugural meeting of this club was held on 7th May when 31 members were present, 20 of whom were licensed Amateur Radio operators. The aims of this club are to foster and further interest in Amateur Radio among the students of this University, and at a recent committee meeting activities were proposed in accordance with this aim.

It is hoped that these activities will include the following:

Short lectures in which it is hoped to demonstrate how electronics play a part in the work of many different departments at the University. Morse code practice classes for those who wish to attend, to be held at lunchtime. A regular activity on Friday night, centred around a club station which we hope will commence during next term.

One rather interesting feature about membership is that all financial members of the Students Union are members of the club. This is in accordance with certain requirements of the Students Representative Council and so the membership is extraordinarily large, being over nine thousand.

Non-students wishing to join may do so if they are either members of staff or past students. Full details may be obtained from a member of the Committee as follows: President, M. J. Owen, 3ZEO; Secretary, G. F. Jenkinson, 3ZFA; Treasurer, M. R. Osborne, 3ZCZ; R. Babb, 3AUB; S. Makareth, 3ZIS; T. Godding, 3ZGG; P. A. Lowe, 3ZOO; D. Seedsman, 3ZIE.

WESTERN ZONE

Herb 3AJJ, who has been in our zone for the past few years, will soon be leaving us. He is going to Melbourne where he will be employed at one of the metropolitan t.v. stations. We are sorry Herb is leaving us but wish him all the best of luck in his future occupation.

Keith 3AKP has recently acquired a shop in Main St., Stawell, and he will be conducting a radio sales and service therein, so we also wish Keith all the best in his future business career.

NORTH EASTERN ZONE

Bob 3UW using mobile gear and when the rain shorts out the coil on the aerial he throws a length of wire over the nearest hedge; puts out quite a good signal, too. Things at Smoko are just so so with Arthur having to repair tanks and bucket water while they are under repair, however it hasn't stopped Arthur working DX on 80 and 20 mx. Quite a few antenna changes as well; better have good modulation when contacting Arthur as he has hi-fi speakers on his rx. 3AHO received his DXCC for both s.s.b. and a.m.; how do you manage to get the confirmations, Bill?

Winter Convention is now postponed for this year, but you can expect the Annual Convention to be in November—date to be decided.

3UW expects to get on the zone hook-up soon with 150 watts. Not many get on the hook-up lately—3WQ, 3AXW, 3AKL, 3AUL being among the regulars; Bruce 3AGG managed it one night also. Ken 3KE has the wog, however that is no excuse to kid me on to 40 mc and not come up to talk to me when I do! Think I will go back to 20 mx. The only one in the zone who is game to talk to me is the Secretary. Film tins still come this way for the Benalla and district news. George 3GD still working the bands consistently, nice signal too. Peter 3APF still experimenting with t.v. reception. Sid 3CI managed to get a quad up for ten metres and enjoying quite a few contacts from his new QTH. The rest of the antenna farm is still to be erected. Ted 3AOB also playing around with t.v. antennae. Like to welcome 3ZIM, of Toolamba, who I understand is playing around with 288 Mc.

SOUTH WESTERN ZONE

The zone seems to still be very busy, quite a lot of activity on the various bands. The zone has had rather a black cloud passed over it recently owing to the loss of Bill Barrett, 3WT, of Geelong, who was a foundation member of the Geelong Radio Club. To his relatives we all pass on our deepest sympathy.

Bill 3APW has left the zone and is now in the metropolitan area. We were very sorry to hear that Bill was leaving us as he was also a good member of Geelong Club.

Well chaps don't forget the South Western Zone Convention to be held in Warrnambool.

31st October-1st November. There is plenty of nice motels for those who require same; price is right. Gordon 3AGE is in a new business and only gets on the bands when Bill Wines talks him into it; good luck in your new venture, Gordon, from all the Zone.

QUEENSLAND

MARYBOROUGH

4DJ working on d.s.b. and voice-controlled transmissions with good results. Is also building xtal controlled converters. Graham received a QSL from Mars so is now working for the W.A.P. (Worked All Planets) award. 4CB has repaired his G4ZU and is again working on 21 and 28 Mc.; Arch is now modulating deeper. 4BG is breeding budgerigars in his shack; training one to call "CQ DX" for you, Ron?

4AI recorded greetings from six DX stations and played them at an Apex International Goodwill Dinner. This received good publicity in the local press. Alan has built a xtal converter for 21 Mc. and is now building a 3 el. beam for 21. Has also been using a 14 Mc. dipole, and has been grinding xtals into the bands (and sometimes out of them). Alan had the bad luck to have his final take off when he was out of the shack and now has for sale an open plate transformer and choke and a melted 6146. Any offers?

EX-VK2AJF now resident here, but not yet active.

TOWNSVILLE

At the last meeting of the T.A.R.C. I was taken to task because I did not mention the name of the club when giving reports on the meetings. Apparently some think I may be trying to report doings of a golf club or fishing notes in a radio magazine. The main business of the meeting was taken up with reports from various members. Rex 4LR (at home on vacation) told of how he attended meetings in Brisbane, and expressed very forcibly his views on the raw deal the country chaps have been getting. Mike 4OM (just returned from Melbourne) delivered the various pieces of gear he purchased for members and arranged to open a credit account with one of the firms. Bob 4RW reported on doings within the W.I.A. and spoke for some time on F.A.S.C. and again asked that those who did not subscribe to the I.T.U. Fund to do so and that although the T.A.R.C. did make a donation, it did not bar each Amateur from making a personal donation. Just about 50 per cent. have done so. All donors being ticked off in my little book. It was also decided that "CQ" Anthology be purchased for the library and that Rex 4LR Brian 4ZBW and Bill 4ZBE represent our club at the Palm Beach Convention in June.

As 50 Mc. activity is waning due to fading, the local boys are operating 144 Mc. and have made the grade to Charters Towers (60 miles air line), and Collin 4CE and Vern 4LK from there have worked Ken 4ZAK here in T'ville.

Bill W6AL has visited many Amateurs in the various towns. He called at my shack on the way south from T'ville. Says the boys along the way were real "Guys" and turned it on for him.

John 4DD out of hospital convalescing; did not visit you John because was sick myself for three weeks. Charlie 4BQ at long last broke the silence barrier and had a QSO on 7 Mc. with 4RW; needs to have an injection from a gramophone needle, otherwise will not make the "ragchewers club". Claude 4UX now in Ayr and has promised to abduct John 4DK for next meeting. John very busy in private practice and not much time for radio. Arthur 4FE again shifted—now the northernmost VK4 on the Mainland; called in on Owen 4OV at Mt. Isa on the way to Normanton.

Nick 4WT shifted to Wulguru to cause local QRM; has been visiting far north and called in on Basil 4ZW. Brian 4ZBW dismantling gear en route to Darwin. How about getting around Eddie 5OW, George 5NE, Roy 5EV and start a club up there and write a few notes on the doings? Certainly a thankless job as zone correspondents come and go, but we like to know what is happening around our shores.

Basil sends along the doings from Cairns. Activity at present at a very low ebb, just the usual old stayers. Bob 4TK comes on daily for sked, talks about going off the air again, because he is too busy. Claude 4ZY and Bill 4XM ragchew on old times regularly on 7 Mc. The highlight of the month was the visit by W6AL; what a gentleman this chap is. Certainly stirred me up, even got me thinking about s.s.b. One night he showed coloured slides when the visitors included 4AX Roy and KYL. Claude Vautin and Affon Westcott journeyed from Atherton to be present. I got to bed at 1.30 a.m. Basil hopes to get

Wireless Institute of Australia

Victorian Division

A.O.C.P. CLASS

commences

THURSDAY, 30th JULY, '59

Theory is held on Monday evenings, and Morse and Regulations on Thursday evenings from 8 to 10 p.m.

Persons desirous of being enrolled should communicate with—
Secretary W.I.A., Victorian Division, P.O. Box 36, East Melbourne (Phone: JA 3535, 9 a.m. to 4 p.m.) or the Class Manager on either of the above evenings.

the boys together and visit Townsville for a special meeting some Saturday night. Also toys with the idea of operating a station at the local trades and industries fair.

SOUTH AUSTRALIA

We must surely all thank the V.h.f. Section for bringing forward the excellent programme provided at the last monthly meeting, when, under the guidance of Les Harper, we were steered through, by word and films, the complexities of radio aids to navigation, particularly as applied to the Australian aviation needs.

It was obvious that Les had a lot more he would like to have told us, but he did well to condense such a vast subject into the time limit, yet giving all the pertinent details necessary to grasp "why and what" of the aids dealt with, which ranged from the humble radio compass to distance measuring equipment and blind landing equipment.

Films ranged from a set of slides of a trip he did to Ayers Rock with dead reckoning as the navigation method, to movies showing actual "talk down" by advanced radar methods, with all between.

Wall charts added to interest and made it easier for him to explain in detail a number of terms not all known to "non flying" types, as indeed most of us always will be.

The responsibility of "those up front" and "the boys on the ground" who maintain these things is fairly great, yet what a comfort to those who use the air, to know the skills that are placed for safe air travel.

One mistake Les did make was in mentioning a certain b.c. station that was heard "loud and clear" at Townsville and as a result an ideal station for d.f. work. It was almost impossible to contain Warwick after that, in fact for several minutes the sound of bustling waistcoat buttons was all we could hear.

Naturally he, Warwick 5FS, had to pass the vote of thanks which he did without using more than 500 words or so. (Gosh, is that all Editor).

The various important matters arising from the forthcoming I.T.U. Conference and speeches by persons associated with the build up to that end have added some confidence to the matter of W.I.A. observer attendance. Thanks to VK3 Sunday Broadcasts on 20 mx we have been able to keep in touch, and have heard the various addresses. That's an idea for the future, what about a W.I.A. Federal Broadcast on 20 at regular intervals, would keep country members, which is a fair proportion of our numbers, up to date on Federal matters.

Whilst on the matter, if you have not as yet sent your sub. in for I.T.U. Fund, don't delay any longer, send direct or through the Divisional Secretary or Treasurer.

We have a new Treasurer in Les Goldfinch, who has stepped into the vacancy caused by resignation of Clem Appleby who had to vacate on pressure of duties elsewhere; can't give you Les' address as yet but he is closely associated with Secretary John, so address c/o. Box 1234 will find Les OK.

QSL distribution, in hands of George 5RX, address 27 Belair Rd., West Mitcham, is a bit slow in the last few months. Quite a few fellows don't collect theirs at the meetings, or who don't get along anyway, so George is accumulating quite a quantity. Make it easier fellows and send along a self addressed stamped envelope to George for your cards, and when you get one lot send another envelope, to keep the files clear. There are quite a lot to be distributed and some of those rare ones you have been waiting for might be there waiting for you.

Dudley 2DQ, a VK5 Division member, dropped in on a QSO recently, using a s.s.b. rig generating on fundamental frequency, the advantages of which offer themselves for others to follow. Dudley happens to be a pal of Doc SMD, having found out if that's a good thing or a bad thing, but in the course of the QSO he was asked by a VK3 a question re "Doc" so Dudley described Doc's profession, not medical, but "curing souls," can you beat that Pansy?

Dropped in on Hurtle 5HW, recently, and found him investigating the mysteries of a prop pitch motor, and coaxing its works to accept some grease. A nice set-up at that QTH with plenty of evidence of success on DX judging by the many Award Certificates adorning the walls. A separate room built for the job and at the foot of the tower, provides a good layout and short leads from the full sized 3 el. on 20. Home-brew gear puts out a very potent signal—mostly on 20—with an AR7 rx as the hearing aid. A very cosy set-up for winter also, from heat from a fuel fired room heater; a junior op. becoming interested who may share the rig some day.

Slow morse practice from Doc SMD at 9 p.m. each Sunday on 80 still attracts great interest,

you will remember Tom 5TL did this whilst Doc was on vacation. A good service to those gaining speed, and for those who want some really fast c.w. call him after 9.30.

Burnie 5WC advises their new shack not yet passed the drawing board stage, still using his home QTH and a good signal, heard often on 40. Chas. 5ON gave a burst recently after a fair spell, reason not known but nice to hear the voice again. Ron 5FY at Elizabeth vying with Tubby 5NO for those rare ones on 15. Heard occasionally on 40, mostly Sunday mornings. Reg 5RR continues to make a good number of contacts on d.s.b. and now finds himself somewhat of an authority on that mode of transmission, that is, judging by the queries he gets and the number of fellows who are following his lead.

Had any more callers lately Athol 5LQ? Not heard on 40 lately, too busy on 15 c.w. maybe. Those of us who growl about conditions on 40 these days could take a lesson from Luke 5LL and Frank 5MZ and perhaps Carl 6SS who seem to make it work for them each night to VK3, perhaps they have a special "duet," but conditions or not they seem to make it. Cheers Reg and Jim, Heard that Ern 5EN was on 40 recently, heat up the rig more often Ern, don't let the one-eyed monster take over. Where is that melodious Rex 6DO voice lately? Too much painting or hi-fi?

TASMANIA

Our congratulations go to Ken 7KM on the occasion of his recent marriage and as well, on the gaining of his Doctor of Philosophy Degree at the University. As Ken is the recipient of a scholarship which will take him to the Massachusetts Institute of Technology for several years to further his studies into cosmic rays, this Division was pleased to elect him an honorary member during his absence. Our congratulations are also due to George 7GC and his 7XL on the acquisition of an harmonic. Yet more congrats., this time to Roy Emmett on obtaining his limited license at the beginning of June.

Any one of us would have been delighted to be called by EL4A, but Jack 7JB was more delighted than most, because it meant he has now worked all Zones. Very good work, OM. Max 7MX has recently put up a new antenna, strictly in accordance with the handbook. What is more, it seems to be working strictly in accordance with what the handbook claims, judging from the reports he is receiving these days. 7FH has been heard putting in a strong signal in the south and the modulation sounds good too. Harold 7MZ recently got a modulator working very nicely, a new departure for you. We hope, Harold, that the hook-up wire you used was not out of the keying circuit.

Several VK7 stations were very busy about the middle of May exchanging numbers with ZLs on the 80 mx band in their Sangster Shield Contest for low powered stations. Judging from the number of ZLs to be heard with good signals, this Contest clearly demonstrated that high power in itself is not necessarily the answer to getting out successfully, but rather that efficiency, both in tx and antenna, do play a significant part.

The QSL manager has had a very busy time in May, despatching the record number of 771 outward cards. Some "personality" stations have been heard in VK7 during May. George VE2LI during our QSO on 24th May asked me to convey his very 73 to his numerous Tasmanian friends. Obe W8DSO, QSL manager for the 9th district, tells me he handles about 3000 cards a week. Chive VK0CC has been putting in a wonderful signal on 80 mx. Five mobile marine stations have been active, a GM3 on 80 mx, an OZ4 on 40 mx, and three Ws on 15 mx. Don W1TS has appeared in print in "QST" in recent months.

2 mx activity is receiving quite a boost with the attempts by 7ZAK and 7MY to establish contact with 7BQ and 7LZ in the north. We hope that there will be sufficient heat generated by the portable gear on the top of Mt. Wellington to melt the ice of the antennae chaps. Alan 7MY has a new tx on the air in which a pair of 6146s modulate an 813 in the final. The whole rig is band switched.

Seven Associate Members were elected at the June meeting of the Division. All of these chaps are currently doing the A.O.C.P. course at the Technical College. A panel of names was suggested at the June meeting out of which, it is hoped, Council will be able to select a balanced and thoroughly efficient group to compose the Federal Contest Committee, after obtaining their appointment from Federal Council. We compliment the VK5 Division for their initiative in naming July as their 80 mx contest month. I shall certainly be looking for VK9 contacts on that band during that month.—ZZZ.

HAMADS

1/- per line, minimum 3/-.

Advertisements under this heading will only be accepted from Institute Members who desire to dispose of equipment which is their own personal property. Copy must be received by 8th of the month, and remittance must accompany advertisement. Calculation of cost is based on an average of six words a line. Dealers' advertisements not accepted in this column.

FOR SALE: There is still a lot of first class parts and equipment available. Write J. K. Herd, 6 Balcombe Street, Mornington, Vic.

SELL: As new Bendix Radio Control Box fitted with 5-pole push-button switches, 5 bezels with globes and multi contact by key switch. Posted for 25/-, 6 volt vibrator power supply, 200v., filtered output, ideal car radio, etc. No use since bought. Posted for £3. K. A. Robertson, Port Albert, Vic.

SELLING Everything: National HRO. £60. Halcrafters SX28, £70. Band switched (10, 15, 20, 40, 80 mx) table-top 60w. phone and c.w. Xmitter, relay operated, £55. 150w. phone and c.w. Xmitter, relay operated, £65. Xtal microphones, amplifiers, transformers, power supplies, etc. Circuits of above receivers and xmitters. No junk. Accept offers on everything. L. Hoobin, 56 Reserve Rd., Beaumaris, Vic.

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SELL: Philips Signal Generator Type TA101C, beautiful condition, £22/10/0. Also Portable Typewriter, latest model, absolutely new, £32/10/0. Sell or swap for good Communications Rx or other suitable Radio Gear. M. J. O'Brien, C/o. P.O. San Remo, Vic.

SELL: Type 3 Mk. 2 Transceiver, as new condition, £35. Communication Receiver, BC348R, 1st class order, £35. Grey crackle finish Metal Cabinet, 22" wide, 18" deep, 3' 6" high, door back and front, drilled for standard rack mounting, £10. R. Jepson, 24 Tennyson St., Highett, Vic. (Phone: 93-6505).

SELL: Complete A. & R. 75 watt Class B Modulator with tubes and plate current meter, less power supply, £25. R. H. Cunningham, 384 Glenferrie Road, Malvern, Vic. (Phone: 50-6397).

WANTED: MN26C Bendix Radio Compass Rx and/or accessories. Pref. unconverted. Also Radio Corp. RC8 Tx-Rx complete. M. J. O'Brien, C/o. P.O. San Remo, Vic.

WANTED: Clean outer cover for Type T.U. Tuning Unit. Price, etc., to L. A. Deane, 21 Davenport Terrace, Hazelwood Park, S.A.

WANTED: Mark III. Type H Field Telephone with Hand Generator. Price, etc., to L. Brown, "Norwyn," Glenfern Rd., Upwey, Vic. (Phone Belgrave 2363)

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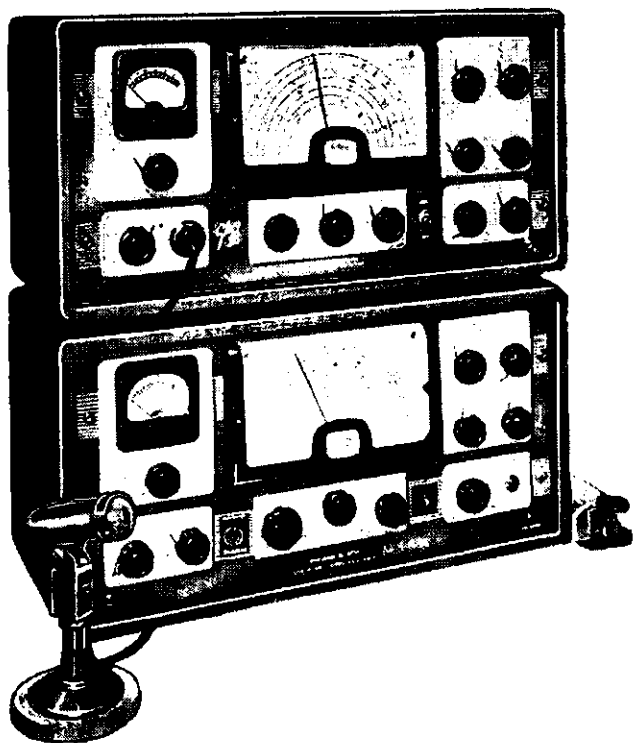
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3432.5	5551.55	6625	8025
3450	5635	6650	8025.5
3460	5660	6780	8026.5
3467	5706.67	6815	8050
3731	5725	6850	8075
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3990	5770	7055.5	8173.333
4035	5773.333	7171	8175
4055	5775	7174	8200
4096.6	5806.7	7197.1	8220
4130	5840.000	7198	8225
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EDITORIAL



NATIONAL FIELD DAY

It is inexplicable why the National Field Day Contest has never become very popular in Australia. The Field Day event in the U.S.A. and in Britain appears to be one of the most popular Amateur events of the year. Where does our own N.F.D. Contest fall down? Our Federal Contest Committee have done their utmost to make this event popular but with no apparent effect. Are the rules too restrictive? Is the effort of gathering your gear together and "going bush" for the week-end too great? Prizes have been offered, mobile participation included, DX working incorporated and even large bonus points offered for v.h.f. contacts—all to no avail. The entries still do not rise above the odd dozen or so, who in the main seem to be the same participants year after year.

This Contest has now reached the stage when it must be dropped from our Calendar of Contests or something done to increase its popularity. The importance of this contest as seen at the time of its inauguration was to encourage Amateurs everywhere in Australia to build and experiment with small portable equipment so that in the event of an emergency a large number of portable stations would be available at a few minutes notice to pack up and operate anywhere on battery or emergency power. This concept has not changed—in fact, it is probably more important now than it was originally. In addition, with the advent of the transistor, the task of making small highly-portable equipment is an easier one.

It is certain that most Amateurs today will agree that one of their few reasons for existence, from a civic or public utility point of view,

is in their oft-stated speed of getting a line of communication established between two points and being able to quickly pack up and move to another location. Is this statement really true? It would seem from the lack of interest in a contest designed to encourage this type of operation, that it is not. There is only one way of disputing this statement—let us hear your call on the air at the next Field Day.

If, on the other hand, it is something in the rules of the contest which prevents a lack of interest on your part, there is a ready reply to that—write to your Division explaining where the rules fall down, and why you don't intend to enter. Your constructive suggestions are the only answer to allegations of laziness, poor rules or other reasons. The matter appears to be in your hands—this contest takes a lot of time to organise and if it is not required, say so—the Contest Committee will be only too pleased to devote their time and energies to something else.

Your Federal Executive, however, does think a National Field Day Contest is important, for therein may lie our future "raison d'être" or one of the few reasons there will be offered for the existence of the Amateur Service in the world of growing commercialism in Communications. Make a united effort now to prove this contest is worthwhile, and to create the same popularity that exists with the Remembrance Day Contest. The amended rules proposed by the new Federal Contest Committee are now with your Divisions for comment—now is the time for you to have your say in this matter—do so without delay.

W.T.S.M.
(Now turn to Page 12 for Amended Rules.)

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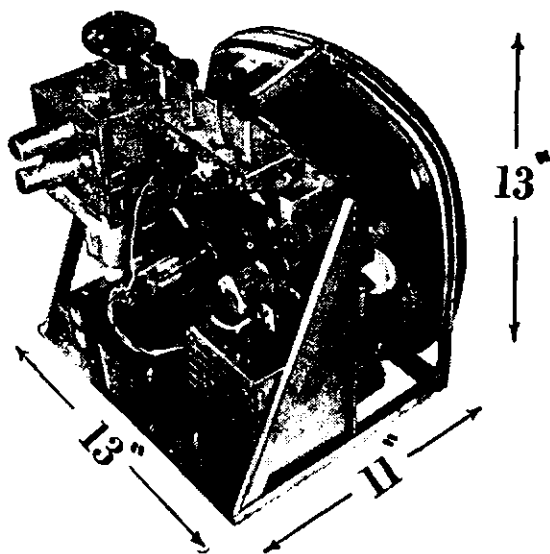
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Tropospheric Propagation at V.H.F.

PART TWO

ALAN ELLIOTT,* VK3AEL

IN the first part of this article an outline of the conditions necessary for long distance tropospheric propagation and the meteorological events which could produce them were given. Now let us examine the weather maps and radiosonde graphs of the atmosphere on some occasions when the two metre band was open. The graphs have been traced from soundings made from Laverton, near Melbourne, during the early afternoon of the days indicated. The water vapour scale is not shown because it varies with altitude thus requiring specially ruled paper; however, the readings of mixing ratio in grams per kilogram are shown at significant points. The graphs should be interpreted with some caution be-

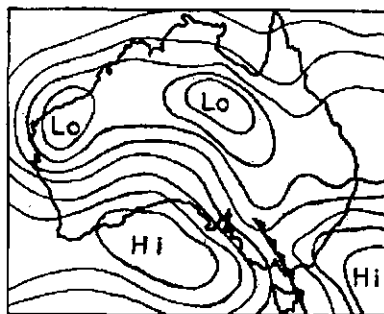


Fig 5a 23 Feb. 1956

and 5,600 feet, an average of 2.9°C. per 100 feet. A small humidity lapse was present also. Some of the charts indicated humidity lapse only. The observations apply to two metres, and are limited to south-eastern Australia where I have first-hand knowledge of conditions.

17th to 18th February, 1957

A weather map which is typical of the chart during widespread two metre DX is given in Fig. 4a. A high pressure ridge existed over Tasmania with the trailing edge spreading out very extensively over South and Central Australia. The low pressure off the eastern coast was a cyclone which moved southwards and retarded the easterly progress of the high, thus favouring subsidence. The evenings of the 17th and 18th February, 1957, will long be remembered by the v.h.f. gang in the area covered by south-eastern South Australia, Victoria and Northern Tasmania where signals were moderately strong to very strong in all directions. On the 18th, contacts were made between Ouyen in north-west Victoria and Launceston on the north coast of Tasmania over a distance of 512 miles. Melbourne television stations were received over a wide area. The weather was fine with some temperatures in the nineties.

The radiosonde chart, Fig. 4b, gives the story of the atmosphere in the afternoon of the 18th. There was a drop in mixing ratio from 9.0 to 1.9 gram per kg. between 1500 and 3300 feet, averaging 0.4 g./kg. per 100 feet. Over the highest 300 feet of this layer there

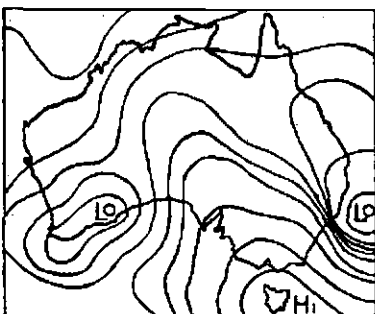
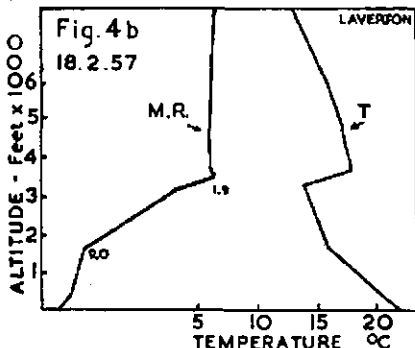


Fig. 4a 18 Feb. 1957

cause of possible instrument errors, the comparatively small number of points plotted and the fact that the soundings were made at the time of day when the band usually is at its lowest ebb. On the original charts the levels were shown in millibars; these have been converted approximately into feet. The minimum requirements for superrefraction are usually quoted as + 2.8°C. per 100 feet rise for temperature or - 0.5 gram per kg. per 100 feet for water vapour content.



It was noted during the examination of scores of radiosonde charts of "good" days that on very few occasions was the temperature inversion alone great enough to cause super-refraction. One such day was 12th February, 1956, when there was a rise of temperature from 2.8°C. to 11.5°C. between 5,300

was a temperature rise of 4°C., i.e. 1.3°C. per 100 feet, giving a total gradient about 25% more than the minimum required. Also, as signals improved somewhat during the evening, surface cooling probably was an additional factor.

23rd February, 1956

A brief opening across Bass Strait followed shortly after a mild cool change without rain on 23rd February, 1956. The radiosonde chart, Fig. 5b, is interesting. There is a sharp temperature rise of 9°C. from 2,400 to 3,000 feet, i.e. 1.5°C. per 100 feet, but the effect of this inversion was more than cancelled by an increase of mixing ratio of 0.4 g./kg. in the same layer.

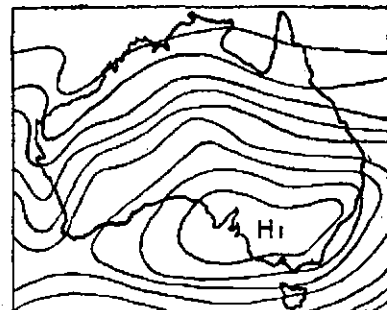
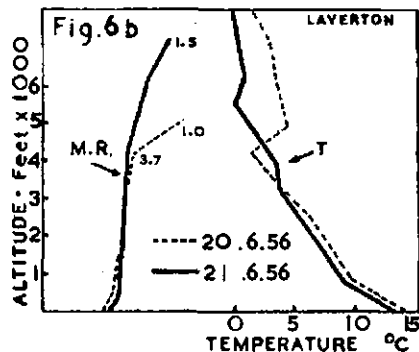


Fig. 6a 21 June 1956

Thus at 3,000 feet the conditions were worse than normal. From 3,000 to 3,700 feet the mixing ratio decreased by about 0.45 g./kg. per 100 feet, the total refraction up to 3,700 feet was about one-third less than necessary. When the contacts were made several hours later there must have been an alteration in the ratio of positive and negative factors.

20th to 22nd June, 1956

Wintertime DX. During this period signals at night were strong and steady over a large part of Victoria, particularly west of Melbourne. The weather



map shows a high pressure area which moved slowly eastwards during this period bringing fine sunny days and calm cold cloud-less nights with widespread frosts and some fogs, the surface conditions frequently associated

(Continued on Page 11)

* 31 Fenton Street, Ascot Vale, Vic.

H.T. Control Circuit

BY K. B. POUNSETT,* VK2AQJ

THE control circuit used at this station kills several birds with the one stone. It provides:—

1. Protection for the rectifiers.
2. Slow charge rate for filter capacitors.
3. Overload protection.
4. Indicator when h.t. is on.

The operation is as follows: Closing S4, after rectifiers have time to warm up, places h.t. at the h.t. output terminal. Current through the 50K bleeder charges the 100 μ F. capacitor and then after a short delay closes the relay Ry. The relay should be one chosen to operate at the bleeder current. The one in use by me is a disposals one and closes on about 10 mA.

* Flat 22, Seiffert Centre, Lowe St., Queanbeyan, N.S.W.

The short delay allows the filter capacitors to charge slowly due to the 1,000 ohm wire-wound resistor. When the relay operates, the contacts (S2) short this resistor. At the same time contacts S1 close the transformer primary circuit, locking up the system.

Release of S4 now does not effect the circuit and contacts S3 complete the indicator circuit, showing that the high voltage supply is on.

A short in the h.t. circuit causes loss of voltage and subsequent relay hold-in current. The relay drops out and S4 must again be manually operated to obtain h.t. Thus over-load protection is achieved.

Some eye-brows may be raised at the lack of chokes in this circuit, however this is standard practise in s.s.b. transmitter power supplies and the regulation is excellent.

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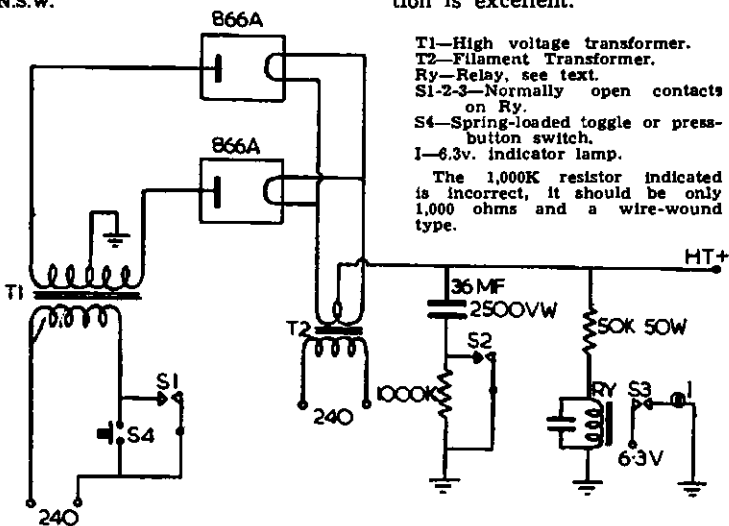
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T1—High voltage transformer.
T2—Filament Transformer.
Ry—Relay, see text.
S1-2-3—Normally open contacts
on Ry.
S4—Spring-loaded toggle or pres-
s-button switch.
I—6.3v. indicator lamp.

The 1,000K resistor indicated
is incorrect, it should be only
1,000 ohms and a wire-wound
type.

HINTS AND KINKS

6BE6 PREAMPLIFIER FOR BOTH HI- AND LO-Z MICROPHONES

Preamplifiers constructed here in the past have always employed either two high-gain tubes of a dual triode in order that both crystal and dynamic (low-output type) microphones could be used.

Recently, while working out design details for a completely new amplifier, the thought occurred that one of the popular r.f. mixer tubes might operate satisfactorily in a single-tube triple-purpose circuit having provision for both xtal and dynamic-mike input and, at the same time, ability to serve as the mixer.

To test this theory, a type 6BE6 pentagrid converter tube was tested in the circuit shown as Fig. 1. After settling on the component values listed, the arrangement actually exceeded my fondest hopes. By connecting the dynamic microphone transformer to grid No. 1 of the tube, and the crystal mike to grid No. 3, not only did a rather neat mixer result, but the over-all gain of the amplifier remained essentially con-

stant regardless of which microphone was used. Apparently, the difference of approximately 20 db. in gain that the No. 1 grid arrangement has over the grid No. 3 circuit compensates for the difference in microphone output levels.

It is reasonably certain that the idea is not completely new, but it is one that I have never seen in print. Perhaps the circuit won't find too much application in Ham band equipment, but it may appeal to Amateurs interested in hi-fi, recording, etc.

—F. L. Mason, KH6OR, "QST" Jan. '58.

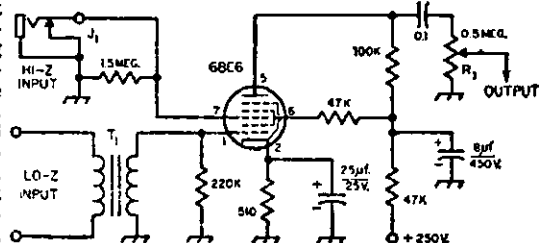


Fig. 1.—KH6OR uses this preamplifier-mixer circuit with both crystal and dynamic microphones. R1 is the gain control for the amplifier stages following the 6BE6. T1 is a dynamic microphone-to-grid transformer. All resistors except R1 are 1/2 watt composition. Capacitors marked with polarity are electrolytic.

SIMPLE SIDEBAND*

PARTS NINE AND TEN

LESTER EARNSHAW, ZLIAAX

AN ALL BAND HETERODYNE UNIT SUITABLE FOR FILTER OR PHASING RIGS

I have long been of the opinion that the modern tendency to throw tubes into a rig quite regardless of cost or complexity is an attitude to be condemned and one of my first acts on receiving a circuit that interests me is to go over it and see if it can be simplified. Yet, I am going to discuss an all band heterodyne unit that itself uses one more tube than the excellent, yet simple, unit described last month. There are times when, if you would have "frills," you must pay for them!

Although last month's system is perhaps one of the most widely used systems in the world of Ham Radio (when used in conjunction with the phasing method of s.s.b. production) it does have one or two disadvantages. I list these as follows:

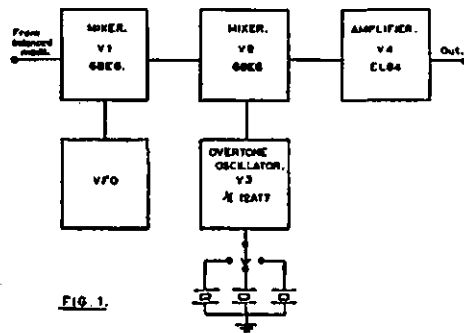


FIG. 1.

The need to multiply the v.f.o. frequency for 40, 15 and 10 metre operation also doubles the v.f.o. frequency instability. A ten cycle drift in a certain period may well be a 30 cycle drift on another band. This is perhaps the major disadvantage.

The tuning rate or kc. per revolution of the v.f.o. knob will vary from band to band.

The required frequency coverage is quite large (up to two megacycles if

the whole of the 10 metre band is to be covered).

Band-changing inverts the sideband depending whether the oscillator is on the low or the high side of the signal.

In favour of the system shown in the block diagram of Fig. 1 and the circuit diagram of Fig. 2 are the following:

Stability of the output signal is that of the v.f.o. for all bands.

The tuning rate is constant and may cover roughly 500 kc. (or 1 megacycle if you would cover the 10 metre band in only two "swipes").

Suitable for filter or phasing type rigs.

It also has disadvantages. These are:

Requires several crystals and more components.

Forty metres will have the sideband inverted. (Lower sideband will become the upper and vice versa.)

The choice is yours. My money is on the latter system and is in fact used at this station.

Describing the System

V1, the first mixer, may be identical with last month's and the v.f.o. may be conventional—perhaps an ARC5 conversion. ("QST", March 1956.) In V1 the v.f.o. is mixed with the s.s.b. signal from the balanced modulators and the output, which is in the range of 3.5 to 4 meg. (may be extended to 4.5 meg. if you would cover the 10 metre band in two "swipes"), is fed to the second mixer V2. On 80 metres V2 acts as an amplifier and the input and output coils of the EL84 are loaded with resistance to reduce its output comparable with that obtained on other bands. The EL84 is an ordinary amplifier operating in Class A.

C1 and C2 may be fixed condensers and the coils slug tuned and also stagger-tuned to give a more or less even response across the band. Alternatively, small trimmers may be wired across the condensers C1 and C2, repeated when large excursions in frequency are

made. As s.s.b. is becoming more popular so it is tending to move away from the spots at the high frequency end of the bands, thus the need to use the trimmer will grow greater. In my own case I have a trimmer across C2 only.

In V2, the second mixer, the output from an overtone crystal oscillator is mixed with the 80 metre signal and converted to the required band exactly as is done in a receiver when double conversion is used. (But in reverse now of course.)

With the exception of the overtone oscillator all circuitry is straight forward. Other tubes may be used in place of the EL84 and 6BE6 if suitable changes are made to the grid and screen grid voltage requirements. Whatever tubes you use, make sure they are stable.

The Overtone Oscillator

This is really the heart of the whole unit. But first I will give you a little history of how this came to be.

When the need was felt for a unit of this type I originally used a 3.5 meg. crystal and endeavoured to operate it on its 3rd, 5th and 7th overtones. This I was able to do, but by the time I got to the 7th overtone the output was so small it was negligible. Also, as the frequency went up so did the frequency instability suffer. Although perhaps the idea had merit it had lots of disadvantages. So then I tried using crystals operating on their fundamentals but multiplied (by 3) in a further stage. This worked fine except that the switching was complex and also the unit produced lots of healthy signals in the output that "didn't ought to be there." The fundamental and second harmonics of the crystals were there in full uniform and these I could see, unless I slew them first, were going to cause me to have a little tet-a-tete with my friend the radio inspector. Thus it was, the idea of using an overtone oscillator because it has no output on its fundamental or second harmonic frequencies, was born. Of course, if you are able to obtain the fundamental crystals at

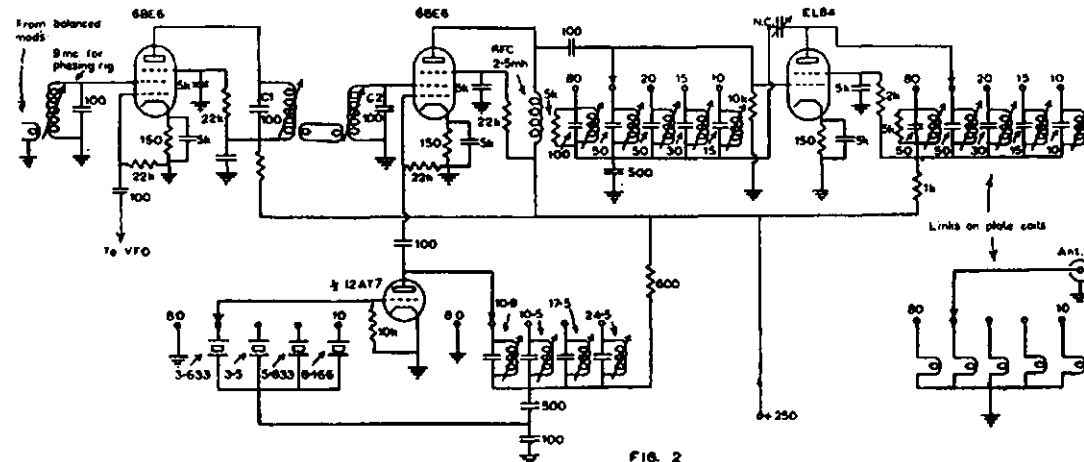


FIG. 2.

The plate decoupling resistor and by-pass condenser of the first 6BE6 mixer are 220 ohms and 0.005 μ F. respectively.

the required output frequency, then you are very lucky indeed and the oscillator may be a conventional straight through job.

And so it was that four chassis and a mile of wire later, after having experimented with various overtone oscillators and mixer circuits, the capacitive feedback type of overtone oscillator was used.

For Output of	Use Crystal	Injection Freq.
3.5 - 4.0 Mc.	nil	nil
6.9 - 7.4 "	3.633 Mc.	10.9 Mc.
14.0 - 14.5 "	3.5 "	10.5 "
21.0 - 21.5 "	5.833 "	17.5 "
28.0 - 28.5 "	8.166 "	24.5 "
28.5 - 29.0 "	8.333 "	25.0 "

The crystals were from W.A.R.B. or disposals sources and I did not have too much difficulty getting them operating on their 3rd overtone. It is as well to know that some crystals may dig their toes in and refuse to budge when operated in this mode. If this is the case, try a different value of feedback condenser C3 and you may kick them into operation.

When operated as overtone oscillators as distinct from operating on a 3rd harmonic, the output frequency may not be exactly three times that marked on the crystal.

Output from the EL84 should be sufficient to drive an 813 ZL Linear to 100 watts and, indeed, on all bands except perhaps 10, there will be a large surplus of drive. This, in my own case, I dissipate in resistors paralleled with the output coils of the EL84.

Coils may be plug-in or band-switched.

Beware!

The output circuits of the EL84 will also contain the oscillator frequencies (24.5 megs. when on 10 metres for example). Make sure the grid circuits of the following tubes are tuned to the correct frequencies.

In conclusion, I mention that I also have a converter attached to my receiver using the identical principle in reverse. All signals are converted to 80 metres and the oscillator is an overtone, exactly as shown. In fact, for a while, I used the one oscillator for both transmitter and receiver.

Further Cautions

Do not attempt to use a 3.5 meg. crystal operating straight through to mix with the 80 metre signal to get to 7 megs. The 3.5 meg. crystal will have a second harmonic which will feed through the 7 meg. circuits nicely. I know, I tried it!

Best operation is had here with a 12AT7. Other tubes had lower output and did not want to function as readily.

A RECEIVER FOR S.S.B., A.M. AND C.W.

The circuit diagram of Fig. 3 shows the receiver in use at this station. It is not pretentious nor expensive and was in fact constructed from ordinarily available parts, many of which came from the junk box, junk sales or ordinary radio service shops. Yet this receiver will perform as well as most of the more expensive American receivers and has, in fact, been operated right alongside a Collins 75A4 and gave almost identical results. To obtain these results there are one or two points I



must explain for these cannot be read from a circuit diagram.

(a) Use a steel chassis. The chassis must be absolutely rigid. In my own case I strengthened the chassis under the oscillator section by running brass channel $\frac{3}{4}$ " deep x $\frac{1}{4}$ " wide from front to back.

(b) The tuning mechanism must be absolutely rigid. There must be no tension between the panel and the tuning condenser. Even if a flexible coupling is used tension here will cause severe drift. My own tuning mechanism is ex-CR100 and bought at a junk sale. An ARC5 (or Command) receiver gang has an excellent gearing arrangement and it is not too difficult to arrange a slide-rule dial arrangement for the normal frequency reading. A logging scale fitted to the tuning shaft will give an excellent means of resetting.

(c) The receiver must not contain switched tuned circuits. The receiver covers 3.5 to 4 megs., and other bands are obtained by using a band-switched crystal controlled converter. This means that all bands will have the same sta-

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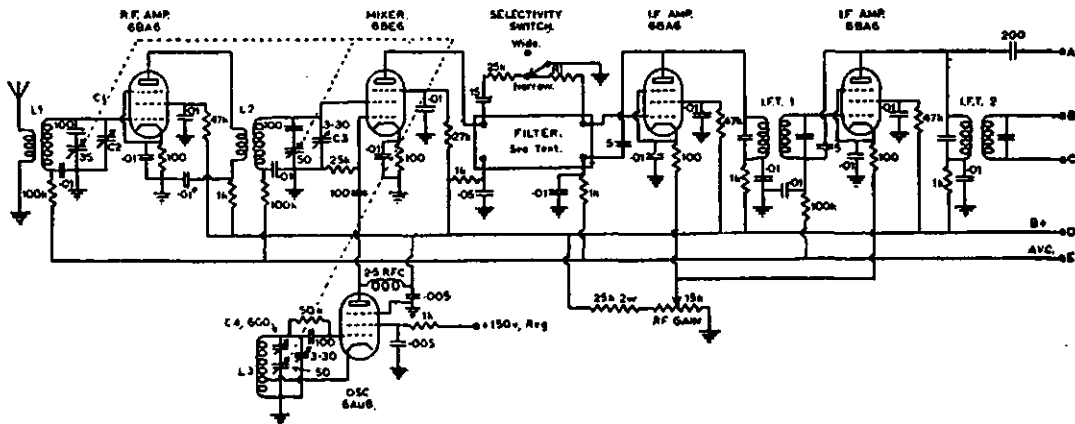
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Fig. 3.

Chassis 11 x 18 x 3 inch steel.
C1—50/50/25 three-gang.
C2—3-20 pF. midget variable (ant. trimmer).
C3—3-30 pF. Philips trimmer.
C4—600 pF. peader.
C5—Approx. 100 pF. Adjust value to obtain approx. Sv. of r.f. from b.i.o. (R.I. probe on v.t.v.m.).

All by-passes disc ceramics. Use silver mica condensers in tuned circuits.

L1—44 turns 34 s.w.g. enamelled on ½ in. diam. form. (ARC5 ceramic former in can). Link 5 turns 38 d.s.c. s.w.g. at bottom L1.
L2—As above. Link 6 turns.



★

bility as 80 metres and 10 metre s.s.b. is no longer a game of hide and seek with the odds in favour of Donald.

(d) The tuning rate of the dial mechanism must be slow. 25 to 50 turns of the tuning knob to cover 3.5 to 4 megs. is about right. Anything faster will make tuning of s.s.b. a hectic business.

(e) Use a large tuning knob of say, 2" diam. This will enable you to "feel" the signals better. You'll know what I mean when you have tried it.

(f) Placement of parts must not allow heating of the local oscillator or b.f.o. components. Keep the heat producing components well away from coils, gang condensers, etc.

Brief Description of Receiver

The front end of this receiver is more or less conventional. The local oscillator, however, is a pentode for good purpose. It was found here that a fluctuating heater voltage caused severe oscillator drift when a triode was used. No difficulty has been experienced with the 6AU6.

A switch by-passes the filter for normal wide reception and the resistor R1 is adjusted in value so that the output or volume of the receiver is the same with the filter in or out. The filter itself is to be the subject of a future article. However, you may if you wish, use a series of back-to-back i.f. transformers in here to obtain better selectivity than that ordinarily obtainable from two i.f. stages.

The crystal controlled converter is also to be part of a future article.

The i.f. amplifiers are conventional in all respects except perhaps for the fact that they are, in this receiver, neutralised. Neutralising is in no way difficult and there are no adjustments to be made. But the value of the neutralising condenser and also the a.v.c. by-pass at the bottoms of the two i.f.'s must remain those stated. Variation of these condensers may cause the stages to oscillate. Proper neutralisation will generally prevent oscillation unless your layout is such that the receiver should really have been a self excited transmitter!

R.f. for the a.v.c. is taken from the plate of the last i.f. tube and not from the secondary of the i.f. transformer as is usual.

Output from the last i.f. is also applied to the grid of the 12AU7 product detector which is used whenever s.s.b. or c.w. would be copied. The switch S1 selects the output from either the diode a.m. second detector or the s.s.b. product detector and connects it to the grid of the 6AV6 audio amplifier.

The 6AV6 drives a conventional 6AQ5 output tube. The 1 meg. resistor from the plate of the 6AV6 to the plate of the 6AQ5 applies inverse feedback.

With the b.f.o. operating but the condenser connecting it to the grid of the product detector removed, there should be only small output and definitely no heterodynes due to the b.f.o. feeding into some unauthorised circuit. With the receiver set up for a.m. but the switch shorted so that the b.f.o. operates, there should be no sign of the b.f.o. getting into the i.f. channel. This is important and you may be called upon to completely shield the b.f.o. portion. Next month I will give the details of the layout used here.

Use normal wiring procedures and remember to watch the earthing points—use one alongside each tube and earth all the associated components to that one point. Don't earth the a.v.c. by-

passes at the i.f.'s themselves but at this one point. The same applies to the plate decoupling condensers.

The operation of the receiver will be covered next month.

TO SAY 73, GOOD LUCK

I only hope that when I die,
There'll still be room left in the sky
For me to send or call CQ,
And say hello to all of you.

It's now close on forty years,
Since through the ether to my ears
Came that morse I never forgot,
Just three things—dot, dash, dot.

My sigs were heard from afar,
Answered by Joe Reed, 2JR.
Nervously I grasped the key,
Excitement surged all over me.

Since that night in '26
I've had some fun, I've had some kicks,
For now there's seventeen thousand
QSOs

In the log at 4DO's.

Good friends I've made by radio,
So I sincerely hope that when I go,
I'll have a mike and key, old pal,
To say 73, good luck—from Hal.

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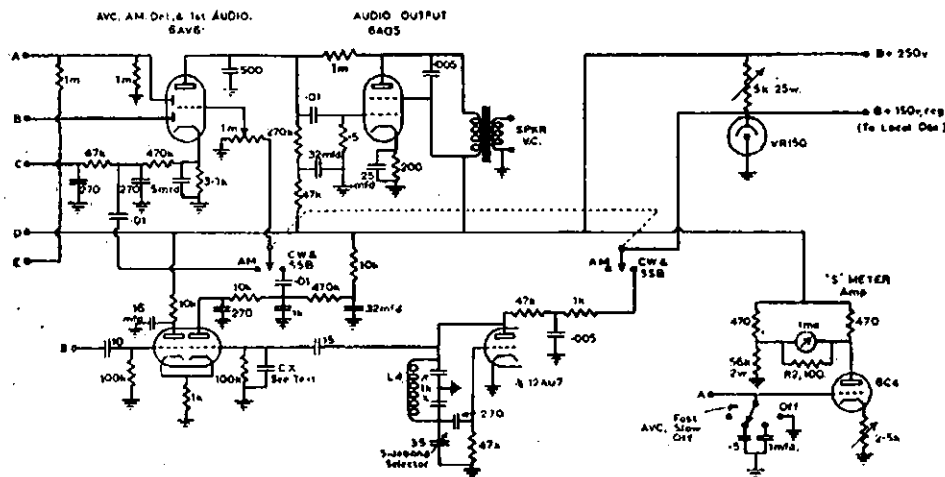
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- L3—Made from ARCS 2830 Kc. i.f. transformer. Former $\frac{3}{8}$ in diam. ceramic. Winding length $\frac{3}{8}$ in. approx. 40 turns. (Original coil used with some turns removed.) Link 12 turns. Original condenser in can is retained and connected across coil sec. This condenser has a capacity of approx. 30 pF.
- L4—Made from i.f. transformer. Remove one winding and take turns from other winding until right frequency is obtained. Listen for harmonics in broadcast receiver; the difference between the harmonics will be the frequency of the b.f.o.
- IFT1 and 2—Philips flat type No. 6840, 475.
- R1—Adjust value to give equal output whether filter is in or out of circuit.
- R2—Approx. 100 ohms. May be a potentiometer. Controls sensitivity of meter.
- Filter—Crystal lattice, or may consist of back-to-back i.f. transformers connected together through approx. 2 pF. capacity. Further details next month.

How Good Are Your R.F. Chokes?

H. F. RUCKERT,* VK2AOU

IT seems to be quite a popular belief that r.f. chokes are so critical and so difficult to design that Amateurs do better by buying these components. The various publications give little information, or the recommended design is so complicated, that there is little chance to build two chokes with the same characteristics. Some other types are so large that they would not fit into most transmitters. To this confusion comes the bad experience that in some cases the p.a. blew up, the choke burnt away with plenty of smoke, or that an 807 driver stage did not give enough power to drive a p.a. with another 807.

Therefore the author investigated the choke problem about 10 years ago and the details were published in the August and September issue of the "CQ" 1949 (now "DL-QTC"). A few years ago "QST" confirmed very well the findings of the writer, but somehow the choke problem still exists.

THE TESTING APPARATUS

Admittance meters (circuit of same shown in Fig. 1) covering the range 0.1 to 100 Mc. allow direct measurement of the high frequency resistance of r.f. chokes, and their series as well as parallel resonances were also determined. The apparatus consists of a signal generator, a calibrated tuned circuit, a low capacity diode with a substitution resistance which is calibrated, and a vacuum tube voltmeter.

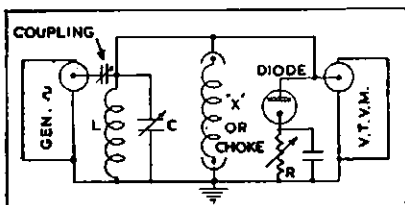


Fig. 1.—Admittance Meter.

The r.f. choke is connected in parallel to the tuned circuit (capacitors, coils, tuned circuits, complete r.f. stages, etc., may also be tested in this way). The tuned circuit is tuned to resonate at the generator frequency selected, with the choke in parallel, until the voltmeter shows maximum deflection. The coupling capacitor is adjusted to get exactly half scale voltmeter reading. The substitution resistance in the cathode lead of the damping diode is now at the maximum value, not allowing d.c. diode current to flow and so practically not representing a load parallel to the tuned circuit.

The choke is now removed, resonance of the test tuned circuit is restored by adjusting the air capacitor for maximum voltmeter reading, and the substitution resistor is so adjusted that again half scale voltmeter deflection occurs. The ohm value of the resistor now represents the h.f. resistance of the choke at this operating frequency.

A low value of 2 to 10K ohms indicates that a series resonance frequency was found if no detuning of the air capacitor was required to restore resonance. A parallel resonance frequency would be indicated if again no detuning was caused by the choke but a very large substitution resistor value was required to bring the voltmeter to half scale reading; this r.f. resistance may reach values as high as 5 megohms.

In this way several "popular" chokes and many Amateur-made chokes were tested by checking at a number of frequencies, especially around the Amateur bands between 1 and 100 Mc. A winding machine to make pie-type coils was also available.

THE PURPOSE OF A CHOKE

The r.f. choke has the purpose of representing as high an r.f. resistance as possible at the operating frequency or frequency band. If we have a p.a. tank circuit which has a load impedance of 3-5K ohms, our choke, which is parallel to the tank in the case of shunt feeding, must have at least a 30 times higher r.f. resistance—e.g. 100K ohms or more if possible. If the choke is operated at one of its series resonances, we shall shunt the tank circuit and the choke has to handle r.f. power until it goes up in smoke. At the same time, we get the wrong load for the p.a. valve and all the input (or a far too large amount of it) remains as dissipation power at the plate and not enough r.f. to the aerial. An overheated valve, red plate and gas instead of a vacuum will be the result. In the case of a driver stage, or p.a. grid choke, insufficient drive to the following valve will be indicated.

If a choke is operated near such resonances, their effectiveness will vary largely when operated over an Amateur band and the transmitter will not function uniformly over the entire band. If we try to avoid shunt feeding and use chokes only in the r.f. cold leads of the plate and grid circuit we may be lucky, but there is the chance of inefficient by-passing and the strong resonances of the choke could still be the reason for t.v.i. due to a resonance falling on a harmonic frequency which may be near a t.v. channel. There is therefore only one safe way and that is to understand the choke and to use the correct design.

MEASURING RESULTS OF TYPICAL R.F. CHOKES

Curve 1 of Fig. 2 shows the r.f. resistance v. frequency of a popular choke consisting of five pie-wound coils of different size (number of turns and inductance). The "expert" who designed this choke claimed that this is the best way to prevent individual resonances of the various coils from showing up. As we can see, the resonances are still there and this choke could not be worse, because every coil has its own series and parallel resonances.

These "Xmas tree" type of chokes cannot be recommended at all. Some twenty chokes of this type (with different numbers of turns and coils) were tried, but the results were always absolutely useless. Curve 1 shows that even at parallel resonances the resistance is too low, indicating that the inductance of 0.6 mH. is already too much for frequencies above 10 Mc. We can now imagine how little effective the popular 2.5 mH. will be.

The next choke (Curve 2, Fig. 2) had four identical pie-wound coils, but the inductance was very high (4 mH.). The resistance is even low at 3 Mc. and inadequate at higher frequencies.

We now tried a small choke (Curve 3) of $\frac{1}{4}$ " diameter and $\frac{1}{4}$ " long which had a small iron dust core. The inductance was only 33 μ H. Having one coil only, the parallel resonance was at 30 Mc. and a value of about 2 megohm was achieved. This simple and small choke was therefore very much better than the expensive types. This choke had only 17 μ H. inductance after removing the slug.

Some more tests were made with pie-wound chokes using identical coils (Curve 4) in an endeavour to obtain less resonances. This example was a choke with seven coils having 20 turns each. Due to the identical windings, the combined series resonance was extremely sharp, being at a common frequency near 28 Mc. This choke would cause some trouble if connected to a 28 Mc. p.a. stage, because the tank or grid would be shorted out.

After many tests, a small choke with four identical pie-wound coils (Curve 5) having 40 turns each was developed. The core was a two-watt resistor after the carbon was removed. By adjusting the distance between the coils to about $\frac{1}{4}$ " and selecting a critical distance to the metal cap at the ends of the core, it was possible to have only one series resonance near 21 Mc. and this one was no longer deep (100K ohms). The inductance was only 120 μ H., which is just the right "L" for chokes covering the range 3 to 60 Mc. The four coils were glued to the ceramic resistor body with polystyrene.

In a 150-watt transmitter one of these chokes was connected in the B+ line at the cold end of the p.a. tank. The transmitter got fairly warm during contests and after some time the writer had a look inside the transmitter and found that the magnetic pulse, when throwing the stand-by switch, had pushed all coils close together at one end of the core. These pie-wound coils have also the disadvantage that in shunt fed circuits with high r.f. voltage (modulated p.a.) the volts per layer easily become so high that voltage breakdown occurs between wires of different layers and the choke burns up.

The conclusion was that the old rule of thumb—use as much wire for the

* 28 Berrillie Road, Beverly Hill, N.S.W.

choke as a quarter-wavelength of the operating band is (or middle of range) and wind a single layer coil with a length two to three times the diameter — is still the best method.

A PRACTICAL CHOKE

For a 3.5 to 30 Mc. transmitter, the choke parallel to the tank (hot end of pi-coupler to B+) may have the following dimensions: Diameter 0.8", the length of coil winding 2.4", 90 turns of 23 gauge wire; $L = 50 \mu\text{H}$. The wire should be enamel and 2 x silk covered, thick enough to carry the d.c. plate current plus the audio modulation current without getting warm. This choke has no resonance holes between 3.5 and 30 Mc.

After installing the choke in the transmitter, we can easily check the performance. A small neon lamp may be held near the choke and by moving it down from the hot to the cold end, the light should become less and less. If the light extinguishes before we reach the end of the choke, we have most likely too many turns. But if the light is still bright with the globe near the cold end, then the choke is too small. When doing this test with the transmitter on and running high power, it is advisable to keep one hand in the pocket, and the neon globe must only be held by the glass.

With the transmitter switched off we also can check the choke for resonances with the g.d.o. There should be no dip near any Amateur band.

AMATEUR STATION AT TRADE FAIR

It is proposed to install a Ham station at the Trades and Industries Fair to be held at Cairns, Qld., on 1st, 2nd and 3rd October. The station will be operated under the call sign of VK4ZW and it is hoped to work on 7, 14 and 21 Mc.

All Amateurs in Cairns will do the operating and will be seeking contacts with other Amateur Radio stations. It is requested that Hams make a point of looking out for VK4ZW while operating at the Fair and give that station many contacts.

It is anticipated that a special QSL card will be printed and sent out for all contacts made.

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Mc.	E. AUSTRALIA — W. EUROPE S.E.												16c.	
0	2	4	8	8	10	12	14	16	18	20	22	24	24	45
48	GMT													45
28	-----													28
21	-----													21
14	-----													14
7	-----													7
Mc.	E. AUSTRALIA — W. EUROPE L.R.												16c.	
0	2	4	6	8	10	12	14	16	18	20	22	24	24	45
45	-----													45
28	-----													28
21	-----													21
14	-----													14
7	-----													7
Mc.	E. AUSTRALIA — MEDITERRANEAN												16c.	
0	2	4	6	8	10	12	14	16	18	20	22	24	24	45
45	-----													45
28	-----													28
21	-----													21
14	-----													14
7	-----													7
Mc.	E. AUSTRALIA — N.W. U.S.A.												16c.	
0	2	4	6	8	10	12	14	16	18	20	22	24	24	45
45	-----													45
28	-----													28
21	-----													21
14	-----													14
7	-----													7
Mc.	E. AUSTRALIA — N.E. U.S.A. S.E.												16c.	
0	2	4	6	8	10	12	14	16	18	20	22	24	24	45
45	-----													45
28	-----													28
21	-----													21
14	-----													14
7	-----													7
Mc.	E. AUSTRALIA — N.E. U.S.A. L.R.												16c.	
0	2	4	6	8	10	12	14	16	18	20	22	24	24	45
45	-----													45
28	-----													28
21	-----													21
14	-----													14
7	-----													7
Mc.	E. AUSTRALIA — CENTRAL AMERICA												16c.	
0	2	4	6	8	10	12	14	16	18	20	22	24	24	45
45	-----													45
28	-----													28
21	-----													21
14	-----													14
7	-----													7
Mc.	E. AUSTRALIA — S. AFRICA												16c.	
0	2	4	6	8	10	12	14	16	18	20	22	24	24	45
45	-----													45
28	-----													28
21	-----													21
14	-----													14
7	-----													7
Mc.	E. AUSTRALIA — FAR EAST												16c.	
0	2	4	6	8	10	12	14	16	18	20	22	24	24	45
45	-----													45
28	-----													28
21	-----													21
14	-----													14
7	-----													7
Mc.	W. AUSTRALIA — W. EUROPE												16c.	
0	2	4	6	8	10	12	14	16	18	20	22	24	24	45
45	-----													45
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21	-----													21
14	-----													14
7	-----													7
Mc.	W. AUSTRALIA — N.W. U.S.A.												16c.	
0	2	4	6	8	10	12	14	16	18	20	22	24	24	45
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Mc.	W. AUSTRALIA — N.E. U.S.A.												16c.	
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Mc.	W. AUSTRALIA — S. AFRICA												16c.	
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Mc.	W. AUSTRALIA — FAR EAST												16c.	
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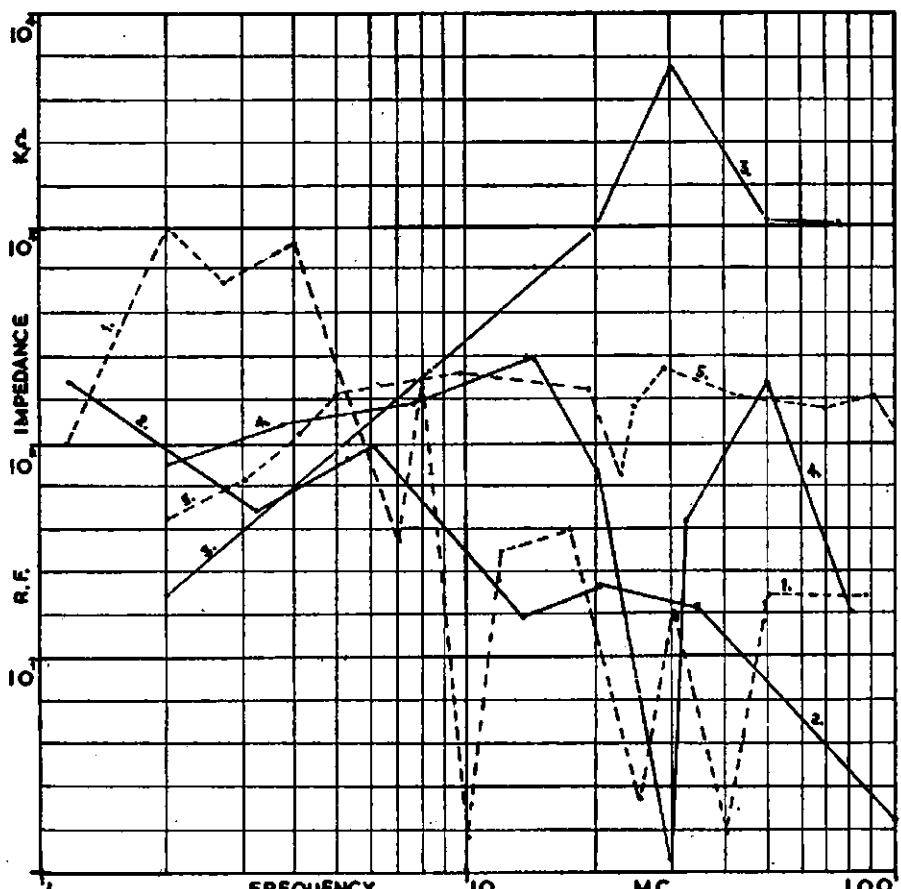


Fig. 2.—R.F. Resistance v. Frequency Chart.

BOOKS OF THE YEAR FOR RADIO & T.V. ENTHUSIASTS

★ A.R.R.L. HANDBOOK, 1959 Edition	46/3 plus 2/- post.
★ RADIO HANDBOOK, 15th Edition	85/6 „ 2/- „
★ BASIC TELEVISION, by Grob, 2nd Edition	66/9 „ 2/- „
★ RADIO DATA CHARTS, by Beatty & Sowerby, 5th Edition	12/6 „ 1/- „
★ WORLD RADIO HANDBOOK FOR LISTENERS, 1959 Edition	24/3 „ 9d. „
★ BEAM ANTENNA HANDBOOK, by Orr	32/6 „ 6d. „
★ CARE AND REPAIR OF HI-FI, by Feldman	31/- „ 1/- „
★ RADIOTRON DESIGNER'S HANDBOOK, by Langford Smith	55/- „ 2/6 „
★ T.V. SERVICING GUIDE, by Deane & Young	20/9 „ 1/- „
★ G.E. TRANSISTOR MANUAL	20/3 „ 1/- „
★ RADIO VALVE DATA—WIRELESS WORLD	8/6 „ 9d. „

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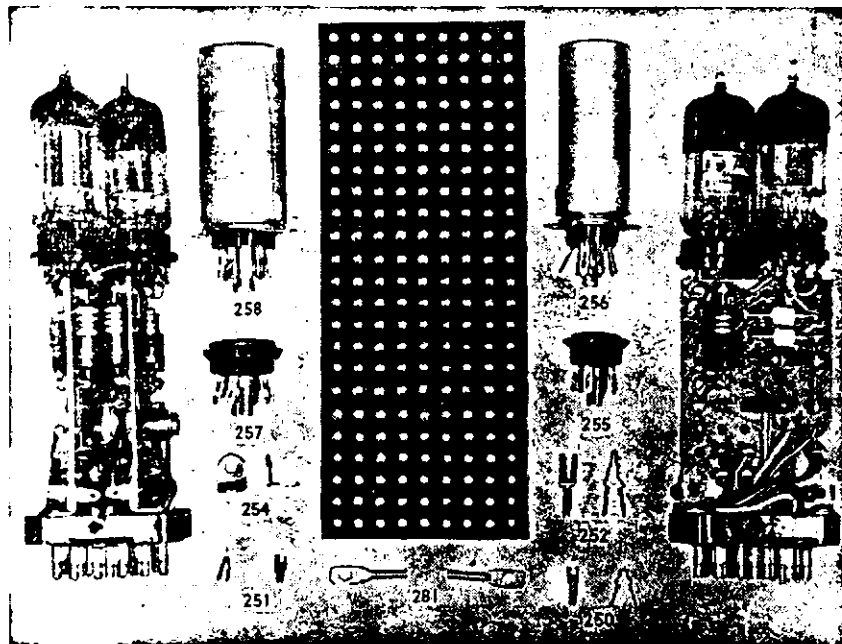
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MEET THE OTHER AMATEUR AND HIS STATION

ANDY ROUDIE* VK3UJ

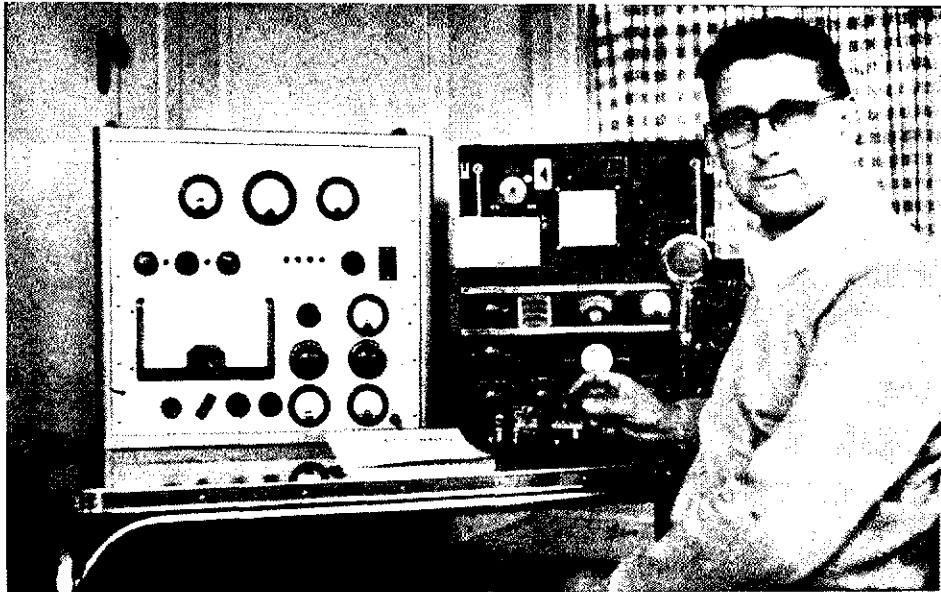
ANDY was born in Melbourne in 1913. During the period from 1924 to 1930, many types of crystal sets and battery receivers were constructed for broadcast and short-wave reception, this providing the initial interest and experience in Radio.

During the following two years, he completed a Radio Course at the "Working Men's College," now the Royal Melbourne Technical College, and the A.O.C.P. was obtained in 1932.

QSO No. 1 was with VK3CX, using a 201A t.p.t.g. transmitter early in 1932.

Since then, Andy has operated his station from seven locations in and around Melbourne, the present one at Croydon, 19 miles east of the city and 450 feet above sea level, being quite good for both reception and transmission.

* Croydon Way, Croydon, Victoria.



The photograph shows the present station equipment and the operator himself.

The transmitter uses a Geloso v.f.o. into a parallel pair of 6146s with pi-coupler output; the modulators being a pair of EL34s. All bands from 3.5 to 28 Mc. have been worked on both phone and c.w., but at present only dipoles

are in use on the 7, 14 and 21 Mc. bands.

The receiver is an AR88D, tuning from 500 Kc. to 32 Mc. Above the receiver is the frequency meter.

Other interests include 7 Mc. mobile and portable operation, photography and l.p. record reproduction.

THE BASS STRAIT FERRY—VK7 END

FOR the benefit of mainland Amateurs who anticipate a holiday tour of Tasmania I offer some advance information from the point of view of Mobile and Portable Radio operation.

The starting off point is, of course, Devonport. Here we have half a dozen active VK7s. Twelve miles westward along the coast at Ulverstone are two members, another 18 miles west at Burnie and districts are nine VK7s. It may be of interest to mention that all Amateurs in the above areas are members of the W.I.A.

Therefore, it should be comparatively easy to make contact with some locals in this area.

Going in the opposite direction, to the East, 35 miles away, Deloraine is reached, at an altitude of about 800 feet. From here one can turn off to the South over the central highlands, 4,000 feet, or proceed East another 30 miles to Launceston. Here again are active VK7s.

Going back to Deloraine, if one cares for mountain scenery and lakes (and the Great Lake is about 100 miles round the shoreline) despite the not-so-good road, the trip over the mountain is one that is worthwhile and from the elevation, the possibilities of QSOs, particularly on v.h.f., are inviting. The Great Lake is 25 miles from Deloraine, and from there one may drive along the Lake shore and down the southern slope to Hobart. At Hobart, where the W.I.A. is a very active body, one will find many VK7s spread over the whole district, and contacts should be quite easy. The distance back to Launceston from Hobart is 120 miles of good road. In passing, while in Hobart, be sure to

drive to the top of Mt. Wellington with mobile gear, over 4,000 feet up, and view the t.v. activities. A couple of hours will cover the trip comfortably.

Of course there are lots of other places to go. The East Coast is magnificent for its beaches, and the West Coast is something of another world—140 inches of rain per year.

Now we have dealt with internal interest in Tasmania, but what about contact with other States. Well it isn't much over 200 miles from this coast to VK3 and across water at that. My list of contacts with mobile and portable VK3 and VK2 is quite a long one. Therefore, from here, one can expect to

contact many VK3 and other States with comparatively low power.

For some months I used 8 watts and made dozens of contacts with VK2, 3 and 5.

So some final advice—bring the mobile and portable gear even at the expense of leaving the XYL behind.

Anchor it down firmly, if you intend to leave the main highways. A piece of strong cord with a weight on the end is useful to throw over a tree to raise the antenna, and there are lots of trees here.

The VK7 fraternity looks forward to seeing many Amateurs from other States, and will be pleased to furnish information.

—VK7MX, Devonport.

TROPOSPHERIC PROPAGATION AT V.H.F.

(Continued from Page 3)

with anticyclones during the colder months. A high such as this is worth watching at any time of the year. The dotted lines on Fig. 6b represent the sounding on the 20th and the solid lines that of the 21st. The graph of the 22nd was almost identical with the latter. On the 20th, at the leading edge of the high, there was a small temperature inversion between 4,200 and 5,000 feet averaging about 0.4°C. per 100 feet, and in the same layer the mixing ratio dropped about 0.35 g./kg. per 100 feet giving a total refraction a little less than required. On the 21st and 22nd the gradient had virtually disappeared, thus it must be assumed that the propagation on those evenings was due entirely to surface cooling. Propagation

on the 20th was probably assisted by the same effect.

How About 288 Mc.?

There appears to be no reason why the information in this article should not apply with equal force to one metre with the possibility that ducting should be more frequent. With the increasing use of stabilised gear it should not be long before the distances covered will be comparable to those on two metres, with some paths, particularly over water, favouring the higher frequency. The first contact across Bass Strait on 288 Mc. cannot be far off. That is how it goes—there is always the challenge to improve the gear and extend the range. See you on v.h.f.?

ACKNOWLEDGMENT

The assistance of officers of the Commonwealth Bureau of Meteorology in Melbourne, particularly Messrs. Gibbs, Leake and Lloyd, in providing access to meteorological records is gratefully acknowledged.

Why So Few Entrants in the N.F.D. Contest?

The National Field Day Contest is probably one of the contests offering the best attraction to those who are keen lovers of the outdoors, those who have family responsibilities and those who just look forward to a "different" day by way of relaxation. And yet it is hardly patronised. There must be reasons for this and the Federal Executive, Federal Council and Federal Contest Committee are anxious to know what they are before giving it up.

Many efforts have been made to popularise this Contest with little success. The Federal Contest Committee have currently forwarded proposals for rule making which you should have an opportunity to read and criticise. The Federal Council is currently considering these proposals and your comments could be helpful in its decision. These are the proposed rules:—

PROPOSED RULES

Date of Contest: Saturday and Sunday, 13th and 14th February, 1960.

Duration: 1800 hours E.A.S.T. Saturday to 1800 hours E.A.S.T. Sunday.

1. There shall be three sections to the Contest:—

- (a) Transmitting, Phone.
- (b) Transmitting, C.w.
- (c) Reception of Portable and Mobile Stations.

2. All Australian Amateurs may enter for the Contest. Mobile or portable stations shall be limited to an input of 25 watts to the final stage. This power shall not be derived from either private or public mains.

A portable or mobile station shall not be located within a radius of one mile from the home(s) of the operator(s), nor be situated in any occupied dwelling or building.

No apparatus shall be set up at the site selected earlier than 24 hours before the commencement of the Contest.

A portable or mobile station may be moved from one site to another during the Contest.

More than one transmitter may be used, and where there are multiple operators several bands may be used simultaneously, but in this case a separate log shall be submitted for each transmitter.

All Amateur bands may be used, but cross-band operation shall not be permitted.

3. Amateurs may enter for one or both transmitting sections.

4. One contact per station for phone and one for c.w. per band shall be permitted.

5. More than one operator may participate in the operation of a portable or mobile station provided that all operators are licenced Amateurs.

6. Entrants must operate within the terms of their licences and must observe the Regulations with regard to portable operation.

7. Serial numbers consisting of the RS or RST reports plus three figures beginning with any number between 001 and 100 and increasing by one for each successive contact shall be exchanged.

8. Scoring:

For contacts with portable or mobile stations outside entrant's own State	15 points
For contacts with portable or mobile stations within entrant's own State	10 "
For contacts with fixed stations outside entrant's own State	5 "
For contacts with fixed stations within entrant's own State	2 "

The following shall constitute call areas: VK1 (A.C.T.) and VK2 combined, VK3, VK4, VK5 (South Australia), VK5 (Northern Territory), VK6, VK7, and VK9.

9. **Logs:** All logs shall be set out under the following headings: Date/Time, Band, Emission, Call Sign, RST/Nr. Sent, RST/Nr. Rcd., Points Claimed. In addition there shall be a front sheet showing the following information: Name, Address, Call Sign, Section, Call Signs of other operators (if any), Location of Portable/Mobile Station fromhrs. tohrs., fromhrs. tohrs., etc. A brief description of the equipment used, bands used, points claimed.

Declaration: I hereby certify that I have operated in accordance with the Rules and spirit of the Contest.

Signed..... Date.....

10. The right is reserved to disqualify any entrant who, during the Contest has not observed the Regulations or who has consistently departed from the accepted code of operating ethics.

11. The decision of the Federal Contest Committee will be final, and no dispute will be entered into.

12. Certificates will be awarded to the highest scorer in each section in each State.

Receiving Section

The Rules shall be the same as for the transmitting Stations and is open to all Short Wave Listeners in the Commonwealth and Mandated Territories.

Logs shall take the same form as for transmitting sections, but will omit the serial number received. Logs must show the call sign of the station heard, the serial number sent by it, and the call sign of the station being worked.

Scoring will be on the same basis as for transmitting stations. It is not sufficient to log a station calling CQ.

A station heard may be logged only once for phone and once for c.w. for each band.

Certificates will be awarded for the highest scores in each State.

Address of Logs

All entries must be postmarked not later than Saturday, 27th February, 1960, and addressed to the Federal Contest Committee, W.I.A., Box 371B, Hobart, Tasmania.

COMMENTS

The Federal Contest Committee have issued the following comments:

It is felt that the time and duration might encourage camping, with several operators per station. Note that contacts with stations outside entrant's own State includes overseas contacts.

The number of sections has been reduced to three. In the 1959 Contest there were no entrants for the v.h.f. sections, and in any case the high number of sections for the relatively small number of entrants seemed rather ridiculous.

The number of certificates to be awarded has also been reduced for the same reason.

Open sections have been omitted as in our opinion they are a farce, anyway. Entrants can enter for either the phone section or the c.w. section, or both.

Omission.—In the case of contacts outside of VK it might be desirable to include a clause stating that no serial numbers need be exchanged, but a serial number entered in the log for such contacts.

★

There you have it... an opportunity to tell the Federal Council what is wrong with the Australian National Field Day Contest in comparison to the overseas events which are the most popular of contests. Write your comments direct to the Secretary, Federal Contest Committee, 22 Haig St., Lenah Valley, Hobart, Tasmania, to reach him by the third week of October.

YOUR STATION COMPANION,
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Aust. Radio Amateur CALL BOOK

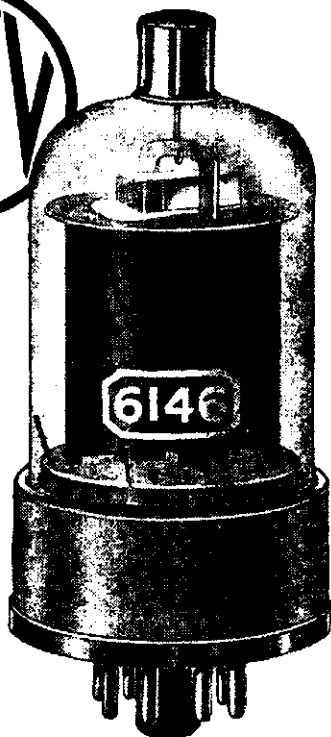
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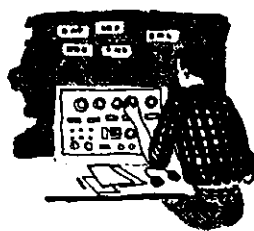
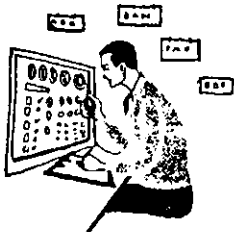
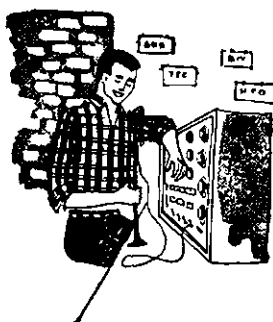
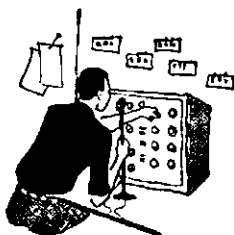
1959-60 EDITION CONTAINS:

- An up-to-the-minute listing of Station Call Signs and Addresses of Licensees of Transmitting Stations located in the Commonwealth of Australia and Territories, and W.I.A. Listeners' No's.
- Over one thousand additions, alterations and deletions since the last edition, making more than five thousand amendments since the 1954 issue.
- DX Countries, Prefixes and their Zones.



Calling All Hams...

Because of its small sturdy construction, high efficiency and high power sensitivity, the Radotron 6146 VHF Beam Power Valve is ideal for use in both mobile and fixed equipment. Similarly, its suitability for both class licences makes it the perfect valve for use in transmitters and audio amplifiers.



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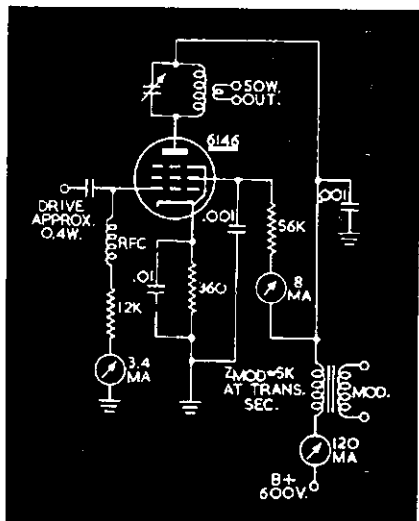
A-F Power Amplifier and Modulator, Class AB2

Values are for two valves

- Plate: 750 V. at 240 mA (Max. signal).
- Screen: 165 V. at 20 mA (Max. signal).
- Power Output: 130 W. at 10% total distortion.**
- Drive: 0.4 W., 108 V. Peak A-F grid to grid.

Plate-modulated R-F Power Amplifier, Class C

- Plate: 600 V. at 112 mA.
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BOOK REVIEWS

MAGNETIC SOUND RECORDING

By D. A. Snel

This new book from the Philips Technical Library covers the subject in a way which should prove of considerable value to all who own, use, or contemplate building magnetic recording equipment.

The first chapters give an introduction to sound and history of magnetic recording followed by magnetism and electricity and then to the process of magnetism and requirements for recording.

In turn, sections on drive mechanisms, tape and heads, amplifiers, microphones, and loudspeakers have been well covered with theory and practical drawings and illustrations.

The section on practical recording was found to be interesting due to the variety of uses and suggestions, and also on account of a previous embarrassing experience caused by a lack of some of this knowledge at the time.

Following chapters deal with stereophonic recording and playback, which will no doubt be a feature of future recorders, together with dictating equipment, magnetic sound for films, faultfinding and many other applications for magnetic recorders and recordists, all amply covered.

Having experienced some of the troubles contained in this book while building a tape recorder makes me appreciate the information, and it is felt that it will save many others from similar mistakes with consequent disappointment and expense.

From the point of expense, the price of 30/- Australian could save costly mistakes and pay for itself in the construction of a magnetic recorder and still be a very good reference in the technical library.

Available from Philips Electrical Industries Pty. Ltd., 69 Clarence St., Sydney.

MULTIVIBRATOR CIRCUITS PRACTICAL ROBOT CIRCUITS

These books have been grouped together because they were written by the same author. The first one covers the theory of the multivibrator in all its many variations. The second, deals with the applications of these same circuits, in this case, to control a robot dog.

I do not expect there will be very many Hams who will build the electronic pooch, but all of us can benefit from the theory and practice described in these very inexpensive volumes.

Both volumes by A. H. Bruinsma from the Philips Technical Library. Australian prices: 13/- and £1/1/0 respectively.

RADIO ENGINEERING FORMULAE AND CALCULATIONS

By W. E. Pannett

The aim of this publication is to assist "those who wish to improve or revive their ability to cope with radio engineering problems". However, the only advantage of this book over similar volumes which list Radio Formulae is that it gives worked solutions to many examples, showing how one goes about solving such problems.

Nearly all aspects of Radio Engineering are covered. The section on Transmitters would be quite useful to Amateurs, in spite of its brevity. The treatment, however, is rather superficial, particularly in Example 1, where, in calculating drive power to the grid of a final amplifier (class not stated), the r.m.s. grid voltage is taken as average voltage.

The section on Transistors is very brief, and does not seem up to date as might be expected of a book published in 1959. For example, the list of basic Transistor Amplifier circuits is misleading in the way it classifies grounded-emitter types as suitable for audio fre-

quencies only. Similarly, the current gain in this circuit is referred to as "alpha", whereas modern convention refers to this usually as the "beta", the Beta Gain.

The list of classes of amplifiers, A1, A2, AB1, etc., is a useful feature in the section of Thermionic Amplifiers. The tables of power and voltage ratios to decibels, of frequency to wavelength, and the usual mathematical tables are quite useful, but others, such as the very handy L.C. Reactance vs. Frequency chart, are not included.

On the whole, the formulae and methods of calculating answers are well set out, but the treatment is sketchy (for example, horizontal dipoles are not mentioned in the section on Aerials and Propagation), so that it cannot replace the more comprehensive and authoritative texts such as Langford Smith and Terman.

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THE HAM

There are fools of every kind
And the most of them are blind
To the folly of the game that they pursue,

And they each and all declare
That their own peculiar fare
Is the finest in the world, "if you knew".

The Footy fiend loves mud,
Has the fever in his blood.
And the Punter to the Bookie gives his cash.

While the Cricketer will run
Up and down 'neath blazing sun,
And the Pugilists each other love to bash.

There's the bloke in dancing shoes
And the fellow who loves booze
While the Golfer hits a ball with many damns.

But the maddest of the crowd
Are the ones who talk aloud
When there's no one but themselves.
They call 'em HAMS.

They sit beside their box
And enjoy their little talks
About voltages and frequencies and bands,

And they never go to bed
For they're funny in the head
With the knowledge that this sort of thing demands.

If you ask him which is greater,
Eight o seven or oscillator,
He will tell you you are widely off the beam,

That your relay and transformer
Are away to some place warmer
And your ohms and watts are only just a dream.

They have wires every-where
Even high up in the air,
But their hobby is the best of all,
by far.

It makes a happy home
For they never care to roam
And their wives can always tell just where they are.

"HAM" SPEARE.

[The above was written by Mr. Jack Burrows, Snr., father of Jack Burrows, Jr., VK6BU.—Editor.]

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Proposals for a Mobile Receiver Without H.T.

H. F. RUCKERT,* VK2AOU

WE heard recently about the hybrid car radio which was made possible by the introduction of "special valves" which can work satisfactorily with 12 to 14 volts B+, and the audio power stage has to be transistorised. Even the short wave range up to 19 Mc. did show sufficient gain as demonstrated in one publication. If a car radio achieves μV sensitivity at 19 Mc. there is a good chance that the same set up will work at least up to 30 Mc., and most likely also at 60 Mc. We may have to accept at v.h.f. a higher noise figure, resulting in reduced sensitivity, than would be possible to obtain with the full high tension voltage.

Looking closer at the data of the so-called special hybrid valves, one gets the impression that these valves are not so very special or new in design. We remember that the stage gain is the product of resonance resistance of the tuned circuits and of the dynamic gm. of the valve used. If we assume that the design and Q of the tuned circuits of r.f. and i.f. stages are conventional, we have only to see that the valves have a sufficient high gm. with the low B+ voltage of 12 to 14 volts.

The quickest way to get an answer and practical results, was to build a simple test circuit around a valve holder and an i.f. tuned circuit. With the signal generator attached to the input and a vacuum voltmeter to the output, the stage gain was easily measured. With the help of a five kilo-ohm potentiometer in the cathode lead and a 50 kilo-ohm potentiometer to adjust the screen voltage, the best working conditions were soon found. A compromise can be found where we get good gain, little stage gain variation with B+ voltage variations and a relatively wide range of output voltage with low distortions.

The test did show that useful gain can be achieved with valves which have at least a static gm. of 5 mA/V. at 150 to 250 volts B+; with a lower B+ voltage the remaining gm. is only 10 to 20% of the usually listed value.

The following valves were tested: 6AC7, 6AC7, 6AG5, 6AK5, 6AU6, 5847 (gm. = 11 mA/V.), 12AU6, Z77 (gm. = 9 mA/V.).

Since the operating frequency was 455 Kc., the v.h.f. properties of the more modern valves did not show up, and the valve with the highest gm. gave naturally the highest i.f. gain of 100 to 200 for the 6AC7, Z77 and 5847 valves. The valves with lower gm. of about 5 mA/V. at full B+ resulted in stage gains of 40 to 100. The usual receiver design considerations and these gain figures give us several hints how to plan the circuit, if we wish to use popular miniature valves only. The r.f. stages may be equipped with 6AK5 types. The same valve may be used for the mixer stage and oscillator, using grid one injection and a triode oscilla-

tor. 6BA6 valves may be used for the i.f. to make use of the remote cut-off curve these valves possess. To reduce the battery power consumption it may be advisable to use GE diodes to obtain the audio and a.v.c. voltage. A OC71 audio pre-amplifier transistor and a matched pair of OC72 transistors should be all that is required to drive a small loudspeaker.

There are several advantages:

Running the high gm. valves with such a low B+ voltage reduces greatly the difficulties to prevent take-off, and stable operation is easily achieved.

Two valves may be connected with their filaments in series to suit the 12 volt car battery.

There is no expensive, noisy and unreliable vibrator requiring also complex hash filters.

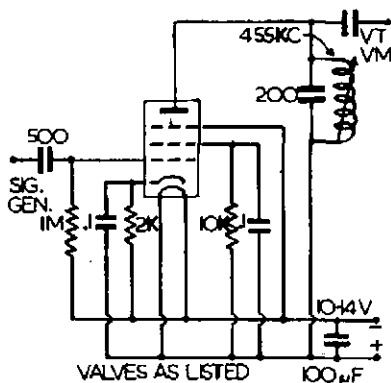


FIG. 1.
In the above circuit the B plus line should have been connected to earth.

The receiver will be very much smaller because there is no power supply taking up about 50% of the volume and even more of the weight of the usual car radio.

Low voltage components have less bulk too, so that all paper capacitors can be replaced by thin sheet ceramic HK (K factor 9000) units which have 0.05 to 0.1 μF . capacity at 40°C. These are discs with $\frac{3}{8}$ " diameter.

The resistors used can be all of the one-tenth watt version, because extremely low loads occur due to the small voltage applied.

A receiver with five valves and three transistors would only represent a load to the 12 volt battery of 1.8 amp.

50 Mc. W.A.S.

Call	Cer. Add. No. Cntr.	Call	Cer. Add. No. Cntr.
VK2WJ	13 4	VK2AEZ	10 1
VK3PG	5 3	VK3XA	11 1
VK2VW	9 3	VK3GM	12 1
VK4RY	2 2	VK3ACL	14 1
VK4HR	4 2	VK3ZD	16 1
VK5LC	1 1	VK2HO	17 1
VK8DW	3 1	VK2ABC	8
VK3RR	6 1	VK2WH	15
VK3HT	7 1		

With the exception of the cathode bias resistor, the screen grid resistors and the use of audio transistors, there is no change in the circuit comparing standard receiver design. It is not advisable to use resistors in plate circuits because they would further reduce the B+ voltage, which would not only affect the gain but it would also reduce the input voltage which can be applied to the grid before distortions in the plate circuit occur.

The test circuit shows typical operating conditions for an i.f. or r.f. stage. It is advisable in every case to vary the cathode bias resistor between 500 and 5,000 ohms to find the best value for the valve used.

SOMETHING DIFFERENT

For something non-technical and different for your book shelf, may I suggest Thomas H. Raddall's "The Nymph and the Lamp." This novel and classic, so aptly written, portrays the life of a wireless operator, based on a lonely strip of sand in the North Atlantic, and of the affairs of the heart that overtake him.

It will stir the blood and the imagination of all those who have ever pressed a key or sent a signal into the ether. It will, as he completes the pages, turn him with vision and appreciation to the woman who is in every man's life. —VK4SS.

D.X.C.C. LISTING

Listed below are the highest twelve members in each section. New members and those whose totals have been amended will also be shown.

PHONE

Call	Cer. Cnt. No. rles	Call	Cer. Cnt. No. rles
VK6RU	2 232	VK6KW	4 189
VK6MK	43 221	VK3BZ	3 178
VK4FJ	21 213	VK4RW	23 164
VK3WL	14 211	VK3EE	10 163
VK3ATN	26 204	VK9DB	31 161
VK4HR	12 192	VK4WF	16 160

New Members
VK2VV .. 46 103

C.W.

Call	Cer. Cnt. No. rles	Call	Cer. Cnt. No. rles
VK4FJ	29 248	VK3XU	48 213
VK6KB	10 245	VK3NC	19 206
VK3CX	26 240	VK3YL	39 203
VK6FH	15 228	VK5BY	45 202
VK3BZ	6 222	VK6RU	18 201
VK4HR	8 218	VK2EO	2 191

Amendments
VK6KW .. 40 113

OPEN

Call	Cer. Cnt. No. rles	Call	Cer. Cnt. No. rles
VK4FJ	32 251	VK6MK	74 225
VK2ACX	6 250	VK3XU	61 221
VK6RU	8 250	VK3HG	5 215
VK4HR	7 233	VK3JE	12 210
VK3BZ	4 231	VK3ATN	69 210
VK3WL	45 225	VK3NC	77 208

Amendments
VK6KW .. 13 205

VHF

Frank P. O'Dwyer, VK3OF
190 Thomas Street,
Hampton, Vic.

The pressure of a 16-18 hour working day, seven days a week—leaves no time for Ham Radio. So this month it is my pleasure to hand the 50 Mc. note writing over to that ardent listener and DX correspondent, Mac Hilliard. His information and comments over the months have been of great aid.

50 MEGACYCLES

A nice interesting month with the return of DX both TE and Es, a letter about South African doings from ZE2JV, and information on XE from Lance SAHL. Here is what I heard about 50 Mc. July 19. JAs reported by 3ZFM (near Horsham), signals speaking S9, July 20 at 1815, 4NG working VK3, band open for 15 minutes. 20th, VOSK heard by 3ALZ and 3CI at 1725, also weak JA sigs. VK5 also reported hearing JA. 26th, at 1230, VK4 and VK2 (north coast) working into VK3 and VK5 with excellent signals. Band folded at 1350. 4NG reported worked 9XK on 26th. Russ mentioned that he had worked KH8 the two previous evenings, also working JAs. 31st, VK5 reported very weak c.w. signals from a south east direction, wondered if they could have been from XE?

August 1, an excellent opening between 4NG and VK5. August 2, at 1345, VK4s worked into VK3, sigs. mostly patchy with peaks around S8. Only Brisbane gang heard at this time, they faded at 1430. At 1510 4NG came in at varying strengths up to S9. His sigs. faded at 1615. 4NG reported that JAs were coming in again every evening. August 9, JA worked for about 45 minutes in VK3 from 1715 with VOSK heard strongly the next two evenings.

LETTER FROM ZE

Now here is the letter from ZE: "Activity here is very low in spite of very good conditions. We had Ws in June, April and May, KR6 in April, and of course TE all night and every night January to April; ZS6 and ZS1 by Es and a few TE openings in June and July. The 70-75 Mc. signals I have been receiving from Cyprus and Beirut for eight months of the year for the last two years are only audible on the 72 Mc. three element yagi, although sometimes S9. I get nothing with either the 50 Mc. or 144 Mc. beam plugged in. The upper limit of TE is usually about 90 Mc. in the more favourable locations.

"At the height of this season the 144 Mc. band appeared open for periods of about half an hour. After three weeks testing with Chaiky ZC4WH we contacted, what luck! It occurred very late in the night, 48 hours after violent sunspot activity, of course. I can offer you a tape recording, a programme edited suitable for broadcasting, if you would like to borrow a copy. It consists of recordings of commercial signals 30-75 Mc. and Amateur signals from South Africa as heard in ZC4. I am certainly on the look out for the VK boys. I continue to run an auto transmission whenever conditions appear promising. Anyone hearing it should net to the frequency of 50,040 kc. and call.—73, Roy, ZE2JV."

NOTES ON XE OPERATION

This information is from KE1DDD, who is also KE1PGW (mobile) and was formerly DJ2PG. He works for the Telefunken Company in Mexico. According to him (Gert) the only possible stations heard at the time of QSO between VK3ALZ/XE1FU would be XEs 1FU, 1PG, and 1QJ. Pancho 1QJ noticed the band opening and desperately called Gert, 1DDD, and Hank 1PG, but it was too late. The latter two had just worked LU and were caught out apparently. Freqs.: KE1DDD 50.01, XE1PG 50.2. KE1DDD uses a 6DL5 (EF95) in p.a. running 7 watts. Apparently it is a good v.h.f. tube. During his winter (our summer), he worked LUs, CE and an expedition to the Isle of Juan Fernandez (off the coast of Chile), and HC1FS the only 6 mx station in Ecuador. Other 50 Mc. stations in Mexico City are XE1PA, XE1PY (mobile 1PE), mobile about 100 miles south of the Lake of Tequesquite with a few watts and 12 elements.

XE1PFE only mobile at his week-end house, elevation 10,000 feet, but screened in the VK direction. Also active are XEs 1GY and 1FS. Others active at Tijuana on the American

border are XEs 2AF, 2AI and 2WC. Apparently these stations have not yet been heard in Mexico City.

Now at last we have info on the 50.5 Mc. f.m. signal which has been heard on many occasions. It is a t.v. relay between the dead volcano Ixtaxhuatl on the Pass de Cortez and Popocatepetl at an altitude of about 12,000 ft. This is, of course, our pointer to XE openings. The XEs have been using the Peruvian I.G.Y. station just below 50 Mc. as their guide to southern openings such as we use HLKA on 49.8 Mc., as one to JA. During openings to North America, there is often f.m. telephone on 49.8 Mc., this may have been heard in VK. Only a few XE stations use c.w., the phone ticket is more readily available. XE1DDD and XE1PE both use c.w. Gert hopes that our c.w. band will not be swallowed up at Geneva—Lance VK3AHL.

Another interesting letter came from Vern VK4LK, who tells of the prolific JA sigs. Further, he mentions the immediate success of the 144 Mc. link to Townsville when both he and 4ZAK went over to 11 el. long yags. He finds signals consistent over every 24 hours on 144 Mc., whereas 50 Mc. over that path is very poor by comparison. He is looking forward to the return of Es when the boys will again be on tap, as far as he is concerned there is nothing more enjoyable than a first-class local opening for three or four hours.—Mac Hilliard.

NEW SOUTH WALES

At the meeting of the V.h.f. Group on 3/7/59 were 50 members to hear a lecture on General Transistor Application, by Harold 2AXH, who covered the subject very competently. He touched upon many points not known by the average Amateur and was very well received. A vote of thanks was moved by 2ASZ and carried by acclamation.

A motion was put forward by Dave 2AWZ to limit the speed outside built-up areas to 40 m.p.h. on all day events. It was decided by the committee in a later meeting that this would be a hard rule to regulate, but urged all members in all events to maintain strictly all road rules and safe driving practices to ensure no occurrence which may give the mobile Amateur a bad name in the eyes of the general public. Remember, a beam on a car really stands out!

A reminder is given to all participants in a mobile event, that any cancellation due to inclement weather, etc., must be announced by the fox at least one hour before the proposed starting time. In all hidden tx hunts, the fox must hide within eight air miles of the starting point, and, we hope, harder to find. In mobile hunts the speed of the fox must be held to 25 m.p.h. maximum.

Hidden Tx Hunt, 15/7/59, had most of the hounds really confused. Kevin 2ZCF was the fox and hid in the bush on the edge of a gorge at Hornsby. The only way in was to completely circle him and come in from the opposite direction. Those who tried to go direct found themselves several hundred feet below him in a maze of dead-end streets and a "tip." Ron 2ZBG with Alan 2RX were again first on the scene in 40 minutes, with 2ASZ 55 mins., and 2AWZ 65 mins. Following were 2OA-2ZAV, 2PM-2ZPM, 2ZFC-2ZAL, 2ZBE, Phil 2ZBX saved time by hiding with the fox. All hands tucked into supper and nattered far into the night. Our thanks to Kev.

Sydney v.h.f. activity has risen considerably in recent months with many new calls making themselves heard. Val 2ZDD (Woolahra), Gordon 2ZGW (Silverwater), Max 2ZMP and Howard 2ZHP (Waverley), Irwin 2ZEM (Auburn), Lance 2ZKP (Granville), Phil 2ZBW (Homebush), Tim 2ZTM (Mosman), Dennis 2ZPM (Castlecrag; whom I believe we are losing to the Navy soon), 2ZKO (Ryde) and others.

With the announcement of an award for the longest 2 mx contact during this year, talk is afoot regarding a DK Expedition to Mt. Ebor and Mt. Gibraltar to attempt contact over the long week-end in October. Another possibility being discussed is a trip to Mt. Kosciuszko with 80 watts.

Coming Lecture, Sept. meeting: 2ASZ on Command Rx's and 2BK on Voice Controlled Break-in. October meeting: Possibly on Antenna Systems for v.h.f. November meeting: Possibly a technical film night.

Coming Events, September: Watch v.h.f. broadcast for details. October 4: Blackall's Field Day. October 25: Blue Mtns. Field Day at Lawson with plenty of v.h.f. activity. Get your mobiles going, chaps, and see you there.—2ASZ.

VICTORIA

Due to pressure of work, Jock 3ZDG has relinquished the writing of the VK3 notes and yours truly, 3ZGF, has taken over. With your continued support I hope to keep the high standard of your previous scribe. Thanks,

Jock, for a fine spell of duty, always full of news and items of interest.

V.h.f. Meeting, 15th July: Approx. 25 were in attendance and the business was t.v.l. Much discussion arose on this subject after Alan 3AEL informed the meeting that VK3 Council has decided to form a committee to deal with t.v.l. and b.c.l. related to the Amateur. It will consist of five of whom three will represent the V.h.f. Group. The three elected from the Group were John 3ZFO, Kel 3ZFG and self 3ZGF. Together with two to be elected by Council, the committee should begin to function at an early date. Initially we will compile a list of all available references on the subject and hope to have this material available to members. Technical assistance will also be available on a co-operative basis so that all problems will be handled to the satisfaction of all concerned—the Amateur, the complainant, and the Department. Further news will be released via 3WI and "Amateur Radio."

Bands Activity: In the short time at my disposal the following items have some significance:

6 Metres: This band is certainly providing some interesting activity for this time of the year. Two quite good openings to VK4 and VK2 have occurred on Sundays. Just after 1200 hours on July 26, VK4ZAX and VK2ATS crashed through with terrific signals. Together with other VK4s the local gang quickly recovered from their surprise and had themselves some fine QSOs. Sunday, 2nd August, the VK4 gang were in again at lunch time, though at this QTH not as well as previous Sunday. Heard VK2ZER in there also. Then later in the afternoon Bob VKANG had a re-appearance for a few to work. So who knows what will happen from day to day, pays to watch what is otherwise a dead band.

Sid 3CI has been putting good signals in Melbourne from his new QTH. Some new signals around the city were Wally 3AHZ (St. Oakleigh), 3ZGF whom I haven't worked as yet. David 3OD has moved QTH from Preston to Heidelberg, company for 3ZCO and 3QO.

John 3ZFO v.l.o'ing around band now. Ken 3ZDI re-building, but listening. Keith 3ZED and Jim 3ZGW still missing and waging battles against t.v.l. troubles.

Hope the DX this season tunes up out of the QRM down the low end and works some in the clear; stations above 50.5: ZHC, ZHG, ZGF, ZCO, ZBN and others—enjoy QRM-free QSOs!

Sorry I can't find much about 2 or 1 mx. Haven't been on the job long enough yet on 1 mx. 3ZCG has been working again. John 3ZH has gear and had a QSO with 3QO. Gerry 3ZBN building a new converter and it is rumoured that 3AZY is building gear for the band.

See you next month chaps.—3ZGF.

QUEENSLAND

July 10 at 1855 Jas 1, 2, 4, 7 and 9 came in for an hour. 4HD worked a couple and Jack 4JO had a scratchy QSO with JA4IO. No DX from then till 18th when brief JA signals heard at Eimbah about 1945.

4HD and 4 have had over 100 QSOs. 4ZBF gone QRT on 50 Mc. for keeps in favour of t.v. That's one way of solving t.v.l. Alan!

Bit of local activity on 50 Mc.: 4ZAA, 4ZBZ, 4ZBT, 4ZAX, 4ZBL and 4ZBY still keeping their rigs in working order. 4ZBI is usually around most nights. Believe Frank 4ZCM has purchased 4ZBF's gear; it's good gear, Frank. John 4FU still being heard and worked by Max 4HD and 4ZBI, but doesn't get into Brisbane too often. Bill 4WD re-building Anal, has t.v.l., also Max 4HD taking precautions. 4ZAT has distinction of most easterly 6 mx station in Australia. Still no sign of Len 4ZBS—must be using double suppressed carrier and sidebands! Hurry up, Len.

Bob 4NG was out at Jundah when the Auroras was on and no 1 mx gear—wouldn't it? Max 4HD worked JA2SE, on c.w. on 19th about 1700 hours, also 4NG was heard in JA. Bruce 4ZBD seems certain of QSY'ing to 80 metres; sat for c.w. and hopes. Beware, b.c.l. on 80. Bruce JAs heard on 23rd between 1800-1830—JAs 1 4 and 9. 4NG having his share, also the T'ville gang. 4ZBL seems a bit of a "poet," how did you like it Neddy (4ZBJ).

Opening to VK3 on 26th, around 1200-1400, heard Peter 3ZDP and 7ZAL, as I came in on the tail as usual.

Geo 4GG earbashes Chas 4CU nightly—seems as if 4ZBI has an earbashing rival!

A new call sign on band, Dick 4ZCK. Welcome to 50 Mc. and thanks for contact. Dick hopes to be on with 80 watts very soon, 4ZBI finally has had a couple of good contacts with Ron 4ZBZ. Max 4HD heard working JAs at end of month and dishing out S9 reports—but

can't hear them here. Max did hear 4NG and 4ZAZ's carrier at 1915, Sunday 26th.
2 Metres: Lionel 4DR was in contact with Mick 4ZAA one evening, working cross band 2 and 6 mx. Quite a bit of activity on 2 and 1 mx in Brisbane. Even 4ZBI up amongst the trees thinking that way!—4ZBI.

SOUTH AUSTRALIA

Activity on 288 Mc. has slowed down a little during the last month. Main signals heard from this location are 5JS, 5ZCL, 5ZDJ, 5ZGX, and 5TN. John 5ZBA will be in VK6 land when these notes go to press. John has been hunting up some portable 288 Mc. gear for use over there and I hope he was successful; give all the VK6 boys our best wishes. John. Whether Al 5ZCR has a contact at Pine Lodge (ADS7's location) or not, I'm not quite sure, but he promises 240v. power for our 288 Mc. stabilised gear that can be used to work from the Mount to VK3 land. Go to it boys, here's your chance.

Information for VK3 boys on 144 Mc. is that we have Rodney 5ZCD living at Bordertown using a Geloso. Rodney listens on 3.5 Mc. and 7 Mc. as well, so suggest you try crossband with him. At present he is on low power but intends to stoke up an 829B.

Now for those boys who want the Worked All States on 50 Mc. award. Get ready for your chance. VK5 is proud to present you with that chance. John 5ZDL will be leaving for Darwin in October; he will be taking with him mobile gear running 80w. John will be on relieving duty for three months, but hasn't indicated whether he will QSL from there or his home address.

I have further information about Reg 5QR's s.b. effort; he used the phasing system on low power with good results, but is now building a xtal lattice system. Reg claims that the gremlins are working against him for after grinding three rocks and getting then spot on, the fourth came to disaster when it slipped from his fingers. After cutting another slab and carefully grinding it, Reg found it jumping between two frequencies. What luck, guess you've got the fourth one OK now Reg.

Brian 5ZCO using a 5763, is new to the band, not too strong at the moment, but should do better when he has a beam. Welcome, Brian. Bevan 5ZCS has a strong signal here, but his modulation is well down. Hugbie 5AV has been very active during the last fortnight from portable locations. Others heard on the band are Keith 5MT, Col 5RO, Neil 5ZBH, John 6ZDF, Col 5ZDB and Gordon 5XU. Al 5ZCR's beam is down at last, for alterations, so he claims. According to some chaps I know this is not correct; they claim that the chewing gum came unstuck during the big winds.

Barry 5ZBZ and Graham 5ZAP still tearing around with their mobile rigs. Graham claiming a measured 4 watts in the antenna. I hope to join you shortly boys, I have just re-built the mobile gear using screen modulation. The power supply is the next item.—5ZAW.

NORTHERN TERRITORY

Here commence the monthly notes concerning v.h.f. in the Northern Territory. Previously I was 4ZBW operating from Townsville on 6 and 2 mx. Now, after my transfer to R.A.A.F. Darwin, the call is VK5ZBW. Some information for those W.A.S. enthusiasts.

At the moment a power supply and converter are under priority construction, much of my gear having been misplaced in transit. I will be here for at least 15 months, operating 6 mx for as long as we hold the band. The rig is 7CS osc., 7C5 doubler, 2E28 amp. running approx. 15 watts into (I hope) a 4 el. yagi. A high power final was under construction at Townsville, and will eventually be finished here. Hours of operation will mainly be: 5.30 p.m. Darwin time, until the band goes out, each night of the week with the exception of Wednesday, Friday and Sunday, as I work in the projection box at the R.A.A.F. cinema between 7 and 11 p.m. However, after 11 p.m., I will be on the band, naturally enough. All things going as hoped, I should be on the air by August 8, at the very latest, depending now on some parts I have ordered from Sydney. Do hope to be able to talk some of the local boys into coming up on 6 mx also.—5ZBW.

We all acclaim Brian's enthusiasm; may he provide the gang with many contacts and may all good DX come his way.—30F.

PAPUA-NEW GUINEA

On April 25, 3AHL heard 9XK but Russ went back to work ZL3FL and ZL3CT, 0940-55. At 1010 Russ heard VK6VF (beacon) with his beam on ZL, no increase in signal strength on a direct bearing. Same day, 2200-2100, he worked JA and KAI.

On April 30, KH6 and JA. May 1, JA1, 2, 4, 0. May 2, VK6BE, 6BO at 1034. Russ has

S W L

Maurice Cox, WIA-L3055

Flat 1, 37 Boyd Crescent,
Olympic Village, Heidelberg,
N.23, Victoria.

Hi fellas! Here is your scribe once more with the news and doings of the Short Wave Listeners of Australia. Hope you are all well and your ears have been glued to your rx's these cold winter nights.

In the last month or so I have had some very nice letters sent to me and I want to thank all those who have written to me. Now here is the first one from BERS1002, Don Grantley, of Spring Valley, Helbrook, VK2-land, he writes:—

"Main object in writing to you is, apart from introducing self, is to ascertain just what help I can give you in writing the page. As you know, I always sent a bit of dope on to Ian when he had it, and I am only too pleased to do the same for you. However, I would like to know just the type of thing you want, personal news is out as far as I am concerned, unless of course it is something out of the ordinary, but I do gather a lot of s.w.l. information from here and there, from other s.w.l. groups in other countries, and of course you can have the doings of the Albury group.

"Very pleased with your first effort at our page, and I do trust that you have no trouble maintaining it at the high standard which you have set. Very interesting, this VK3 challenge re the R.D. Contest. Ian Thomas feeling a little cheeky? Seriously though Maurice, I like to see these challenges in the contests, and I do hope that it is a great success for all concerned this year."

Thanks Don for your letter, by now you would have received my letter. Hope to hear from you again soon.

The next letter is from George Glendinning and he hails from Mackay, VK4-land and he writes:—

"I have read your first notes in "A.R." 7/59 and I wish you all the best of luck. I am at present studying for my licence by correspondence with W.I.A. I am a very active s.w.l. I do not think there are any s.w.l. clubs in this area, if there are I would appreciate it if you could help me locate same. If there are not, could you give me any guidance in forming same? I will be only too happy to forward any s.w.b.c. information I receive or hear."

Well s.w.l'ers here we have a letter from the "Cinderella State," hi, and they write as follows:—

"Fortunately, we see by your notes that Ian is still interested in s.w.l'ing and that you are

worked KR6 and VS6CJ several times and has had 83 KH6 contacts plus about 300 JA QSOs this year. The 11,000 volt transformer nearby still gives him very bad QRM.

The only JA ever heard by him in full daylight was JABBY during the Ross Hull Contest. Russ will be on 50 Mc. as often as possible until the end of the year when he will be coming south on leave.—3AHL.

AMATEUR TELEVISION TRANSMITTING

An A.T. Convention was held at Geelong the week-end July 19. As far as is known, this was the first A.T. Convention held in Australia. Charlie 3AAK and Geoff 3AUX brought Eric 6EC down from Melbourne with them. Eric will be remembered from his excellent series on "Amateur Television" in "Amateur Radio."

After the morning session the visitors had lunch at Dick 3ABK's place and inspected the shack. The afternoon session was again held at Bill 3BU's shack with 3ABK, 3ALG and Fred's son David present; Peter 3ZAV also called in. Charlie had his flying spot scanner on show, also his 288 Mc. converter. Geoff had 3.5 and 288 Mc. gear in his car and some mobile contacts were made. Eric described, with the aid of some very good photos, his t.v. tx which uses some 300 valves. He was kept busy answering questions most of the day. Lecture tapes from the British Amateur T.V. Club were run. Anyone interested in A.T.V. should contact 3AAK, 3AUX or 3BU. Bill 3BU has the tapes and is on 7.1 Mc. most days at 1230 and 1800, Sunday nights at 2000 on 3550 Kc.—3BU.

in contact with him. This will save us a great deal of typing as he can put you right on the track as regards our efforts to get this group working in W.A. You probably have your own ideas as to how to run the s.w.l. column and anything that we can do to help you in that regard, we will be more than willing to do. Looking forward with a special interest to hearing from you personally, or at least, looking forward with interest to the next copy of "A.R." Remember, W.A. is the "Cinderella State" and any little thing that you could possibly do to help us over here, as a group, to obtain the same sort of official recognition and privileges which you apparently enjoy in the Eastern States, we would be more than grateful for your help in that regard."

With regret we announce the passing of WIA-L6016, W. D. Brennan, late of 34 Kitchener Road, Merredin. He unfortunately died from peritonitis at the early age of 36, leaving a wife and three young daughters, and had just completed the Q Plus 17 inch set and also R. & E. 5 inch job, and so naturally he was looking forward to advent of t.v. in W.A.

S.W.L. OF MONTH

Re your s.w.l. of the month, you've got it, boy, herewith!

Mrs. R. S. Hardwick, of Rivervale, a close suburb of Perth, W.A. Age—the usual age of a grandma of 10 months standing, did operate a 9 valve, 7 waveband A.W.A. rx, in between working from 9 till 5 at the local Affectionate Diseases Hospital (in other words, King Edward Memorial Hospital), W.A.'s big maternity hospital, as a receptionist and booking-in clerk to all infanticipating mothers, and now finds herself knocking off work to carry bricks, such as typing the OM's reports of reception and carrying on the work as honorary secretary of the W.A. s.w.l. group. She carries the following imposing list of figures and letters after her name: New Zealand DX Radio Assoc.—2740; Radio Society of Western Australia—231.

And now we follow up with Mr. F. W. L. Hardwick, of the same address. He operates a converted AR8 and is in the very fortunate position of not having to worry about his correspondence once he has succeeded in tying his .X.Y.L. down to the typewriter. His interest in radio dates back to ante-diluvian times. In fact his first recollection of wireless is trying to pick up morse stations long before broadcasting was even invented, with equipment, which if he remembers rightly, consisted of a piece of carbon from a pencil resting on the edges of two razor blades, sunk in a piece of wood, a pair of headphones, a torch battery and a coil of wire on a 2-inch former with a sliding contact on top. From there he graduated to the crystal and ducom plug and has very vivid recollections of a lot of blown fuses in friends' homes. He has his hands full at the moment in between times of earning a crust as a spring-smith, what with cooking, DX'ing and being President of the S.W.L. Group. His numbers are: N.Z. DX Radio Assoc.—2709; Radio Society of W.A.—225; and WIA-L6001.

VK3 S.W.L. GROUP

Last meeting of the S.W.L. Group of the Victorian Division comprised a visit to the shack of VK3YQ. Five members of the Group had a most enjoyable evening. When we arrived, Keith was in contact with VK5VR. Michael and myself had words with him, the others being mike shy. Contact was a bit difficult at the time due to QSB and QRM.

Keith then showed us his gear starting with the 40 mx dipole, then the tx and rx—all home-brew. Then he showed us his Heathkit 2 mx and 6 mx converters which run into a Command rx. We also saw a very nice valve voltmeter, a Bendix frequency meter, and a few other items of interest. We then adjourned to inside where supper was provided by Mrs. Rolet.

Keith also showed us his other hobby of bookbinding, even though only a ham at it, it was very good. We left at 11.15 p.m. after a most enjoyable evening and thank-you to him.

NEWS AND NOTES

Don Grantley won't be entering the R.D. Contest but back him in the B.E.R.S. Contest in January. He sat for his ticket and passed regs. and morse.

9G1BQ on 20 metre s.b. wants reports. He QSLs 100 per cent. Likewise ZS6AIA on 28 Mc. wants reports and 100 per cent. QSL.

Ian Thomas, over the last 12 months, has heard only 416 VK stations. He says that after all his figuring out, there are only one-sixth of the Australian Hams on. He has commenced c.w. classes.

Well, fellas, I think I had better ring down the curtain for this month. Hope to hear from you all soon.

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FOR TECHNICAL SPECIFICATIONS—WRITE FOR BULLETIN SR-209.

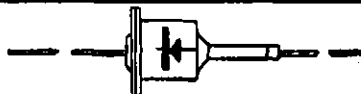
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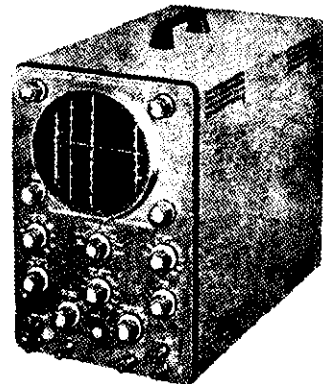
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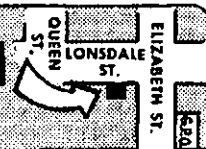
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Conditions over the past few weeks have been very changeable; poor conditions in the early part of June gradually became worse until about the middle of the month when a big sunspot disturbance "blacked out" all radio for some hours. Cable communications were also disrupted. As was to be expected, after a blackout, signals built up fairly quickly and by late July and early August all continents were available at various times of the day. Europe was excellent on 14 Mc. from 2030z to 2200z each morning, and again during the afternoon from as early as 0430z to 0900z. On some nights Africa was coming through around 0700 to 1000z on 21 Mc.

Looking back through my log I notice that conditions were very good about this time last year and for several weeks to follow on both 14 and 21 Mc. If history repeats itself, lots of DX should be worked from now on. Perhaps the "big sunspot" years are slipping too far behind us and things may not be quite as good.

Some big pile-ups were noticed at times when a "rare one" came on. PK1FF caused a real flutter on more than one occasion. His signals were fairly good to copy in Sydney though not over strong, however I missed him.

Reports from a wider area of Australia would be appreciated. How about it fellows, especially in VK6-7 and 9.

NEWS AND NOTES

PK1FF, Andorra, put a strong signal into VK-land during latter part of July.

VE3EGD hopes to be operating in Palestine during September, possibly using the same call sign as before—VE3EGD/ZC6.

Z6EJJ will be doing a round trip on s.s.b. to VQ2, CRT, ZST, ZS8, ZS9 and perhaps other places. He should be under way by the time you read these notes.

VP2VA is a new one on Tortola, British Virgin Islands. The operator, Ro, seems very nervous and uncertain, but he is eager, and will learn the DX routine quickly. His XYL is second op. A third license should be issued soon which should add up to some real activity from this rare spot.

EA9AC is active on 14305 Kc. s.s.b. from Spanish Guinea. Operates from 15-1800 GMT every day, from 15-1700 Saturdays, and 07-0800 Wednesdays and Saturdays.

VQ3PBD, Tanganyika, is back on 10 metre phone again after several weeks holiday in England.

ZS6AM is planning a DXing holiday in ZS8, Basutoland.

ZD9AC, Nick Mayer, is expected on 20 metre c.w. and a.m. soon. There is no airmail service to Tristan Da Cunha and with shipping schedules it takes at least three months for cards to reach this spot.

VS90M will end his Sultanate of Oman tour of duty late in November.

VK9AD will be leaving Norfolk Island, 24th October. There appears to be little chance of another Ham going to the island for some years to come.

W4WVB is going to Korea and expects to open up as an HL9 about the middle of September. He doesn't care for phone and will operate mostly on 20 metre c.w., and occasionally on 15 metres.

Cook Island.—The Rarotonga Amateur Radio Club has just been formed and its club station will regularly work 80, 40 and 10 metres.

The new prefix for China is BY, and BY1AC and BY4CW have been heard between 1100z and 1200z on 14 Mc. c.w. They have never been heard to make a contact, so evidently they are restricted to operations within the iron curtain.

VK0CC, of Macquarie Island, gets so few replies to his s.s.b. that he has decided to work mainly on c.w.

* Call signs and prefixes worked.
z zero time—GMT.

YK1AT is again active on c.w. on 14 Mc. and phone on 21 Mc. His name, Bohous, is not to be confused with Bohuos JT1AB—they are two separate operators.

ZS6ATA and a group of other South African operators are planning a long trip to Madagascar and associated islands in five or six months time. Kerguelon and Amsterdam will not be visited.

V84JT will be returning to Brunel in the near future. His call may again be VS4JT/VSS.

AC38Q is now AC55Q in Bhutan; he is operating phone on 14 Mc.

CR88M is now operating phone on 14130 Kc. from Goa, Portuguese India.

CO2QH/A is active from the Isle of Pines about 100 miles south of Cuban mainland. It is hoped that this rare spot will be given new country DXCC status. This is the first Amateur activity from there in seven years.

W6AIW should be operating from the Seychelles by now as VQ9ERR.

HK7AB is active from Colombia on s.s.b. Nepal.—9N1AA and 9N1AB have received their licenses and each expect to use 1kw. rigs on phone and c.w. ZP5IB, currently in Nepal, has not received his license yet.

V86EE is now in British North Borneo and expects to get on the air with 15 watts c.w.

ACTIVITIES

3.5 Mc. C.w.—3AKN: DL0Q/MM*, ZLs 1, 2, 3, 4*, VK9XK*, W4VNR*. L2022: Ws, DJ, ZLs. L3038: VK3GU, 9RO, W4VNE, 7ZVY, JA8JS, 9DJ, DL30X/MM.

3.5 Mc. Phone.—L2022: VK9AD. L3065: ZL-3BA, 40D.

7 Mc. C.w.—2AMB: HC4IF, KL7CTG. 2QL: U05AA, UQ4AQ, UP2NM, U8KAA, DJ4DA, Dms, Gs, UA1S, UABs. SAKN: JA1CQ/MM*, OZ4LF/MM*, W6YMO*, W0VXO*, F1JT, G3-KLC, UA1DZ, 4FO, Y05LE, YU3OF, 4BN, DL8BQ, 6ER, SP6AAT, 6QC, PY1OM, OAAFM, CE2DZ, JA8. L2022: DU7SV, W/Ks, G3GFG, OK1NH, DJ6SX, UA6UL. L3038: JAZUJ, 8GU, ZSU, IICUV, SP2PE, 3CJ, YOYDZ, 3JF, OZ-3GW, UA3KAB, Ws. BERS196: CR6CS, DJ-1SU, DU7SV, EA2YE, F9MS, G3KLM, GW-3IEM, HA5KFR, IIMQ, KL7FAR, OH1UG, OK-3QN, ON4JB, OZ4H, SM7TG, SP6CK, UA3KAH, 9VB, UBS1F, UZ3WP, U05AA, UQ3KAN, VK-8AU, VR2DA, 2DK, VS1CN, Y06KB, YU3DR, VQ4AQ, FK, CQ, ZE2KL, 4JO, 5JW, 9M2FS. Has listed about 300 Europeans alone for the month.

7 Mc. Phone.—2AMB: VR2DC, 2DF.

14 Mc. C.w.—2AMB: E19Y*, HA8KWG*, HA9HN*, KC8AT* (Ponape), PA0RFL*, VE-8CG*, BV1US, FF8BZ, KV4BO, KW6CQ, XW-8AI, ZK2AB, 4S7FR, 2QL: DU1PAR*, FR8BZ*, JZ0DA*, KC6ZZ*, PX1PF*, ZD1FG*, CN2BK, EA8CG, FY7YF, OY7ML, YJ1DL, 2ZK: DJ-3VY*, DM2AZM*, DL6CL*, DU1DR*, E19Y*, F8DF*, G8RH*, IIMQ*, HA8WW*, OE3AT*, OH1PX*, OKV1E*, ON4YN*, OZ7GC*, PA0QM*, SM7AJR*, SP2DX*, UA1DZ*, 3FH*, 6UI*, OSA*, Y03FN*, YU2HA*, 4DO: HC4IE*, JA5*, W/Ks*, KH6s*, KV4AA*, LZ1KBA*, VE7s*, UA-1BI, SH1, OKJVV, UBSUX, PY2CK, CR9AH, EA91A/3GF, XW8AI, JAOAQ, L2022: U8KBA, HC4IE, CR9AH, KL7AL, BERS196: CR9AH, CX5CO, FR8XK, FF8BZ, FK8AW, HC1HM, HR1MM, HS1VPT, JZ0DA, K6QPG/KW6, KM-8BI, MP4BCU, T12WD, VK9AD, VK0CC, VR-1BB, 2DA, VP9DK, YK1AT, XK1BG, YV3BT, 4S7FJ, 9M2DX, JA3API/MM, K60FD/MM.

14 Mc. Phone.—2AMB: EA3JL*, ON4LJ*, PJ2CE*, YV5ADQ*, XE1DT*, BV1US, FORAX, ZK2AB, KR8LP, 9M2DQ. 3AOM: CN8LE*, F9NN*, G2PU*, KL7CZW*, VEs 3VU*, 3BWY*, 6BV*, 6YE*, 7AGR*, 7ALR*, 7APL*, 7JB*, 7TR*, 8DX*, 8DD*, VR2CC*, VR2DK*, VR2DO*, VR2DP*, XE1BBN*, XE1UW*. 4DO: W/Ks*, KH6s*, PY4TK*, YV5ADQ*, VEs 3BHS*, 3BMB*, 8SO*, LU2HAE. L2001: Ws IBCR, 2BQM, BZM, BM, 3AEV, 4DFI, HO1, 8HRU, RWZ, 9RQO, K4HTB, K9EWL, KR6CF, ZL2PO, 9M2DQ. L2022: VS1AY. S.s.b. VK0CC, VK9AD. L2048: W1BEK (YL), W7GBY, WTADS, W8VDJ, W9-QPQ, KH6ME, KL7WAI, KW6CA, VE7ALE, VE7TR, VE3VU, XE2KW. L3065: KH6s BKR, BWO, HQ, KH, ME, OR, VEs 5FN, 5LM, 6HQ, 7AGR, 7ALR, 7APL/7, 8CG, KLs AHP, CLA, FBA, KR8HE, KZ5PA/KZ3, FK8AU, KW6CJ, W6MQ/MM, All W districts.

21 Mc. C.w.—2ZE: DL10*, UB5JX*, YO-3VU*, YU3BH*, XE0WYC*, ZS6APQ*, WNs*, 4DO: W/Ks*, KH6s*, FK8AI*, KP4AKI*, UB-5JX*, VE2L1/2*, ZC4CH*, CO2SI, T12CMF, WV2CSH/MM*. L2022: Gs, JA4HM.

21 Mc. Phone.—2AMB: VP8G. 4DO: W/Ks*, KH6s*, OA9B, XE2DO. L2001: VKs. L2022: JZ9DA. L3065: ZL1AHA, W6ZEM.

QSLs RECEIVED

2AMB: EA8CG, FQ8HA, HC1HL, HK5CB, CN8LE, GC2FMV, ET2KY, CR7AO, K8BBH, PJ2CE, PY9EJ, JZ0DA, KL7CKO, VR1B, VE-8PB, YS1MS, YS2SA, PY2EJ, ZD1FG, Z6EJA, Z6EJJ, YVOAB, XE1DT, VE8PB. 2QL: CR-9AH, LU1BA, UA00M (7 Mc.), VP9CY, YJ-1DL, Z6EJJ. 3AOM: CX2CO, HC1FG, HK7LX, OA4FP, T12WD, YS1MS. BERS196: OR4RW, FA8XS, TF3SG, T12WD, UC2KAD, UI8KBF, UQ2CG, VK9GK, ZET7O, 4S7FJ, 4X4KK, HB-9QP/MM. L2022: VQ2GW.

It seems that the VK cards from FO8AT, the Clipperton Island DXpedition, have gone astray. Anyone missing out let VK2QL or W8JIN have full QSO details and they will see what can be done. (2QL).

ADDRESSES

EA0AF—P.O. Box 195, Santa Isabel de Fernando, Poo Spanish Guinea.
CR4AX—Sal Island, Cape Verde Islands; or W2CTN.
ZB2E—Via ZB2I, E. D. Wills, No. 9, Naval Hospital Road, Gibraltar.
CP3CN—P.O. Box 641, Oruro, Bolivia.
FR7ZD—Guy Hoarav, Tampon, Reunion Island.
ZD2CKH—P.O. Box 38, Jos, Nigeria.
EL2Z—P.O. Box 270, Monrovia, Liberia.
VP7CA—Detachment India, Construction Bn. 7, F.P.O., New York.
TG9CL—P.O. Box 689, Guatemala City, Guatemala.

OQ5JW—P.O. Box 27, Luputa, Belgian Congo.
PZ1AH—Andre Scoepman, C/o Radio dienst, Zandery Airport, Paramaribo, Surinam.
TG0AA—P.O. Box 115, Guatemala City, Guatemala.

TA3UBB—Military Amateur System, Halfsee, A.P.O. 224 or A.P.O. 248, New York.
VP9CD—Via W3HQO.

F2CB/FC—Via Caserme Battesti, Ajaccio, Corsica.

YK1AT—Via W2CTN.

CR9AM—Box 111, Macau.

SU1MS—Try W6QNA.

VP4KE—Ken Robertson, 70 St. James St., San Fernando Trinidad, B.W.I.

AL5ER—Gerd, Foreign Legion Touggourt, Sahara, Algeria.

VP8ET—P.O. Box 275, Hamilton, Bermuda.

HB2CC—Box 235, Port-au-Prince, Haiti.

HS1E—Chuck, C/o. A.P.O. 146, San Francisco, California.

ZC4JC and ZC4RE—QSL via R.S.G.B.

FF8BZ—Box 6089, Dakar, French West Africa.
FF8CC—Box 3038, Dakar, French West Africa.

YN1MN—Box 1344, Managua, Nicaragua.

TF4WDH—Frank, M.A.R.S., A.P.O. 81, New York.

TF2WDX—George, 932nd A.C. & W. Sq., A.P.O. 81, New York.

VP1GLG—Gregory C. La Grenade, Box 271, Belize, British Honduras.

VE8DX and VE8DD—C/o. Box 2330, Edmonton Alberta, Canada (3AOM).

HC1FG—P.O. Box 2799, Quito Ecuador (3AOM).

VR2DO—P.O. Box 270, Suva.

4S7FJ—F./Sgt. Frank Johnstone, R.A.F., Katunyske, Ceylon.

FA8XS—Marcel Salvat, Post Radio, El Golea Sahara, Algeria.

I acknowledge the assistance given by the following: Don Cheser, W4KVX, Burlington, Kentucky, U.S.A., for use of his DX magazine via 2QL. 2AMB whose activities were rather limited a few weeks back but is on the job again this month. 2QL keeps me posted with latest news and QSL activities. 3AKN has broken the ice on both 40 and 80 metres; his list is a good indication of DX on these bands. 3AOM says, "The most noticeable thing about my log for the past few weeks is the number of VE stations on phone (list given in Activities). As far as I am concerned it seems rather remarkable the way the VEs have been coming in." Hope you had a good trip Georgia. 4DO, your notes appreciated Hal, have a good holiday in Brisbane. L2001, Barny, has been very active again this month. L2022, your letter was very interesting. L2048, welcome to the page, Mike; you have done very well considering the rx used. Your modified BC454 with converters and special antennae should make a power of difference to your reception. L3039, yes Dave I know what happens when a re-building programme is in progress. By the time you read these notes I will have been on the air for 30 years. L3065: conditions in Sydney were similar to those mentioned in your letter, Ian. BERS196, how about taking a rx along to Mildura? You certainly got among those Europeans on 7 Mc.

That is about all for this month.

FEDERAL

Fed. President: G. M. Hull, VK3ZS.
 Fed. Secretary: L. D. Bowie, VK3DU, Box 2611W, G.P.O., Melbourne, C.I. Vic.
 Federal Councilors:
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 Victoria—Alan Elliott, VK3AEL.
 Queensland—Arthur Walz, VK4AW.
 South Australia—Rex Richards, VK5DO.
 Western Australia—Ron Hugo, VK6KW.
 Tasmania—E. J. Cruise, VK7EJ.
 Papua-New Guinea—Russ Coleston, VK9XK.
 Fed. Contest Committee: Alex Hubbard, VK7AX, Manager, Box 371B, Hobart, Tas.
 QSL Bureau: R. E. Jones, VK3RJ, 23 Landale Street, Box Hill, E.I.I. Vic.
 Awards Manager: A. G. Weynton, VK3XU, 5 York Street, Bonheach, Vic.

NEW SOUTH WALES

President: Dave Duff, VK2EO.
 Secretary: Norm Beard, VK2ALJ, Box 1734, G.P.O., Sydney.
 Meeting Night: Fourth Friday of each month at Science House, Gloucester Street, Sydney.
 QSL Bureau: Box 1734, G.P.O., Sydney. Frank Hine, VK2QL, Manager; assisted by Allan Smith, VK2AIR.
 Zone Correspondents: North Coast and Tablelands: Noel Hanson, VK2AHH, Ryan Ave., West Kempsey; Hunter Branch: R. W. Rose, VK2AQR, 17 Brooks St., West Wallisend; Coalfields and Lakes: H. Hawkins, VK2YL, 9 Comfort Av., Cessnock; Western: W. Stitt, VK2WH, "Cambijowa," Forbes; South Coast & Southern: E. Fisher, VK2DY, 2 Oxlade St., Warrarong; Sth. Western: J. W. S. Edge, VK2AJO, Wallace St., Coolamon; Tamworth: S. Smith, VK2APS, 60 Upper St., Tamworth.

VICTORIA

President: D. A. Wardlaw, VK3ADW.
 Secretary: J. R. Lancaster, VK3JL.

NOTES

Administrative Secretary: Mrs. May, 478 Victoria Parade, East Melbourne, C.2. Postal address: P.O. Box 36, East Melbourne, C.2.
 Meeting Night: First Wednesday of each month at the Radio School, Royal Melbourne Technical College.
 QSL Bureau: Inwards and Outwards—W.I.A., Vic. Div., P.O. Box 36, East Melbourne, C.2.
 Zone Correspondents: Western: W. J. Kinsella, VK3AKW, Magdala, Lubeck; South Western: W. Wines, 48 Cranley St., Warrnambool; Far North Western: M. Folie, VK3GZ, 101 Lemon Ave., Mildura; Midlands: R. Jonasson, VK3ND, Farnsworth St., Castlemaine; North Eastern: T. K. Tennant, Park St., Tatura; Eastern: J. Spark, VK3AJK, 20 Marshall Ave., Moe.

QUEENSLAND

President: John Pickles, VK4FP.
 Secretary: W. J. Rafter, VK4PR, Box 638J, G.P.O., Brisbane.
 Meeting Night: Fourth Friday in each month at the State Service Union Rooms, Elizabeth Street, Brisbane.
 Divisional Sub-Editor: D. B. Hughes, VK4ZBD, 60 Mayne Rd., Bowen Hills, Brisbane.
 QSL Bureau: Jack Elles, VK4JF, Vanda St., Buranda.
 Zone Correspondents: Maryborough: R. J. Glassop, VK4BG, 80 North St., Maryborough; Townsville: R. K. Wilson, VK4RW, Hogan St., Stuart, Townsville.

SOUTH AUSTRALIA

President: B. W. Austin, VK5CA.
 Secretary: J. C. Haseldine, VK6JC, Box 1234K, G.P.O., Adelaide. Telephone: M 7851.
 Meeting Night: Second Tuesday of each month at 17 Waymouth St., Adelaide.
 Divisional Sub-Editor: W. W. Parsons, VK5PS, 10 Victoria Ave., Rose Park, S.A.
 QSL Bureau: G. Luxton, VK5RX, 27 Belair Rd., West Mitcham, S.A. (Inwards & Outwards).

WESTERN AUSTRALIA

President: L. Roeger, VK6HR.
 Secretary: J. R. Elms, VK6BE, Box N1002, G.P.O., Perth, W.A.
 Meeting Night: Third Tuesday of month at Perth Tech. College Annex, Mounts Bay Rd.
 Divisional Sub-Editor: J. R. Elms, VK6BE, 29 Central Road, Kalamunda.
 QSL Bureau: Jim Rumble, VK6RU, Box F319, G.P.O., Perth, W.A. (Inwards and Outwards).

TASMANIA

President: Mr. L. R. Jensen, VK7LJ.
 Secretary: K. E. Millin, VK7KA, Box 371B, G.P.O., Hobart.
 Meeting Night: First Wednesday of each month at W.I.A. Clubroom, 147 Liverpool St., Hobart.
 Divisional Sub-Editor: I. Nichols, VK7ZZ, 9 Cressy St., New Town.
 QSL Bureau: J. Batchler, VK7JB, 39 Willowdene Ave., Lower Sandy Bay, Hobart.
 Zone Correspondent: North Western Zone—Terry Tong, VK7TT, Northern Zone—Ray Walden.

PAPUA—NEW GUINEA

President: F. N. Nolan, VK8FN.
 Secretary: Roy Taylor, VK8AU, P.O. Box 204, Port Moresby.
 Meeting Night: Last Wednesday in each month, R.S.L. Reading Rooms, Ela Beach, P. Moresby.
 QSL Bureau: G. Kiernan, VK9GK, P.O. Box 204, Port Moresby.

FEDERAL

W.I.A. REPRESENTATIVE TO GENEVA CONFERENCE LEAVES

John Moyle, VK2JU, W.I.A. representative with the Australian Government Delegation to the Extraordinary Radio Conference of the International Telecommunications Union, which commenced in Geneva on August 15, left Australia on Qantas Flight EM533 on Friday, 7th August.
 Passing through Melbourne en route, John was met by the Federal President, Max Hull (VK3ZS), and Vice-President, Bill Mitchell (VK3UM), when the plane landed at Essendon airport for an hour. John was in high spirits and hopeful for the future of Amateur Radio. His farewell message was taped for re-play over Divisional stations of the W.I.A.

MEMBERS OF DELEGATION TO THE GENEVA CONFERENCE

Herewith is the list of members of the Australian Delegation to Geneva:—
 E. J. Stewart, Supervising Engineer, Postmaster-General's Department—Leader.

L. F. Pearson, Contoller, Radio Branch, Postmaster-General's Department.
 L. J. Keith, Investigation Officer, Radio Branch, Postmaster-General's Department.
 J. S. Wigg, Radio Inspector, Radio Branch, Postmaster-General's Department.
 M. Strohfeldt, Divisional Engineer, Engineering Division, Postmaster-General's Department.
 R. Baird, Assistant General Manager, Overseas Telecommunications Commission.
 H. A. De Dassel, Australian Member, Commonwealth Telecommunications Board, London.
 W. Hatfield, Australian Broadcasting Control Board.
 E. Anderson, Department of Civil Aviation.
 Lt. K. Williams, Department of the Navy.
 Capt. J. Mapson, Department of Army.
 Sqdn. Ldr. R. Starkie, Department of Air.
 J. M. Moyle, Wireless Institute of Australia Representative.

Representatives from the Department of External Affairs will also join the Delegation when it reaches Geneva.

ARMY CLUB PROPOSE AMATEUR STATION

From "Scan," the Southern Command Army Journal, of June 1959, is extracted the following:—

"Plans are now being made to establish a licensed Amateur Radio Station at Puckapunyal which, members hope, will be on the air in the near future.

"The aim of the club is to foster Amateur Radio and act as a medium to train members to the standard necessary to obtain a P.M.G. Certificate of Proficiency.

"This will enable them to obtain a licence to operate their own stations.

"The club has the interest and patronage of Brigadier G. P. Hunt, Area Commander, who was an active Ham for some years, and will be fostered by Capt. V. A. E. Crawford.

"Capt. Crawford is building his own equipment to operate on the 50 and 144 megacycle Amateur band.

"Postal Department permission has been granted to Sgt. R. B. Wallace, of 1 C.O.D., Bandiana, to operate an Amateur Radio Station. He has been allotted the call sign VK3UW. Sgt. Wallace has been interested in Amateur Radio for some years and has built several receiving and transmitting sets."

FED. CONTEST COMMITTEE

Members of the Federal Contest Committee now comprise: Messrs. R. D. O'May, 70M; L.

R. Jensen, 7LJ; F. E. Nichols, 7RY; J. C. Batchler, 7JB; A. Hubbard, 7AX. After a lengthy discussion regarding their duties, at the first meeting of the Committee, it was finally decided on the following allocations (on a possibly temporary basis until such time as the work involved in contests was clarified by experience):—

Mr. A. Hubbard to be general manager and chairman.

Mr. F. E. Nichols to be secretary and treasurer.

Mr. J. C. Batchler to be sub-manager of VK-ZL Contest and publicity.

Mr. R. D. O'May to be sub-manager of Ross Hull and N.F.D. contests.

Mr. L. R. Jensen to be sub-manager of R.D. Contest.

In addition, 7CH, 7DW, 7ZZ, 7AL, 7KS and 7LZ are to be ex-officio members of the Committee.

FEDERAL QSL BUREAU

A new Award styled Port Wine Award, established by the Port Wine Institute in Oporto, Portugal, and patronised by the R.E.P., is designed "to foster the world-wide renown of Port Wine." Details may be had from this Bureau.

An expedition to Infn signing EA9IA was scheduled to be active during July. For those who missed out if, it is stated that a regular station in the same location will be active from August onwards.

Alan VK3HL, on the homeward leg of a world tour, and accompanied by his XYL, was the guest of Al Scarlett, W2CC, for nine days in July. Al's ears did not have an opportunity to get back to normal, because within a few days of Alan's departure, Jack Elliott, ZL3CC, dropped in for a fortnight's stay. Al and Jack propose touring the Lakes region early in August and on return home, Jack will proceed south to be the guest of W5ARV who

SILENT KEY

It is with deep regret that we record the passing of:—

VK2AYE—D. E. Evans.

VK3OS—R. O. Scott.

CONTEST CALENDAR

Compiled by W.I.A. Fed. Contest Com.



SCANDINAVIAN ACTIVITY CONTEST:

Dates: C.W.—1500 GMT, Sept. 19, to 1800 GMT, Sept. 20, 1959.
 Phone—1500 GMT, Sept. 26, to 1800 GMT, Sept. 27, 1959.

Rules: See August "A.R."
 Logs: Mailed not later than 15th Oct. '59. To Contest Manager, S.R.A.L., P.O. Box 306, Helsinki, Finland.

VK-ZL DX CONTEST, 1959:

Dates: Phone—1000 GMT, Saturday, 3rd Oct.—1000 GMT, 4th Oct.
 C.W.—10th Oct.—11th Oct., 1959.
 Rules: Overseas, as for 1957. VK-ZL, Bonus value altered (watch Aug. "A.R.").

"CQ" WORLD-WIDE:

Dates: Phone—Last week-end Oct. '59.
 CW—Last week-end Nov. '59.

has organised an extensive tour of the south and western states, on the conclusion of which Jack will embark for ZL.

One of the most travelled, best known, and most consistent QSL operators is Frank Johnstone, of the R.A.F. He has also found time to stay for varying periods in many of the rarer countries. At present he can be heard daily on 14 Mc. c.w. as 4S7FJ. Frank uses only 25 watts input to a Zepp. If you need a Ceylon QSL watch for 4S7FJ.

—Ray Jones, VK3RJ, Manager.

NEW SOUTH WALES

The monthly meeting of the Wireless Institute (N.S.W. Division) was held on 24th July at Science House, Gloucester Street, Sydney, commencing at 7.45 p.m. The meeting was opened by the President, Dave ZEO, with approximately 45 members attending. 19 new members were admitted to membership following the reading of the minutes and correspondence.

A tribute was paid to the work which Joe ZJR has done for the Division over the years, possibly all now know that Joe has, under medical advice, been forced by his state of health to relinquish his Amateur activities completely for at least six months. He, latterly, has been responsible for the tape recording of lectures and other material which will be going out to country clubs and members. It goes without saying that we all wish Joe a speedy recovery to robust health.

The President then asked John ZJU, our accredited representative to Geneva, to make

W.I.A. N.S.W. DIVISION SOUTH WESTERN ZONE

Seventh Annual CONVENTION

at NARRANDERA

3rd, 4th, 5th OCTOBER, 1959

Location: Postal Institute Hall
Bolton Street, Narrandera

A good programme of events is being drawn up including a Scramble on 2 and 5-6 metres. Good prizes for all events. Also good prizes will be awarded to the home stations for the most contacts with those at the Convention.

BOOK ACCOMMODATION EARLY
with F. Pearson, VK2ACQ,
42 Frederick St., Narrandera, N.S.W.

WIRELESS INSTITUTE OF AUS. HUNTER BRANCH, N.S.W. DIV.

★

EIGHTH ANNUAL CONVENTION

SATURDAY and SUNDAY,

3rd and 4th OCTOBER, 1959

★

PROGRAMME:

Saturday, 7.30 p.m., October 3—
Dinner at University of N.S.W., Newcastle. Guest Speaker: Hon. Alan Fairhall, M.H.R., VK2KB.

Sunday, Oct. 4, Blackalls Park—
9.30-10.30 a.m.: 144 Mc. Hidden Tx Hunt.
11 a.m.: W.I.A. Broadcast.
11.30 a.m.: Disposals Sale.
Noon: Lunch.
1.15-2.15 p.m.: 7 Mc. Scramble (no a.c. permitted).

3-4 p.m.: 144 Mc. Hidden Tx Hunt.
4.30 p.m.: Prizegiving, Farewells, etc.
Usual races and competitions for XYLS and Harmonics.
Boiling water will be available free.

OBITUARY

DAVID EVANS, VK2AYE-VK2AYD

The death occurred of Dave Evans, VK2AYE, on July 27 while he was undergoing a serious operation at St. Vincent's Hospital, Sydney.

Dave was known to many Amateurs throughout the State and for that matter in all States, since in his occupation he frequently found himself in many parts of Australia. One of his ambitions which was hardly realised was to operate mobile marine from his ship in order to keep in touch with his many friends.

Men of the calibre of Dave are rare, and his voice in the affairs of the Wireless Institute will be missed by all who knew him.

VALE WES, Z88ZK

Many VK Hams will regret the passing of Z88ZK (Wes) on 21st July after a severe illness. It may not be known that as a result of injuries received during World War II, Wes was totally blind and had other injuries also.

He was very well known in VK and ZL and throughout the world, and was a regular habitue of 10 metre phone bands.

I met him first in 1956 and during the limited periods the band was open had approx. 350 QSOs with him at 1700 hours E.A.S.T. and I am sure that the many who knew him will miss his jovial personality on the air. The Ham fraternity will be the poorer for his passing and on behalf of the VKs I general I offer this tribute to his memory and offer condolences to his XYL and family.—AK Brown, VK3QW.

a few comments on the occasion of his last appearance at a meeting prior to his departure for Europe and the Conference. John made comment on the position as it stands at the moment, and laid particular stress on the annotations to the recommendations which are to be placed before the representatives of the many countries attending. He stated that he was optimistic regarding the outcome of the deliberations and that he hoped that his efforts would meet with success. Bill ZYB proposed that John be farewelled by the meeting, which was carried in the usual manner.

The lecturer for the evening was Perc. Naylor, who lectured on "Relays," and took us through the subject in a skilful manner, dealing with the design and operation of all kinds of relays. In proposing the vote of thanks to the lecturer, Bob ZOA pointed out how much a lecture of this kind is appreciated, and expressed the hope that this would be followed by many more such lectures.

The meeting closed at 10.30 p.m. for coffee, and members adjourned for the usual ragchew.

We have noticed that attendances at the monthly meeting are not all they should be, possibly owing to the cold weather, many who would normally attend have stayed away. We do urge you to come along each month; we wish to meet you all and would like you to partake of the interesting lectures provided each month. For the convenience of new and country members, there are two members of Council who are ready to greet you, to look after you and help you find the chaps you wish to meet, so fellows roll up to the next meeting at Science House, Gloucester Street, Sydney, on the fourth Friday of the month—August 28. See you there.

HUNTER BRANCH

Well, as this is being written the I.T.U. Fund closed and by and large it was quite a success, sobered by the fact that some well known chaps for reasons of their own did not see fit to contribute. However, congrats. to those who saw the light and I think a special thanks is due to those official arm-twisters, OATS to you; up this the OATS were ZCS, ZXT, ZZL and ZQR. The night was dark and stormy but the following braved the elements to listen to Leo ZAC lecture them on Receiver Selectivity: VKs ZAAE, ZZDL, ZZMO, ZFF, ZXT, ZZNW, ZAKX, ZASI, ZRI, ZZJR, ZZRR, ZCS and Associates Davis, Stobbs, Sutherland, Sumner, Fyfe and Milner. Apologies were or should have been received from the Phenol Bay Mob and the Lone Wolf from Westy.

Nice to be able to listen to ZAWX on Monday nights now that Lionel hurries over his evening meal and pulls the big switch on at 1900 hours, an hour earlier. At this time your official Branch station is being heard in VR-land at strength 9 and some of the gang over there hope to be in future call-backs. Meandering along Bull Street the other day noticed a

conglomeration of dural pieces on top of Bill ZXT's beam—288 or what, Bill? Had conversation with Harry ZGH from Raymond Terrace, and he hopes to be meeting the gang at our Annual Dinner on October 3. Les ZAOB, Les ZRJ and Tas ZGV also spoken to over the ether—quite an event since t.v.i. poked its ugly head into our midst. Another absentee has been Harry ZAF, so after several false starts, managed to call on him and found that Harry had been in bed for a month and is now just starting to sit up and take some nourishment and soon he will be brushing the cob-webs off the gear.

I hope that all who are coming to the sooper-doooper Dinner and Field Day on Saturday and Sunday, 3rd and 4th October, have already advised the Secretary, Gordon, 15 Marine View, Newcastle, as it helps quite a lot to know well in advance the attendance figures. We promise you an excellent time and the array of talent at the Dinner surprises even little me.

Unfortunately a sad note must be expressed in these notes to mark the passing of Dave ZAYE, who was well known to us all. Vale, Dave.

September monthly meeting will be at the usual place, Tighes Hill, University of N.S.W., on 11th. Weather should be better so there will be no excuse for non-attendance. P.S.—Even though the I.T.U. Fund is closed, I'm sure post donations will be accepted.

VICTORIA

Members are reminded that owing to school holidays, the next general meeting will be held on the second Wednesday of the month instead of the first, that is on the 9th September, at the Radio Theatre, Royal Melbourne, Technical College.

The meeting will take the form of an Auction Night, and members are requested to bring along any gear surplus to their requirements. Please attach a tag, containing your name and reserve price, to the equipment. Some surplus gear from VK3WI will be available for sale, also a few items from Disposals.

The Annual State Convention will be held in Stawell during the week-end of 3rd and 4th October. Agenda items for same must be in the hands of the Hon. Secretary of the Division by 14th September. A very interesting programme covering the two days has been planned, and it is hoped that a large attendance of country and city members will be in attendance.

Joe Bramall, VR4JB, has returned to Honiara in the British Solomon Islands. Whilst in Melbourne with his wife, Joe made the acquaintance of many of the VK3 Amateurs and also became a member of the Victorian Division of the W.I.A. Whilst here in Melbourne, Mrs. Bramall combined business with the pleasure of seeing her family in Frankston, and presented Joe with a very fine 9 1/2 lb. harmonic, Hugh Ashton. An exceedingly clever arrangement as baby arrived on Joe's birthday and their wedding anniversary. No doubt VR4JB will be on the lookout for contacts with his VK friends.

NORTH EASTERN ZONE

Wind and rain, rain and dust, combinations of all, antennae windmilling like helicopter blades making signal meters dance, so has been the conditions here this week. The junior zone correspondent reports that t.v. antennae in Shepparton were snapped off half

W.I.A. VICTORIAN DIVISION SOUTH WESTERN ZONE

CONVENTION

will be held on

SATURDAY and SUNDAY,
31st OCT. and 1st NOV., '59

at

WARRNAMBOOL

For all inquiries and required accommodation, contact—

Bill Wines,
48 Crawley St., Warrnambool,
no later than 1st October.

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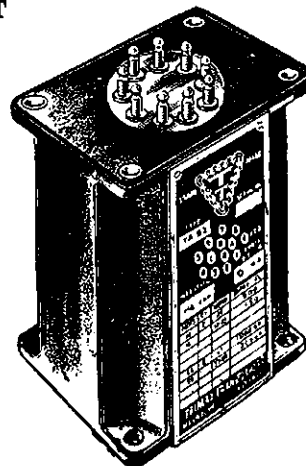
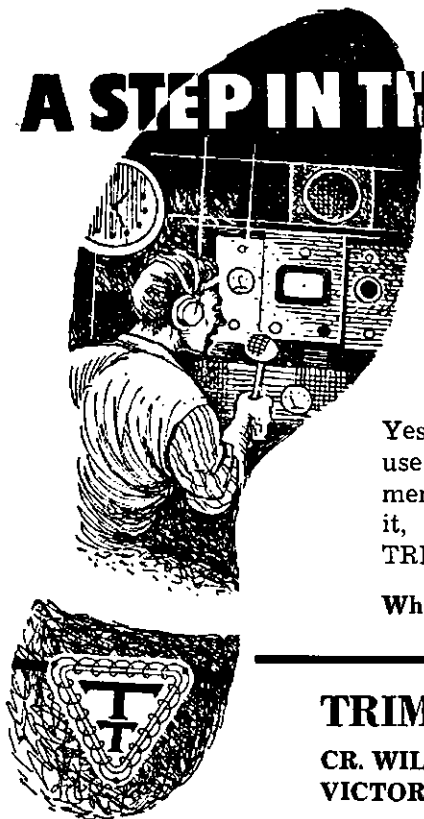
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way up the mast which are approximately 50 feet up. Power lines, trees and what have you, including Sid's (3CI) tv. antenna. However, up to writing the superior construction of Ham antennae and beams have enabled them to still stay in their rightful positions.

Bruce 3AGG now working on 4 mx with 3CI and JAFF. Sid 3CI is now back on 6 mx, but is now being plagued with t.v.i. Ted 3A0E now has a walkie-talkie which I hear he hopes to use on 40 mx with some modifications. Ted has shifted his mobile gear into a new auto (well new for him).

Practically all the other members of the zone are suffering from occupational neurosis due to writing too much to the zone correspondent.

Alec 3AT now back on the air working DX on 20 mx with a half wave 40 mx doublet of 32 gauge wire. Alec assures me it gets out like a bomb and can't be seen except at very close quarters. He has just finished a modulator so we should hear more of Alec from now on.

Since I had forgotten to remind you I hope there were more than three of this zone working the R.D. Contest this year.

MOORABBIN AND DISTRICT RADIO CLUB

Our shack at 17 College Gr., Black Rock, has come along nicely and was ready for our opening night on 21st August. Through the efforts of several of our members, benches have been erected on which to place our gear and forms and leather covered seats have been renovated to seat members at meetings. Permission has not as yet been granted by the local Council to put up poles, but we are expecting such to be forthcoming in the near future.

A record 25 members attended the meeting held on Friday night, 17th July, and much business was discussed, notably our official opening night. One new member, Arthur 3AHD, and four junior members were welcomed to the Club, bringing the membership to 41. A Theatre Night to see "My Fair Lady" was arranged for Friday, 9th October, and we are hoping to have a very enjoyable evening.

It was decided to make the first Friday evening in each month a "practical" night, so that members could discuss with their fellows problems arising from time to time which they may be having trouble with. This practical night will give junior members an opportunity to learn what cooks, and replaces the proposed "matter" night.

Don't forget that a certificate is issued to any VK station having worked 14 Moorabbin and District Radio Club stations including VK3APC. Make application to Secretary, Alf Chandler, VK3LC, giving christian name, call sign, date and time of the respective QSOs.

QUEENSLAND TOWNSVILLE

The last meeting of the T.A.R.C. was again well attended and main interest of discussion was the formation of a Far Northern District of W.I.A. After almost all present had voiced their opinions, it was decided that we would have nothing to gain at present by severing apron strings with the Queen Street gang. The main census of the debate was that the added membership fee; not all members in the north joining the branch, and that the bulk of the work would fall on the few willing horses.

Unfortunately I could not stop for the discussion due to my daughter meeting with an accident, which necessitated a brief visit to apologise before taking her home from the sports field. It was decided that I meet the Cairns boys during the week-end on my visit there and extend to them personally the good wishes of our club and invite them to a special meeting on the 29th August. At this get-together I was asked numerous questions and really thrashed out some points of difference. Was fortunate to meet Arthur 4FE on a brief visit from Normanton, not having seen him for a long time; still looking well. Claude 4ZY, Bill 4XM, Basil 4ZW and maybe a couple of others hope to make the trip to Townsville, depending on their various places of employment. Is the one-eyed monster threat the reason why so many of the southern Queensland gang are off the air, in a spate of re-building? Very few of them are heard.

A film evening held by the local club was very poorly attended, in fact it was quite disappointing to the club officers who strive to keep the club progressive. The films were all educational, one being our hobby—radio.

Bob 4CR heard again on the air after a absence; not even at the meeting. 4EJ doing a spot of c.w. while re-building. The twins, 4MF and 4PF, still cheating each other at cards while the band is dead. Alan 4PS has all gear ready to pile up a good score in the R.D.

Contest; he certainly enjoyed the last one. John 4DD still wrapped up in the a.s.b. project. Claude 4UX heard on the new tx, apparently John 4DK had cleared up his gravel throat as Claude's modulation seems B.B.C. quality.

Vern 4LK and Ken 4ZAK still on 144 Mc., while Bill 4ZBE still sits on 50 Mc. and works the odd opening to JA and. Bob 4RW hopes to hear many southern States during the R.D. Contest on this band; maybe get W.A.S. 50 Mc. Bert 4LB still vainly calling CQ DX on dead bands and looking forward to them opening up. Doug 4ZEM heard working JA land; also worked him myself. 4OM still flying around; now knows the area where the "Sea Fox" was in trouble.

The Amateur in everyone's mind is John 2JU; hope he brings home the "bacon" from Geneva. Basil 4ZW reports that the recent cold spell may be the reason for him not working the far north hox on 7 Mc. although still manages the "Kookaburra" session at 7 a.m. each morning. Harry 4ZP back on the job with the R.R.R. and looking forward to next holiday. Hope the XYL is now better. Harry; same wish to Jess, better half of 4UX.

Rex 4LR up home in the sunshine on mid-winter vacation. Harry 4HV getting itchy feet and hopes to get back to sea again. Alan 4BE has been down awaiting re-opening of DX conditions; now a "hi-fi" devotee. Charlie 4BQ now on deck again after attack of the mumps.

SOUTH AUSTRALIA

Peek-a-Boo! I am back again! Despite all the plots, the espionage and the dubious tricks to the contrary, the wheel has turned a complete circle and I am once again writing the VK5 Divisional notes for the magazine, with my usual reckless abandon. "Comps" 5EF, who has been writing the notes since I vacated the position and, incidentally, doing a much better job than I could ever hope to do, now finds that the commitments of his vocation will in future entail quite a lot of travel Interstate at all sort of times, and thus will not permit him to concentrate on the notes. Now all who know "Comps," also know that he is something of a perfectionist in all things, and if he cannot do a perfect job on the notes, then he would rather not do them at all. So to put it briefly, as I always do (Oh, that man is in my hair again!—Editor) despite what the Editor may say, I am now the Sub-Editor for VK5, which you may or may not, know is recognised throughout VK as the leading Division of the W.I.A.

Now the job is not going to be easy. Most of the enemies that I made when I used to write the notes have faded into oblivion, or are now treating me with ignore; I have forgotten the rackets that I used to work to dodge the eagle eyes of the editorial staff, and therefore I will have to depend upon you, dear reader, to help me with news, scandal, dubious stories and the like, to at least approach the standards set by my pre-dess—predecessor—the bloke that was writing the notes. Can I count on you? Can I rely on you? I cannot! OK, pull your cranium in, I will fight on alone. I will tell lies, I will make up untruths, I will give my imagination full rein, secure in the knowledge that the Editor and his mob will have to serve the result of the libel actions in gaol. Well, here goes, keep your fingers crossed, block your ears up, because anything can happen now that Pansy rides again. Hi-Ho Uranium!!

The monthly meeting of the VK5 Division was held in the clubrooms to a capacity audience of members and visitors, and all present thoroughly enjoyed an interesting and instructive lecture given by Brian Sheehan on the principles and construction of turret tuners. The original idea was for the lecture to be a joint affair, but the co-partner, Peter Rudge, was unable to make the meeting and he forwarded his side of the lecture on, and Brian did a solo act. The lecture was illustrated by slides, and together with the clear and lucid explanations given by Brian, the attentive audience received more than their money's worth on the subject of turret tuners. The vote of thanks to the lecturer was ably proposed by Al SZCR and the enthusiastic response on the part of the members was a clear indication of its appreciation.

General business saw several topics of a domestic and Federal nature brought up for discussion, and the Chairman, Brian 5CA, also asked for someone to move a vote of appreciation for the work of the retiring Sub-Editor, to which the members present agreed with one accord. A suggestion that a word of thanks be made to the newly appointed Sub-Editor was received with such violence and turbulence by all present that the said newly appointed Sub-Editor blotted his copy book immediately by telling all present just what

they could do with their words of thanks, and the meeting ended in uproar at the witching hour of 10 p.m. The normal ragchew continued of course until a much later hour.

At the moment of writing, Inky 5WF is touring the Eastern States per car and caravan. Expects to be drifting around for a couple of months.

Tom 5TL, of Renmark, has been sighted down in Adelaide recently, but evidently kept out of sight of my telescope. Tom, by the way, is something of a vocalist, and I have it on good authority that when he warbles a verse or two of the latest hits like "I passed by your window" or "Till the sands of the desert grow cold," all the teenager itty-bitty's faint, scream and fall in the aisles. "Tom of the tantalising tonsils!" they call him.

5JW can be heard most times on 21 Mc. with his beam pointed to the prevailing DX, and let any station bob up with even the slightest tinge of a Scottish accent, and John is on to him like a bulldog and never lets go until he gets him. I understand that only stern measures prevent him from wearing a kilt in the shack. How subtle can I get!!

5JO is another one who bobs up now and again in unexpected places and he is still as keen as ever for contacts. He has had to slow down a little since his sickness, but like the old song, you can't keep a good man down. Still got that 794 element beam for me Joe? I will surprise you one day by picking it up.

Roop 7RM heard on 7 and 21 Mc. recently. He was ex5RM of many moons ago, and still has many pleasant memories of the best State in VK. Cheers Roop! John 5JM is a new one to Port Lincoln as a fully fledged Amateur. Passed the December exam. I think, although he had a Z call for some time. Nice work OM, hope we contact some day.

Wally 5DF is back on again after a re-build which put the shack into the sitting room and now Okayed by even the XYL. Do you dress for contacts as well as for dinner, Wal? How is the tower coming along? Pat 5LT is fairly consistently on 14 Mc. I do not often hear him at my QTH, but I certainly hear him being called from overseas. George 5GA is another one who lives at Port Lincoln and although not active on the air, is certainly active in other spheres. Like Doc 5MD, he runs a boarding house, but the tenants have to pay. Oh, I'm a trick.

There was a time when a contact with a mobile station was considered to be something. Nowadays such contacts are commonplace and it is remarkable how many of the local gang are interested in this form of Amateur activity. Jack 5WT, whose home QTH is at Murray Bridge, with the call sign of 5AM, is one who has been mobile for quite a long time. I heard him in contact with 3AEC late one afternoon and he was mobile on the way down to Glenelg, with an outstanding signal on 7 Mc.

Another one to give the mobile game a go is George 5GD and I have had a couple of contacts on 7 Mc. with him as he was on the way home. I heard him one afternoon calling a VR with his 4-watt job in the car, and was keen to see if he got him. He did not, but you can't blame him for trying.

Heard Cec 5CD on 7 Mc. the other Sunday morning with an excellent transmission. Later on in the day I heard him again on 21 Mc. in QSO with Rob 9RO. Cec was somewhat apologetic for his low power, but as far as I am concerned it was doing an excellent job. Long time no see, Cec.

Any time I switch on the rx and listen to 7 Mc. I can bank on hearing Ken 5IM. In fact any time I switch on and listen to any band I can hear him. He has an excellent signal, seems full of enthusiasm for the grand old game of Amateur Radio, and I must confess that every time that I listen to him in QSO with anybody, I have a feeling of nostalgia for the good old days when it used to take a surgical operation to separate me from the shack.

One can be unlucky, you know, especially when it comes to being caught to write these notes again. Actually it all happened because I have a grandson who likes nothing better than to sneak into my bed early in the evening and fight fierce battles with Red Indians, capture lions, tigers and an occasional elephant, and even take on single-handed the big bad wolf that was always frightening "Wed Widening Hood." Between you and me I have never been able to find any "Wed Widening Hoods" where he says they are, but then I have a poor imagination! Anyway, to make a short story longer, all of these highly exciting adventures take place at the end of the bed, preferably under the bedclothes, and the other night he was engaged in a battle to the death with a big, big, big crocodile, to wit, my big toe, when he suddenly decided to gallop up and tell me how the battle was getting on.

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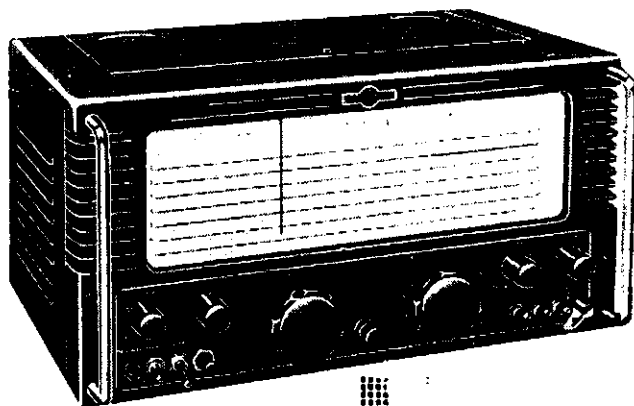
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EDITORIAL



HISTORY

HOW many of us in our school days have thought or said: "What a dry old subject is History", little realising at the time or appreciating its value to us in later life. It is axiomatic that as we grow older and our memories become less agile and retentive, we fall back on a pastime called Reminiscences. The venue is the park bench, the smoking room of the favorite club or the drawing room of the Rest Home. Many and varied are the arguments that take place as to whether Tom was the first to own a co-herer, Dick used to go out with Ella, or Harry owned a spaniel or a setter. The arguments are never settled to everyone's satisfaction because our memories fail us.

It is this particular aspect of our innate make-up that we wish to discuss—our memory, or rather the lack of it, as age creeps up and the past becomes less clear. It is, however, the facts of our earlier beginnings as an Institute or Amateur body rather than Tom's transmitter, Dick's lovelife, or Harry's pets that concern us. Being in a reminiscent mood recently, some old copies of the R.S.G.B. Bulletin were being perused, and it was interesting to note that one of our G contemporaries had compiled a series of articles dealing with the beginnings of that Society—that good old historical stuff again. It reminded us of the W.I.A.'s lack of it when we were more recently again preparing the W.I.A.'s proposals for the P.M.G.'s Department and the brief for the Institute representative to Geneva.

It is on such occasions that the paucity of the Institute's history becomes apparent. It is sad to realise that the history of the oldest

Amateur Society in the world, our own W.I.A., is not recorded in some lasting form for posterity; and to realise also that as the years roll by, more and more of our sources of information on our History, the Old-timers, are gradually dying out. It is by them that so much of our early history was made and from them our present status and organisation inherited. The least we can do for them when they gracefully retire from active participation in our grand hobby is to give them something tangible in the form of a properly recorded history to reminisce about in their leisure.

Every individual member, newcomer and active old-timer alike, can contribute something useful by jotting down the outstanding Amateur events of the day and by forwarding such facts and information periodically to his Division for transmission to Federal Executive. There it will be safely filed away and retained in the one place for future action. Early copies of Bulletins or Journals which preceded our present publication are all potential sources of information. The memories of our active old-timers can be wracked and important facts written down as they are remembered. From these and other sources will emanate the facts and our early history unfold.

At the appropriate time Federal Executive intend to set down these facts so that our early history is not completely lost—it is up to every individual to record historical facts, now in your head, old files, bulletins and the like and pass them to your Division. You are now required to keep a log of your transmissions in the technical field, see that you also make the effort to record our History.

W.T.S.M.

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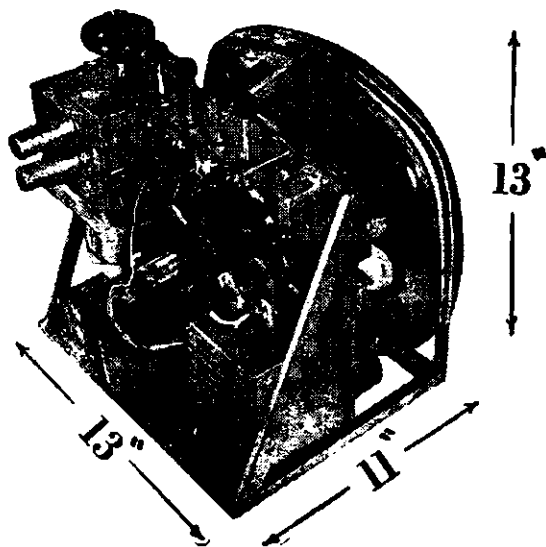
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Plate Modulated D.S.B.R.C. or D.S.B.S.C.

R. E. W. MAY,* VK1PM

A RECENT article¹ in this journal described a transmitter which operated on double sideband reduced carrier or double sideband suppressed carrier. The enthusiastic remarks of the author of that article concerning his experience with d.s.b.r.c. rang true with me since I have been using this form of modulation for some three years or so. However, the present system employs plate modulation, whereas, in the transmitter described in the above article, and in the original articles² in "QST," screen modulation is the method used to obtain d.s.b.r.c.

The original d.s.b.r.c. dissertation in "QST" by George Grammar needs no elaboration. To reiterate in simple terms, a d.s.b.r.c. wave may be considered as similar to a normal amplitude modulated wave, but with the difference that the ratio of sideband power to carrier power on peaks of modulation is greater than the usual 1 to 2 ratio, i.e., the carrier may be regarded as having been modulated to an extent greater than 100% without distortion of the waveform or splatter. It is more convenient to refer to "modulation index" to indicate this ratio, e.g. a modulation index of 1 is equivalent to 100% modulation.

D.s.b.r.c. with a small modulation index, say less than 2, is compatible with the standard a.m. receiver, that is, it may be received without noticeable distortion or special adjustment. This is due to the inherent selectivity of the receiver which provides a carrier exaltation effect.

Like the author of the previous article, I had wondered why this form of modulation had not been more widely used. Similarly, I also reached the conclusion that the use of too high a modulation index would not be popular, because of difficulty in receiving with standard a.m. receivers. But possibly there is more to it than this. The path of Amateur Radio is littered with control-grid, screen-grid, and the like, efficiency modulation systems, leaving the more expensive plate modulation as the only serious contender for the a.m. title. It could be, that a d.s.b.r.c. screen-modulated system suffered not so much from being d.s.b.r.c., as it did from being a screen-modulation system. It is true that O. Villard described a plate modulation system way back in "QST", June 1947, which actually used the d.s.b.r.c. principle, but apparently with a modulation index not much greater than 1, for the purpose of preventing splatter only.

EXPLANATION OF CIRCUIT

Fig. 1 is a general diagram of the d.s.b.r.c. plate modulation system. V1 is a normal final r.f. amplifier, plate modulated in the usual manner by audio amplifier V3, V4 through modulation transformer T. V2 is an additional tube, the output of which is in parallel to V1, and which is driven in push-pull to V1.

In operation, auxiliary tube V2 remains cut-off by the positive potential at its cathode in respect to the screen at ground potential, until a modulation index of 1 is reached. If a negative audio voltage is developed across the secondary of T greater than the positive high tension applied to V1, this tube is cut off abruptly, and, in the usual modulation system, will generate a waveform that results in the well known (unfortunately) splatter at the receiver. In the present system, at the point where V1 is cut off (modulation index = 1), auxiliary tube V2 commences to operate, since its cathode is now driven negative with respect to its screen (and anode). This tube will generate sideband power, which may be regarded as negative, in the sense that it fills in the negative peak, where the final r.f. tube V1 would normally be cut off. Fig. 2 illustrates this.

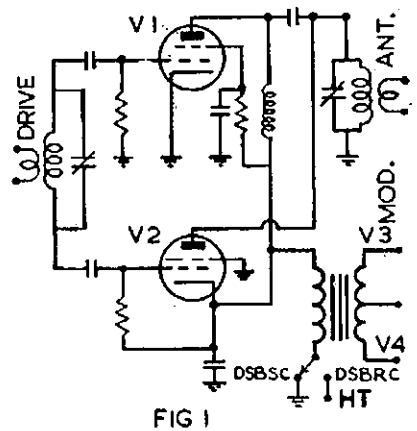


FIG 1

On the reverse cycle of modulation, V2 is cut off and tube V1 is driven into a positive peak. The modulation index attained can be calculated by observing the trapezoidal pattern on a c.r.o.

Assuming a correctly operated system producing a symmetrical waveform, the ratio of the positive peak deflection to the unmodulated carrier deflection equals modulation index plus one. A modulation index of 2 is shown in Fig. 2 (c).

It will be necessary to provide a modulator capable of supplying sufficient audio power for the desired modulation index, given a particular d.c. power input to the final r.f. amplifier. A 25 watt audio amplifier which is theoretically just capable of fully modulating a 50 watt final stage V1 on sine wave, will not trigger the auxiliary sideband generator V2.

In practice, with speech waveforms, an amplifier capable of producing 25 watts of sine wave audio power will easily overmodulate the 50 watt final stage on peaks. In this case, the negative peaks of the audio wave will trigger the sideband generator V2, so that the negative peaks, as well as the

higher positive peaks of sideband power, are generated, and no splatter occurs.

The required audio power for a given modulation index, compared with the audio power for a modulation index of 1, is proportional to the square of that index. For example, if the desired operating modulation index is 2, for a transmitter final with 50 watts d.c. input, then 100 watts of audio power is needed. In rough terms, this would provide a "talk power" equivalent to a 200 watt transmitter with normal plate modulation.

Before the sharp ones with "California kilowatt" ideas begin to rub their hands at the gleeful prospect of a legal effective kilowatt or two it must be pointed out that a rise will occur in the final plate current meter, with modulation peaks, for a modulation index greater than 1, due to the fact that we are now registering the r.m.s. increase in audio power applied to the final tubes, the positive peaks being rectified by V1 and the negative by V2. So if you are trembling on the brink of 150 watts to your final stage, then d.s.b.r.c. at that power input is not for you, if you are to abide by P.M.G. regulations. However, by dispensing with some of that wasteful carrier power, a worthwhile increase in phone effectiveness can be made. The question is, by how much should the carrier be reduced?

In normal plate modulation, the "talk power" is directly related to the audio modulating power and not to the carrier power. This is illustrated by the numerous and varied schemes to increase the average level of modulation, such as by clipping, limiting, or, in the case of the unprincipled ones, simply "winding up the wick." The effect of increasing the carrier power is simply to allow more sideband power to be generated. Thus, the carrier may be reduced to zero and the result is double sideband suppressed carrier having the same phone effectiveness (providing a proper carrier is inserted at the receiver).

Now P.M.G. regulations state that the power input, measured at the anode of the final stage, shall not exceed 150 watts. This is generally taken to be the maximum d.c. power input to the final for carrier generation. Since

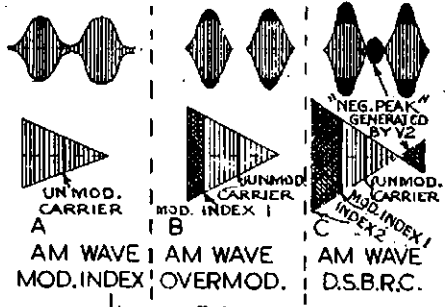


FIG. 2

* 50 Meehan Gardens, Narrabundah, Canberra, A.C.T.

amplitude plate modulation is permissible, it is obvious that the actual power that could be measured on peaks of modulation is 150 watts d.c. plus 75 watts audio, total of 225 watts.

It has already been mentioned that at 150 watts d.c. input a technical infringement could occur for a modulation index greater than 1. But it is also obvious that on reducing the carrier to zero an unlimited audio power would not be permitted. In this case, for plate modulation, it appears logical to set the limit at 225 watts, wherein the 150 watts of d.c. power generating the carrier is replaced by 150 watts of audio power generating sidebands of increased power. Any carrier power we desire to have should be subtracted from this audio power up to the point of a modulation index of 1. By compromising with the available sideband power to provide a reduced carrier, we can provide the very desirable feature of compatibility with normal a.m., but still meet the competition of d.s.b.s.c. or s.s.b. in terms of "talk power".

It appears that a modulation index of 3 will still provide clearly readable reception of d.s.b.s.c. as an a.m. signal, in a receiver having good selectivity. Here the audio power is nine times the audio power required for a modulation index of 1, so that the ratio of audio to carrier is 9 to 2, which allows a d.c. power input of 41 watts, modulated by an audio power of 184 watts. This packs the punch of a standard a.m. transmitter having about 360 watts input.

The modulation index to be used at any particular time can be easily ad-

justed for the conditions obtaining by operating the audio control of the modulator (assuming sufficient audio power is available). For example, on 40 metres, 25 watts d.c. input with modulation index 1 is often quite sufficient for that local or Interstate contact at readability 5. If a high degree of selectivity is available in the receiver at the other station, under adverse conditions for DX, or with QRM, the modulation index may be pushed up to 4 without objectionable distortion, since the high selectivity characteristic obtained by a crystal filter or sharp i.f. enables the carrier to be amplified to a greater extent than the sidebands, so that the detector "sees" an approximately normal a.m. signal. Tailoring of the audio response in the modulator audio amplifier to attenuate the lower audio frequencies will be beneficial since these frequencies, being closer to the carrier frequency, will not be so greatly attenuated in the i.f. stages of the receiver, and could cause low frequency distortion from an overmodulation effect at the detector.

As the modulation index is increased, so the audio from the receiver will "sound louder" for the strength of carrier received with a particular degree of selectivity. The signal will also "sound louder" than other a.m. signals, because, not only is the sideband content greater for a signal registering a similar S meter reading, but, for a signal with similar sideband power at the receiver, the a.v.c. will not be actuated to the same extent. The S meter may show an upwards kick with modulation peaks greater than a mod-

ulation index of 1, and this can be reduced by increasing the selectivity of the receiver.

POINTS TO BE CONSIDERED

These are:—

1. Since the cathode of the auxiliary tube V2 is above earth, a separate filament transformer winding with adequate insulation for the full modulated h.t., is required.
2. The tubes used in positions V1 and V2 should be of similar types, although not necessarily of the same ratings.

In the matter of tube ratings, it should be observed that standard plate modulated ratings are not applicable. For example, a tube in position V1 having maximum ratings of 60 watts d.c. input for Class C plate modulation service, which is say 90 watts total input on peaks of modulation at a modulation index of 1, is being operated over its ratings at a modulation index of 2 for the same d.c. input, when the total power to this tube may rise to 135 watts. Tube V2 should be capable of taking about half the additional power above that required for a modulation index of 1, which is the other 45 watts of the total of 180 watts in this example.

It should be safe enough in this case to use a tube or tubes rated for 90 watts d.c. input Class C plate modulated service for V1, and a tube rated for 30 watts of audio output power (or sideband power) Class B for V2.

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It may be noted at this point that a tube capable of carrying a 240 watt d.c. input under Class C plate modulated ratings would normally be required to enable this 120 watts of audio power to be fully converted to sideband power.

If d.s.b. suppressed carrier is to be used with full available audio power, then each tube in positions V1 and V2 should be rated to take half that audio power, and this may be roughly gauged as 1½ times the plate modulated Class C d.c. input rating.

3. Any h.t. applied to the anode of the auxiliary tube V2 is little more than a bias voltage and, if required, may be obtained from any convenient source having a suitable potential. Variation of this voltage does provide some control of the balancing of V2 with V1.

4. Correct operation of the circuit will produce a trapezoidal pattern on the c.r.o., connected as for normal plate modulation monitoring, similar to that shown in Fig. 2 (c).



FIG 3

Incorrect operation may result in one of the patterns shown in Figs. 3 (a) to 3 (d), identified as follows:

- (a) Tube V2 not operating, although adequate audio voltage available.
- (b) (i.) Tube V2 mismatched for impedance with V1, or (ii.) insufficient drive to V2.
- (c) Insufficient drive to Tube V1 or an inadequate power handling capability.
- (d) and (e) Tube V2 triggering too late and too early respectively, in the negative modulation cycle. An unlikely fault, but (e) could be caused by too much h.t. bias on the plate of V2 and is to be avoided because of prolific harmonic generation.

- 5. For like tubes in positions V1 and V2 the final stage is self-neutralised. For unlike tubes, the stage possibly could be neutralised by the addition of a small capacitor across V2 (assuming V1 to have the larger plate-to-grid capacity) in order to reduce carrier leak from the driven tube when operating d.s.b.s.c.

6. Unstable v.f.o.'s. are particularly undesirable for carrier exaltation or re-insertion work.

A PRACTICAL TRANSMITTER

A detailed circuit of a practical transmitter is shown in Fig. 4. It will be observed that existing transmitters using a pair of 807s or 6146s in the final could be modified to this system without much difficulty.

Suitable operating conditions for such a final are:—

- Carrier d.c. input—25 watts.
- Maximum modulation index—3.
- Audio power for mod. index of:—
 - 1—12½ watts.
 - 3—112½ watts.
- Input to V3 at mod. index of 3—25 watts d.c. plus 62½ watts of audio—87½ watts.
- Input to V4 at mod. index of 3—50 watts.

“Talk power” equivalent is a standard plate modulated transmitter with 225 watts d.c. input, fully modulated.

When operated on d.s.b.s.c. up to 180 watts of audio, modulating power may be used without exceeding tube ratings.

A transmitter using a pair of 807s for V3 and a 6DQ6A for V4, with higher carrier input and a smaller modulation index than for the above system, has been in use for several months.

Another suitable combination would appear to be an 813 for V3 and an 807 for V4. This would allow any carrier power from 0 to 150 watts with any modulation index desired, subject to regulations of course. The audio power requirement must not be overlooked here.

BANDSWITCH TABLE

(For Fig. 4)

Final Freq.	Switch Position	Freq. at L1	Freq. at L2	Freq. at L3
3.5 Mc.	3	3.5 Mc.	—	—
7 "	2	3.5 "	7 Mc.	—
14 "	1	3.5 "	7 "	14 Mc.
21 "	1	3.5 "	10.5 "	21 "
28 "	1	7 "	14 "	28 "

COIL DATA

(Approximate, since coil size required may vary with layout.)

- L1—40 turns 20g. enamel, 1" diam., close wound.
- L1a—5 turns 20g. enamel, wound at centre of L1.
- L2—22 turns 20g. enamel, 1" diam., 2" long.
- L3—9 turns 20g. enamel, ¾" diam., 1" long.
- L4—14 turns 16g. enamel, 1½" diam., 2" long.
- L4a—4 turns insulated, spaced ¾" from end of L4.
- L5—10 turns 14g. enamel, 1½" diam., 1½" long.
- L5a—1 turn well insulated from and wound at centre of L5.

Well, there it is. For the enthusiastic “sidebander” this system provides an easy intermediate step for contacts with the s.s.b. gang by way of double sideband suppressed carrier, and yet standard a.m. is still available in the same transmitter.

For the a.m. “diehards” the system provides an answer to s.s.b. by the “super-modulation” effect of double sideband reduced carrier, involving only a comparative minor modification to the existing transmitter, and the provision of adequate power.

If d.s.b.s.c. is of prime importance, it is suggested that like tubes be used in positions V3 and V4 for best carrier suppression. The screen resistance of V4 could be matched with V3 also.

Clippers and limiters may still be used in the present system to raise the average audio level, although as splatter suppressors they are now superfluous.

As with standard plate modulation, the circuit is not critical in operation

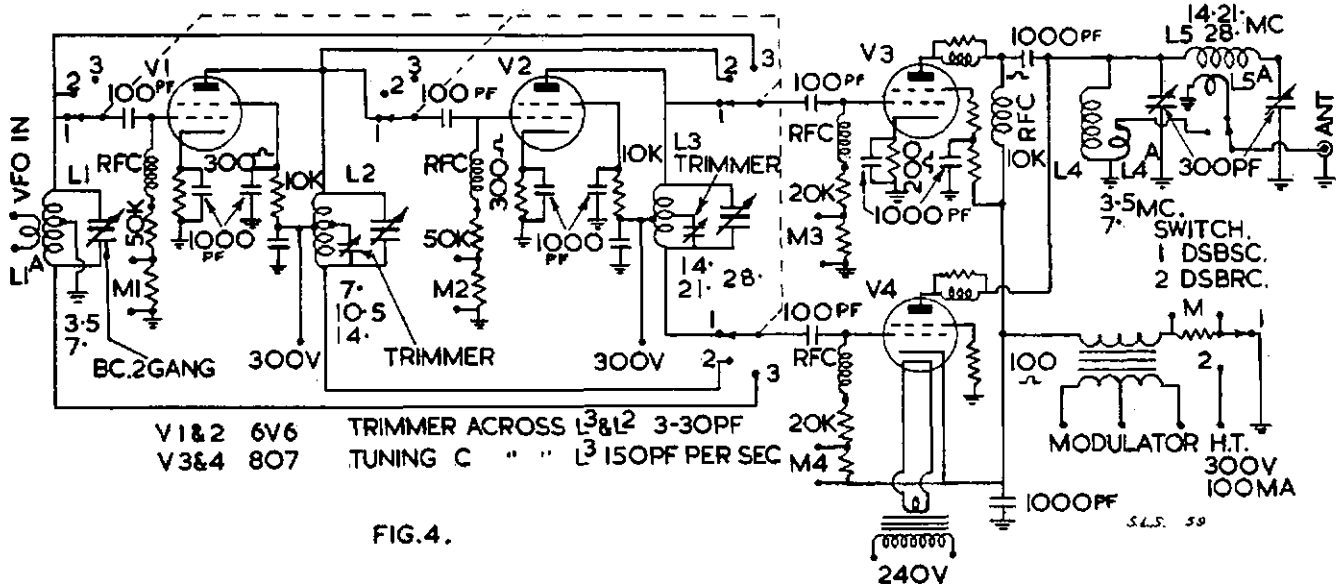


FIG. 4.

and no re-adjustment from band to band or with different loadings is required. "On the air" reports have been consistently satisfactory, both from VK and DX, using the one and only multi-band fixed antenna available. A large number of stations contacted volunteer reports on the loudness of the signal, when using d.s.b.r.c., in comparison with other signals on the band although the width of the signal is reported as being narrower.

The disadvantages appear to be:

(1) As with any plate modulation system the high audio power required is more expensive to generate.

(2) The signal may suffer more from selective fading distortion effects with the reduced carrier under some conditions.

If this becomes troublesome on some occasions, it is a simple matter to (a) use full carrier and reduce audio, or (b) cut the carrier and wind up audio, after advising receiving station to insert carrier.

(3) Unless a receiver having an optional sideband selectivity characteristic is used, d.s.b.s.c. is not as easily resolved as s.s.b. However, such receivers are becoming more common and in this case the optional choice of sidebands at the receiver is an advantage.

SYSTEM HAS OTHER POSSIBILITIES

It has occurred to me that the "Command" transmitter is very easily modified for single band (40 metre) operation, using this system, and an external modulator.

Also, by using Class B modulation it would be advantageous for mobile work, where there is an obvious need for increased phone efficiency without the complexity or critical adjustments of s.s.b. or efficiency modulation systems. In this case the low power carrier generally used for mobile transmitters can be plate modulated to the same extent as a much higher power carrier (in terms of modulating power), giving the same or nearly the same effectiveness, and yet the only increase in power requirement is that the Class B modulator be supplied on modulation peaks.

SUGGESTED STABLE OSCILLATOR

A "Command" transmitter (i.e. BC 457, etc.) employs a stable oscillator and may be modified to provide an excellent v.f.o. In addition to the usual modifications, a desirable feature would be the provision of internal doubling. This may be accomplished by taking the three following steps:

(i.) The output circuit may be tuned to double the oscillator frequency by shorting part of the output tank coil with a switch.

(ii.) It is a simple matter to attach a shaft to the padding condenser in the output tuning circuit to obtain variable tuning, in addition to the ganged variable tuning already provided.

The padding condenser is locked by a slotted tongue, secured by a screw to the condenser frame. If the screw is removed, the tongue may be bent outwardly into a U-shape, so that the slot in the tongue is opposite the hole in the chassis, originally provided for screwdriver adjustment of this condenser. A key may be filed on the end



The late Harry Hatton, VK2AGU, at the operating desk of his station.

of a short length (about $1\frac{1}{4}$ ") of brass shaft to fit the slot, the other end protruding through the hole to take a knob. Application of solder to the keyed joint will secure it.

(iii.) The oscillator coil assembly includes a coil feeding the 1625s in parallel from one tapping, a bias circuit on a second (centre) tapping, and a connection to a neutralising condenser (located on the sidewall opposite the output tuning condenser) from a third tapping.

The modification only requires that one 1625 be disconnected from the parallel grid connection, and the lead from the coil tapping be taken from the neutralising condenser and connected to the now vacant 1625 grid terminal, so that the 1625s are now driven in push-pull.

If one of the 1625 filaments is switched off (simultaneously with the breaking of the short across part of the output coil), the output stage will still be neutralised and will operate as an amplifier, the output coil being tuned to say 3.5 Mc. for maximum output.

On switching on the filament, shorting part of the output coil, and retuning output, the stage will operate as a push-pull doubler with the same efficiency as an amplifier.

It may be desirable to wind 3 or 4 turns of insulated wire around the base of the output coil for link coupling as the original variable link has a rather low impedance for coupling to a line.

REFERENCES

1. "The TA2 Special," by C. M. Sturkey, W7TNA, "A.R.," October 1958.
2. "D.S.B.R.C.," Parts I. and II., by George Grammer, "QST," May and June 1951.
3. "Amplitude Modulation Today," by K. W. Uhler, "Radiotronics," February 1959.

JAMBOREE-ON-THE-AIR

The first event of this kind was organised last year on a limited scale. It is expected that most Scout countries will take part this year. The Jamboree-on-the-Air will take place from midnight, Friday, October 23, to midnight, Sunday, October 25—G.M.T. Amateurs who have present or past association with the Boy Scout movement are invited to take part. They may join the event by simply calling "CQ Jamboree". Stations may operate on any Amateur wave band and with any equipment which is consistent with license requirements. Apart from individual participation by Scout Radio Amateurs, it is expected that radio stations will be set up in Scout group and district headquarters and on campsites. Radio Amateur clubs and individual Radio Amateurs interested in this event are invited to contact local Scout units to assist them either on a practical basis or by giving advice.

The Jamboree-on-the-Air is not a contest and there will be no prize for the operator making the most contacts. The event is being expressly organised to further the bonds of international friendship and brotherhood which unite the Scout movement.

Scout associations registered with the Boy Scouts International Bureau have been asked to appoint a national organiser for the Jamboree-on-the-Air and names and addresses can be obtained at the national headquarters.

The Boy Scouts International Bureau will operate from a station in Ottawa, Canada, and has acquired the special call sign VE3JAM.

CORRESPONDENCE

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

R.D. CONTEST

Editor "A.R.," Dear Sir,

I feel strongly that the time has come to reconsider the form in which the R.D. Contest is run. I feel that the phone and c.w. sections should be conducted on separate week-ends, and as a suggestion, the phone section should be on the week-end nearest 8th May (the date of the termination of the European section of the second world war), and the c.w. section on the week-end nearest the 15th August (the date on which the Asian section of that war ceased). I advance the following as some of the reasons supporting my proposal.

1. The number of stations with VK call signs is steadily increasing, and it is reasonable to anticipate that this increase will continue over the years.
2. The task for the Contest Committee would be very much simplified in respect of checking logs and calculating results, as only one type of contest would have to be considered at any one time, as the open section of the contest would be automatically eliminated.
3. Many stations now limit their activity to the phone section as, without doubt, numbers can be swapped very quickly on phone, whereas if sections on different week-ends they would enter each section wholeheartedly.
4. The time separation of the dates suggested above is great enough to maintain interest.
5. Overall activity on the bands would be increased, resulting in a much better case to support our retention of frequencies in the future.

—I. NICHOLS, VK7ZZ.

A TRANSISTORISED Q5-ER

HANS J. ALBRECHT

IN general, a Q5-er consists of an i.f. amplifier on a low frequency, a detector stage, and an audio amplifier. Such a unit has proved to be extremely useful in telecommunications, either in addition to or forming part of a multi-conversion communications receiver. Due to the relatively low frequencies involved it appears to be obvious that transistors, i.e. normal triode-junction transistors, can easily be employed in a circuit of this kind. Nevertheless, transistorised equipment should always be designed in accordance with the technical aspects of transistorisation, and the corresponding design considerations previously discussed have to be observed in this as well as in any other similar case. It is equally important to select transistor types and operating conditions in such a way that costs of construction and operation are kept at a minimum level.

The Q5er to be described in the following can be used in conjunction with any receiver having a signal output on 455 Kc. If it is to be combined with the i.f. amplifier described some time ago¹, in order to form a communications receiver together with an r.f. section, a number of points has to be considered. The overall i.f. amplification has to ensure an adequate power level in the demodulation section of the receiver. The output signal required at that point is given by the type of audio amplifier used and also by the d.c. signal required for a.v.c. action. The first condition can easily be satisfied as the amount of signal power necessary at the input of the first audio amplifier stage can be calculated without much difficulty. The other condition depends entirely on the kind of a.v.c. to be utilised in the receiver.

As has been indicated previously¹, the application of a.v.c. in transistorised equipment is to some extent somewhat more difficult than in valve receivers. A signal-controlled shift of the quiescent operating point cannot completely be regarded as sufficient due to the shape of normal transistor characteristics. A preferable method seems to be the introduction of circuit damping proportional to the signal level. Depending upon the component employed to achieve such a damping (normally a diode), the amount of d.c. signal may have to be accordingly large. This means, however, that the overall power amplification of the r.f. part and all i.f. stages must be adequate. It may be assumed that an amplification of 110 db satisfies these conditions with a good safety margin.

The i.f. part of the Q5-er comprises two stages, viz. one i.f.-mixer and one amplifier stage on 75 Kc., with an overall power gain of approximately 50 db. Considering the r.f. part as amplifying the incoming signal to the normal degree, the required i.f. amplification ahead of the Q5-er amounts to about 40 db. The i.f. amplifier previously published in this journal was designed to produce sufficient amplification for the demodulation stage to be coupled directly to its output. Thus, when a

Q5-er is connected to its output, the number of stages in the i.f. amplifier can be reduced from five to three, because the i.f. part of the Q5-er ensures additional amplification. In such a case it is recommended to eliminate the second (second stage on 2 Mc. with an OC170) and the fourth stage (first 455 Kc. stage with an OC45).

THE 75 Kc. I.F. STRIP

The complete diagram of the Q5-er being depicted in Fig. 1, the first stage contains an OC45 as frequency converter from 455 Kc. to 75 Kc. In other words, the output circuit of the preceding i.f. amplifier is identical with the input circuit for this mixer stage. The oscillator signal is injected by means of emitter coupling and the oscillator itself works on a frequency of 530 Kc. Again, the mixer stage uses normal resistance stabilisation and a stability factor of about two, which, in accordance with the author's previous publications on transistor-circuit stabilisation^{2,3} is a value of S acceptable for tuned stages. The oscillator, on the other hand, utilises capacitance stabilisation^{3,4}. The transistor employed in the oscillator is an OC73, although other types should work equally well after a careful selection.

The calculation of components for capacitance stabilisation of oscillators

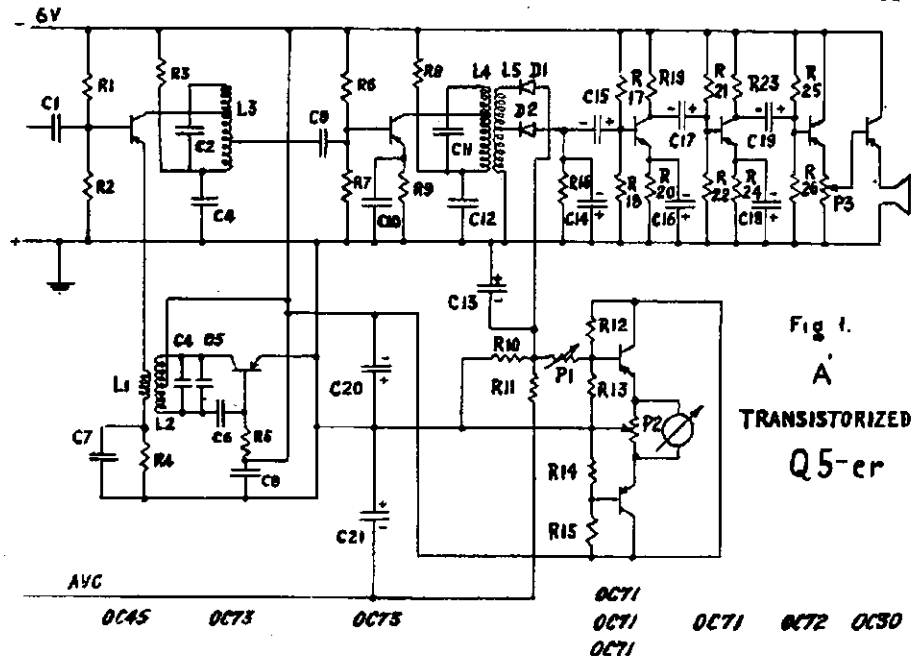
involves special considerations. The following formula, however, has been derived by the author for a simple and approximate determination of the value of N, i.e. the relative change of frequency per degree centigrade⁵.

$$N = \frac{\Delta f}{f} =$$

$$\frac{0.04 C_c^2 [I_{c0} (S - 1) - 0.06 I_c]}{\left\{ C_c + \frac{6.42 I_c}{a f_{c0}} \right\}^2 a f_{c0} C_c} \quad (1)$$

- where C_c = Coupling condenser at base (in F.).
 I_{c0} = Zero-input collector current with common base (in Amp.)
 I_c = Collector current at quiescent operating point (in Amp.)
 f_{c0} = Cut-off frequency (in cycles/sec.)
 C_t = Total circuit capacitance for parallel resonance (in F.)
 S = Static stability factor.
 a = Current amplification factor with common base.

It has to be emphasised that this formula gives results of approximate kind only. The constants have been calculated for a circuit of the type



- | | | |
|----------------------------|------------------------------------|--|
| R1—5,000 ohms. | R20—1,200 ohms. | C6—500 pF. |
| R2—2,000 ohms. | R21—20,000 ohms. | C9—0.5 μF. |
| R3, R6—2,000 ohms. | R22—6,800 ohms. | C13, C16—100 μF. |
| R4—1,500 ohms. | R24—470 ohms. | C14—10,000 pF. |
| R5, R10, R16—47,000 ohms. | R25—4,300 ohms. | C15—10 μF. |
| R7—1,700 ohms. | P1—10,000 ohms. | C17—50 pF. |
| R8—100 ohms. | P2—2,000 ohms. | C18—300 μF. |
| R9—800 ohms. | P3—1,000 ohms. | C19—80 μF. |
| R11—50 ohms. | C1—20,000 pF. | C20, C21—500 μF. |
| R12, R15—370,000 ohms. | C2, C11—5,000 pF. | L1—Number of turns according to coupling required. |
| R13, R14, R26—10,000 ohms. | C3, C7, C8, C10, C12—0.1 μF. | L2—0.3 mH. |
| R17—56,000 ohms. | C4—240 pF. (plus 80 TK. mica). | L3, L4—0.9 mH. |
| R18—15,000 ohms. | C5—40 pF. (minus 750 TK. ceramic). | L5—0.8 mH. (tap at one-third). |
| R19—4,700 ohms. | | |

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11 metre band 26.96 - 28.0 Mc. 20 metre band ... 14.0 - 14.6 Mc. 80 metre band ... 3.5 - 4.0 Mc.

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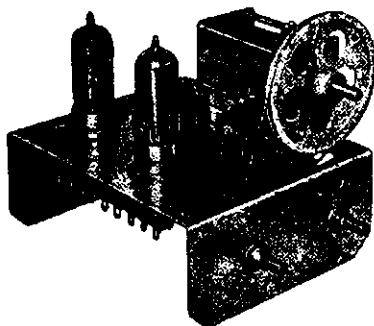
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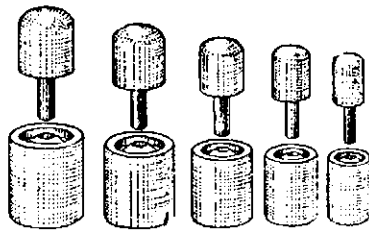
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shown for the oscillator being dealt with, namely Hartley-type with centre-tap, at a temperature of about 27°C. or about 80°F. The static stability factor is identical to the normal stability factor S. If resistance stabilisation is not utilised, its value is given by

$$S = \frac{1}{1-a} \dots \dots \dots (2)$$

Substituting values of circuit and transistor characteristics, eq. (1) yields $N = -0.00005$ for the oscillator under discussion.

For capacitance stabilisation, an overall temperature coefficient should be about -0.0002 per deg. centigrade. Therefore, the total circuit capacitance comprises a mica condenser of 240 pF. at a positive TK of 80 and a ceramic condenser of 40 pF. at a TK of -750 TK units.

The output circuit of the mixer is capacitively coupled to the base of an i.f. stage on 75 Kc., equipped with another OC73 in common-emitter connection. Due to the straightforward type of circuitry, a detailed discussion does not appear to be necessary.

DEMODULATION AND S METER

Referring to what has been said on a.v.c. requirements, two Germanium diodes of ordinary type serve as detector and a.v.c. diode, respectively. The coupling to the last i.f. resonant circuit being inductive by means of L5, the a.v.c. is taken from the full winding with R10 as load resistor. Use of only a part of this secondary winding is made for the detector diode D2 with R16 as load resistor.

A somewhat elaborate S meter circuit measures the d.c. signal across the load resistor of the a.v.c. diode. This stage actually comprises a transistorised d.c. amplifier⁶ of the type designed by the author for various professional applications. The two transistors OC71 form a bridge with the instrument as bridge indicator. The potentiometer P1 allows the sensitivity to be adjusted while P2 determines the zero point. The instrument is of normal type and should have a full-scale sensitivity of about one milliamp. at an internal resistance of approximately 1,000 ohms.

THE AUDIO AMPLIFIER

Although this audio amplifier represents a part of a Q5-er, it is designed as a perfect Hi-Fi circuit with an absolute minimum of distortion and a wide frequency response. The transformerless circuit is a new design using a particular type of output coupling in order to obtain a power output of 0.5 watt in Class A operation at the required d.c. stabilisation.

If reference is made to normal design procedure^{2,7}, the calculation of components for the two pre-amplifier stages can be regarded as normal and straightforward. The driver employs an OC72 in common-collector configuration and the output stage is equipped with an OC30 in the same configuration. The loudspeaker system (approx. 5 ohms) is directly connected in series with the emitter lead. A new advantage of this circuit is the combined control of audio volume and d.c. consumption by potentiometer P3. Varying its sliding contact towards ground reduces the audio signal component at the base of the OC30 as well as its d.c. operating potential,

thus automatically decreasing the collector current of the OC30 in the correct proportion. As this collector current represents by far the largest consumption in the whole receiver, this regulation is an important feature.

It should be noted that in this circuit the operation of the driver is critical up to a certain extent. The value of the current amplification in common-emitter connection, or the "beta", of the OC72 should be relatively high, i.e. of the order of 80. A compromise had to be adopted in the design of this stage, because the employment of another medium power transistor, such as the OC30, did not appear to be justified. Thus this OC72 operates under somewhat critical conditions with a value of S in the vicinity of 20, much higher than anything recommended previously³, even for audio stages. If operating conditions are subject to large variations of ambient temperature, the OC72 should be replaced by another type.

As far as construction is concerned, both OC30 and OC72 have to be mounted such that a maximum of heat is radiated. The OC30 requires a heat-sink of an area of about two square inches and a thickness of 0.1 inch, while the OC72 should be mounted by means of the heat-sink clips provided by the manufacturer.

Attention is drawn to the fact that it is hardly possible to achieve electric insulation between the OC30 collector and a heat-sink without undesirable thermic insulation. Thus the best method seems to be an insulation of the heat-sink, complete with OC30, from the chassis, unless this is identical to the negative battery connection.

GENERAL COMMENTS

At the conclusion of this description of the Q5-er it appears to be appropriate to express some remarks on the general behaviour of transistors. After little more than a decade, the transistor, and particularly the junction transistor, occupies an important place in electronic development. There is hardly any electronic device which cannot be "transistorised". With the steady progress in transistor production, new applications can be foreseen and new circuits will be developed. Neverthe-

less, there are a few shortcomings, and in design work as well as in the actual application it serves to be aware of them. For instance, it is essential to know to what degree the characteristics published for a certain transistor can be relied upon. Apart from the well known fact that temperature has a marked effect on the instantaneous operating conditions of a transistor, there may be a more or less wide spread of data for transistors of the same type. In such cases the characteristics published refer to average data.

Some manufacturers have almost overcome this obvious disadvantage by carefully selecting transistors before delivering them to the market. Groups of such selected transistors display relatively small spread of "beta", the current amplification factor in the common-emitter configuration, and are then indicated by a different number. For any serious design work this "beta" or the value of "alpha" (= current amplification factor for common-base connection) must be known. Both are related to one another by a constant relationship.

Referring to the circuits discussed and described in this series of publications on transistorised communication receivers, the average value given by the manufacturer has been used as basis of calculation, unless indicated otherwise. All circuit values have to be modified, if transistors of different characteristics are utilised. For this reason, it is definitely recommendable to check at least the d.c. characteristics of each transistor before mounting it.

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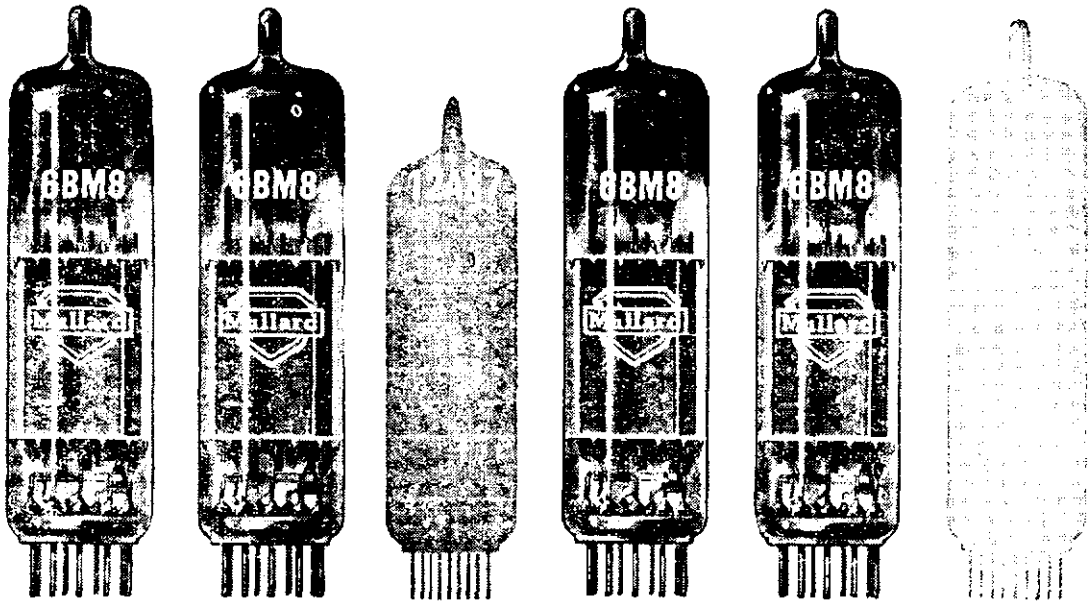
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TYPICAL OPERATING CONDITIONS

Single valve class 'A'

V_a	250	V
$V_{g2(b)}$	250	V
$\dagger R_{g2}$	2.2	k Ω
$I_{a(o)}$	28	mA
$I_{g2(o)}$	5.5	mA
$I_{g2(max. sig.)}$	10.5	mA
V_{g1}	-22.5	V
R_k	680	Ω
$V_{in(r.m.s.)}$	780	mV
($P_{out} = 50mW$)		
R_a	9.0	k Ω
$V_{in(r.m.s.)}$	9.5	V
P_{out}	3.4	W
D_{tot}	10	%

Two valves in class 'AB' push-pull

V_a	250	V
$V_{g2(b)}$	250	V
$\dagger\dagger R_{g2}$	2.7	k Ω
$I_{a(o)}$	2 x 21.5	mA
$I_{a(max. sig.)}$	2 x 27.5	mA
$I_{g2(o)}$	2 x 4.2	mA
$I_{g2(max. sig.)}$	2 x 9.2	mA
$\dagger\dagger\dagger R_k$	390	Ω
$V_{in(g1-g2)r.m.s.}$	38	V
R_{a-a}	10	k Ω
P_{out}	9.0	W
D_{tot}	5.0	%

\dagger Undecoupled screen-grid resistor.
 $\dagger\dagger$ Common screen-grid resistor undecoupled.
 $\dagger\dagger\dagger$ Common cathode bias resistor.

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SIMPLE SIDEBAND

PARTS ELEVEN AND TWELVE

I.F. FILTERS FOR S.S.B. RECEIVERS

In this country to obtain a suitable filter with sharp skirts and a flat top is not easy. Yet, the problem is not insurmountable. For those who have mechanical filters—and there are a few—the connections to the i.f. strip of the receiver described last month are as shown in Fig. 1.

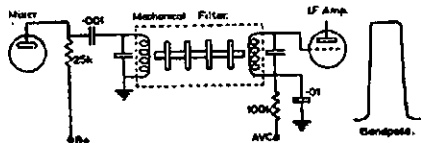


Fig. 1.—A mechanical filter may be used with the receiver described last month.

Fig. 2 shows the circuit of a filter using 455 Kc. i.f. transformers. I recently built one of these using four transformers back to back and coupled together with only 1 pF. of capacity. The coupling condensers are made from hook-up wire—two pieces twisted together, about two or three turns. A filter of this type, even at 455 Kc. will shave QRM right off a signal. Though it will not allow you to select sidebands one at a time without some interference from the unwanted, the unwanted will be well down. You may easily check this by getting an s.s.b. station to switch to the other sideband.

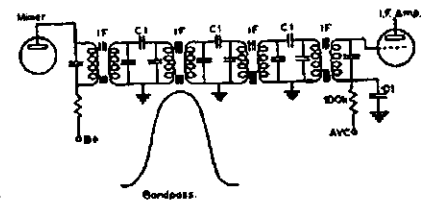


Fig. 2.—A block of flat Phillips' i.f. transformers connected back to back, coupled together by only a few pF. capacity, will make an excellent filter. C1 made by twisting together about two turns of hook-up wire.

With any selective i.f. system it is absolutely essential that you set the b.f.o. on the correct side of the signal. When copying s.s.b. the receiver is not tuned as for a.m. With a.m. you set the carrier in the centre; if you tune out to one side or the other the signal will become harsh and tippy. With s.s.b. you tune the receiver not to the centre but to one side. The received sideband is now slap in the centre of the passband, so therefore the carrier (the b.f.o.) must be to one side. If the signal won't tune with the b.f.o. on the one side set it to the other. The spot at which it should be set is quite critical if the filter is sharp.

Fig. 3 shows a crystal filter known as the half lattice. This filter is ideal for s.s.b. My own filter consists of three sections of half lattice and in addition it has two filters connected shunt-wise, i.e., across one of the i.f. transformers. These crystals help to suppress "pop-up" or sidelobes. It is

* Reprinted from "Break-In," March, April, '59.

THANKS TO ZL1AAX

This fine series of articles having now come to an end, the Publications Committee of the W.I.A. wish to express sincere thanks to Lester ZL1AAX for permission to reprint his "Simple Sideband" articles from the N.Z.A.R.T. journal "Break-In".

As Lester's articles have been reprinted in many countries, he has been receiving more than a fair share of letters. Therefore readers are requested not to write to Lester unless, in his own words, "they are desperate."

Having received many requests for the layout, etc., of his receiver (described last month), Lester forwarded a photograph of same for publication; this has been included in this issue.—Editor.

not my intention to spend much time on crystal filters because the subject has been well covered in the A.R.R.L. and "CQ" Sideband Manuals and builders are well advised to purchase these. A word of warning though: crystal filters are tedious to adjust if you would get the best out of them. To get sharp skirts, flat top, little pop-up and a good over-all performance requires perhaps hours of adjustment.

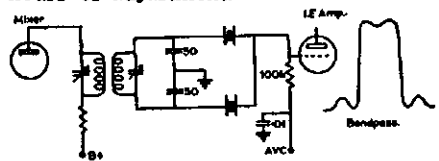


Fig. 3.—A half lattice crystal filter. Several sections may be cascaded to get even a better bandpass. It is recommended that you see the A.R.R.L. S.s.b. Manual for further information on filter design.

Points When Lining-Up

A few points, fruits from my own labours, I offer:

- (a) If the bandpass has a large dip in the centre, use less capacity and more inductance in the secondary side of the i.f. transformer.
- (b) If the bandpass has a rounded nose use more C and less L.
- (c) A wobulator used in conjunction with a scope will let you view the general shape of the bandpass but it is generally quite useless to determine skirt shape or pop-up. The scope reads voltage and of course the ratio of voltage, from the flat top of the band pass to the clefts at the bottom, is much too great to be readily presented. This could perhaps be done with a suitable a.v.c. system or compressor. However, it is simple enough to use the S meter in conjunction with a frequency meter and then use the wobulator to get a picture of the

LESTER EARNSHAW, ZL1AAX

- (d) A 6 db. dip in the centre is permissible and in fact will not be noticed.
- (e) Not all i.f. transformers lend themselves to filter work without their innards be altered. The Q type 162 with the two condensers connected across the secondary is excellent.

Another filter which will give excellent results can be made from 85 Kc. i.f. transformers. The mixer in the receiver described last month feeds into a second mixer which also has a suitable oscillator fed in to heterodyne the signal to 85 Kc. After passing through several stages of 85 Kc. i.f.'s the signal is then fed into a third mixer, mixed with the same local oscillator and fed back into the receiver. The block diagram of Fig. 4 will give you the idea. Though it may perhaps sound complicated, it really isn't and it is an excellent system and can be added to almost any receiver. The low frequency ARC5 (BC453) receiver may be used for this purpose and indeed Cliff ZL-2AHV used this system for some time. The system lends itself to sideband switching, by making the local oscillator operate either on 370 or 540 Kc., switching from one frequency to the other will switch sidebands.

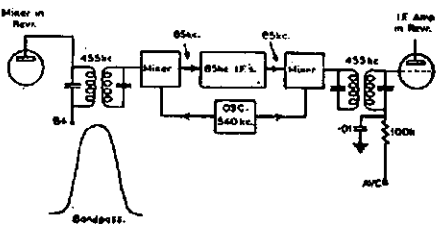


Fig. 4.—Popularly known as a Q5-er, the 455 Kc. i.f. is converted to 85 Kc., passed through a series of i.f.'s, and then converted back again to 455 Kc. Only one local oscillator is used. The 85 Kc. i.f.'s. may be taken from the BC453 receiver. The system may be used with any receiver with any i.f. frequency, merely by opening one lead.

It is pointed out that these filters have been primarily designed for s.s.b. or c.w. The i.f.'s. would need to be staggered for suitable a.m. reception unless the station is actually copied as an s.s.b. signal. However, so many a.m. stations suffer with f.m. and oscillator drift, especially on 80 metres, it is not usually possible to read them with the filter in circuit.

CRYSTAL CONTROLLED CONVERTER

Fig. 5 shows a crystal controlled converter for use with the receiver published last month. You will note that the converter is quite conventional in almost all respects. But for all that it is worthy of some comment in that its operation is the exact reverse of the heterodyne unit described last month. Whereas, in the heterodyne unit we converted an 80 metre signal to the requisite band by beating it against an overtone type local oscillator, in the

converter we convert the incoming signal to 80 metres. The local oscillator frequencies are the same in both cases and, in fact, you may if you wish use the one oscillator to do the two jobs.

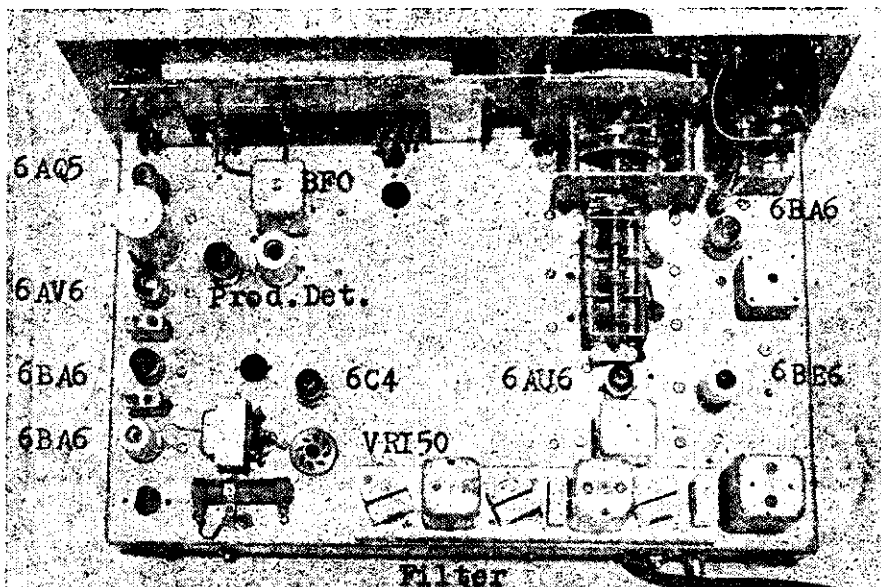
The remainder of the converter is straight forward and similar converters have appeared in journals from time to time. We will not discuss it further except to state that in my own opinion a crystal controlled converter is essential for easy 20, 15 and 10 metre s.s.b. reception.

A SUMMING UP

Perhaps I may have given the impression that in the generation of s.s.b. the two-coil method of obtaining the 90° r.f. phase shift is the only method and I have in fact been taken to task on this point. Far from the case; I have myself used seven different methods. If I gave the other impression it was inadvertent. To describe all the various methods there are would require a book of some considerable volume.

I described the most popular method in use in the U.S.A. The two-coil method is used by the world famous 10A and 20A exciters made by Central Electronics and is well proven. Secondly, most of the available literature from which an exciter may be built is based around the two-coil r.f. phase shifting device. The system lends itself for use with diode type balanced modulators which is a very distinct advantage, and yet, at the same time, it has quite high output. It is well to know though that it does have several disadvantages. The adjustment of the coils is somewhat tricky, especially for the newcomer, and the settings tend to drift with age. In addition, the coils are most particular about strays, where capacitive or inductive. Placing a bottom on the chassis may put you in double sideband in a big way; feedback to the coils from later stages may give all sorts of peculiar effects.

Other systems which may use resistance/capacitor networks (R/C), in-



Photograph of the receiver described in Part Ten of the Simple Sideband series published last issue. It is reproduced here after a large number of enquiries were received for layout drawings, etc. The i.f. filter is along the back of the chassis. I.f. amplifier at one end, r.f. and mixer other end. Space in the centre is for a converter. Various holes are the result of much experimentation in initial design. The VR tube was missing from the octal socket when photograph was taken.

ductance/capacitor (L/C), or combinations of R/C/L, may all give truly excellent performance and should not be overlooked. You may even use a quarter wave length of transmission line properly terminated in resistance to get the required shift through a quarter wave length at 80 metres may make a somewhat cumbersome transmitter to say the least! To reduce the bulk the transmission line may take the form of a terminated delay line and it is this system that is in use at station VK2ZF in Sydney.

About balanced modulators; though I may quite well be alone in my opin-

ion, I feel that multi element tubes in the phasing rigs are to be deplored. I have not yet heard, or have been able to construct, balanced modulators using multi element tubes that did not allow the persistent and annoying creepage of carrier. Diode balanced modulators, because they are low impedance, offer a good measure of stability. If you are embarrassed still by the creepage of carrier, this more than likely will be due to one of the following: Crystal oscillator operated at too high a voltage; unstable power supply; feedback from later stages; r.f. being allowed to escape past the balanced modulators from the crystal oscillator to the amplifier stages. I strongly recommend that the entire supply be regulated by two VR tubes in series and that the B+ be not more than 255 volts. I take it for granted that you will attend to the shielding.

Whether you use semi-conductor or vacuum tube diodes is a matter of personal choice. If you use germanium diodes use only good ones. Cheap diodes proved most unstable in various set-ups used at this station. In general, shilling for shilling, I think the best results are obtained from the tubes.

Concerning the audio equipment, builders of s.s.b. phasing exciters should restrict the bass notes. This is more important than may be realised. In many cases the flutter, growl or low whine on the speech may be attributed to an excess of bass. If the receiver has good selectivity or poor bass response this may not be noticed but it is well to remember that most Ham receivers in this country are poor receivers when measured by today's requirements. A station that has restricted speech, provided that it is not overdone, is a pleasure to tune. If the station has restricted the top it will be obvious that he will occupy less

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A.R.S.5. PHASING TYPE 9 Mc. S.S.B. EXCITER

This unit is intended to drive a Power Mixer (2E28, 6146, etc.). We recommend this type where it is desirable to provide power to a p.a. stage for use under normal Plate Modulated A.M. conditions as well as either S.S.B. or Phase Modulation. Valve Complement: Half 12AT7, xtal osc. (8.75 Mc.); half 12AT7, audio output; 12AT7, audio amp; 12AT7 phase splitter; two 6AL5s, balanced modulators; 6BA6, linear amp.

A.R.S.5A. Similar to A.R.S.5 except that a low level mixer stage is included, providing output on all bands when mixed with external mixing voltages. This unit is preferred where S.S.B. and P.M. are required only. Valve Complement: Same as A.R.S.5 except the 6BA6 linear stage is changed to a 6BE6 mixer.

A.R.S.59. 7 Mc. Mobile S.S.B. (Phasing Type). Frequency range: 7070-7150 Kc. xtal. Power output, 80 watts peak. Provision included for P.M. Valve Complement: Same as A.R.S.5 unit with the addition of an 807 "ZL" Linear and 6BJ5 clamper tube. This unit is primarily designed to fit neatly into the glove box of a Holden car. Available in either 6 or 12 volt. Power supplies and xtals not included.

PRICES: *A.R.S.5 £25/10/0; *A.R.S.5A £27/10/0; A.R.S.59 £72/10/0.
* Valves excluded.

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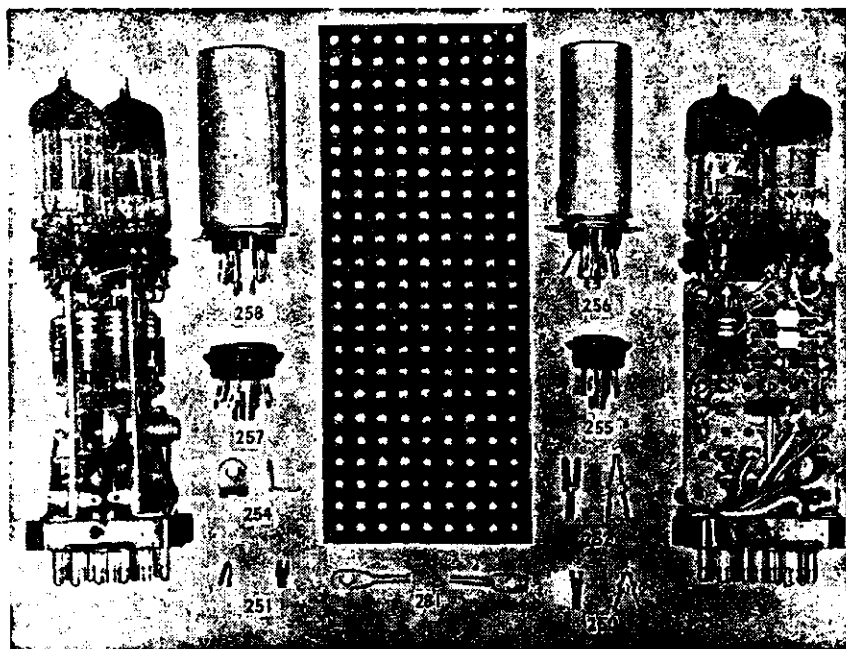
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JOHN MOYLE IN GENEVA

John Moyle, VK2JU, the W.I.A. official representative with the Australian Delegation to the Administrative Radio Conference of the International Telecommunications Union in Geneva, arrived in Switzerland on August 14 to attend the Conference.

The first week or two was one of feverish activity, organising introductory sessions to set up machinery, elect officers to the various working committees, of which there are eight in all, and generally set this vast meeting of Internationals in motion.

Of the eight Committees, No. 4 is the important one to the Amateur Service throughout the world, being the one dealing with frequency allocations. The chairman of this committee is Mr. Gunnar Pederson, from Denmark, with Mr. E. J. Stewart, leader of the Australian Delegation, and Mr. Oltuskiy Ozaki, from Cuba, as Vice-Chairmen.

Committee No. 1 is a Steering Committee concerned with the procedure of the Conference and chaired by Mr. Charles Acton from Canada; Committee No. 2 is a Credentials Committee whose work is self evident and its chairman is Dr. F. Nicobera from Italy; Committee No. 3 is a Finance Control Committee chaired by Mr. George Searle from New Zealand; Committee No. 5 is a committee dealing with frequency legislation and the international frequency list with Dr. M. Joachim from Czechoslovakia as chairman; Committee No. 6 is a Technical Committee chaired by Mr. M. N. Mirza from Pakistan; Committee No. 7 is an Operations Committee chaired by Mr. Enhle from the Netherlands; and finally, Committee No. 8 is a Drafting Committee concerned with the actual wording of conference documents with Mr. A. Henry from France as its chairman.

Committee No. 4, which interests us, commenced its work on the frequency table between 1 and 30 Mc., starting at the low end. As at the last report from John Moyle, the Committee had reached 2 Mc., so we can obtain from this some idea of the time consuming detail with which the Conference engrosses itself.

If a contentious point arises, it is handed over to a "working group" whose duties then are to discuss this particular point and present its report back to the Committee which might adopt it or reject it, when further discussions take place and it could go back to the "working group" for a second time. Finally, the work of all the Committees goes to the Plenary Session and ultimately to the Plenipotentiary Conference which signs the agreements which the communications services of the world abide by until the next Conference.

So far there has been quite unexpected support for an Amateur allocation between 1,600 and 2,000 Kc. and it would appear at this stage that we might expect a "top band" assignment some time next year. Australia has had an assignment in this band for many years but only for emergency purposes since Atlantic City in 1947. The Postmaster-General's Department has never

varied its intention to release this band to Amateurs for general usage as soon as Loran services moved out. Insofar as the major Commonwealth airports are concerned, Loran has not been in use for some time, hence at the time of this Conference it appears as though Loran is officially moving out. However, we shall probably hear more about this at a later date.

Before John Moyle left Australia it was evident from the American proposals that the U.S.A. would energetically oppose the introduction of further short-wave broadcasting channels and John Moyle reports that this position still pervades the general atmosphere at Geneva. However, the pressure for commercial frequency assignments in the 3.5 and 7 Mc. bands is, on a world-wide basis, extremely heavy and it is reported that we are unlikely to achieve success in retaining our present allocations if the Conference is prepared to accept changes.



John Moyle, VK2JU (at right), the W.I.A. official representative with the Australian Delegation, being farewelled by Neville Williams, VK2XV, at Kingsford Smith Airport, Sydney, on his departure to Geneva to attend the International Telecommunications Union Conference.

The Australian Delegation advised the W.I.A. before its departure that there was the possibility that the Conference may agree to making no changes at all in the frequency spectrum between 4 and 30 Mc., and John Moyle reports that there is still strong feeling in support of this, despite the fact that the Committee (No. 4) is going right through the frequency table during its discussions.

Apart from attending meetings with the Australian Delegation and the Frequency Allocations Committee, John Moyle has had informal meetings with Amateurs from other countries and discussed the general operation of the International Amateur Radio Union.

WANTED! WANTED!

Applications for post of Federal Secretary of the Wireless Institute of Australia. Applicants must be a member of the Victorian Division of the Institute and have ability to use typewriter. Re-organisation of Executive will limit duties to reasonable man-hours. Interested persons please ring the Federal President at MU 2426 without obligation.

FEDERAL EXECUTIVE.

We will give a general report on this aspect of Amateur affairs at a later date.

Generally speaking, the attendance of a member from the W.I.A. has been well received by other countries and has provided a liaison from Region III, which would never have otherwise been possible. We are looking forward to further reports, details of which we

hope to publish in "Amateur Radio," as the Conference works onwards from 2 Mc.

The following Amateurs are attending the I.T.U. Conference:

OE1AD, HB9IA (Act. Secretary-General of I.T.U.), VE2AC (leader of Canadian Delegation and I.T.U. Chairman), G6CL, HB8PJ, DL1XJ, DL3SO, HB9DB, HB9AS, W4CXA/W2BMX, OK1WI, SMSZD, G6NZ, ZL2ASK, VE2BE, VE3CDL (ex-FTEP), VE3JK, VE3ATU/G3GSK, W1BUD, HB9EL, OH2TK, VK2JU (W.I.A. Representative), W1LVQ, ZS8FE, ZL2VA, DL3DU, W2OGK, K4HXI, W3ASK, W4VVA, EI4N, VK3PI (L. Pearson), VK3KH (E. Anderson), W4GO, YV5DQ, AV5ACF, HB9SI, G6MA, LU9DL, LU6AY, LU3AF, ex-W9YUO, LUTBE, ZL2CC, HB9GA.

Amateurs meet at 6.15 p.m. every Monday at the Bagatelle Cafe, Place des 22, Cantons.

There are no Russian or East German Hams present.

FEDERAL EXECUTIVE, W.I.A.

R.S.G.B. 21/28 Mc. Telephony Contest November 21-22, 1959

Radio Amateurs throughout the world are again invited to take part in the popular R.S.G.B. 21/28 Mc. Telephony Contest to be held this year on November 21 and 22.

The rules are the same as in previous years, but the attention of overseas contestants is drawn to the additional bonus for working each additional ten G3 stations irrespective of band. The G3 series comprises the largest single group of U.K. stations. The scoring system is described in detail in Rule 8.

RULES

1. Duration: The Contest will start at 0700 GMT on Saturday, Nov. 21, and end at 1900 GMT on Sunday, Nov. 22, 1959.

2. Eligible Entrants: The Contest is open to licensed Amateurs in all parts of the world.

3. License Conditions: Entrants must operate in accordance with the terms of their licenses.

4. Contacts may be made using any telephony system for which the entrant is licensed. Contacts with unlicensed stations will not count for points. Proof of contact may be required. Only one contact on each band may be made with a specific station, whether fixed, portable, mobile or alternative address. Duplicate contacts must be logged and clearly marked as duplicate without claim for points. Cross-band contact may not be claimed.

5. Contest Exchanges: An exchange of RS reports followed by a three figure serial number starting with 001 for the first contact and increasing by one for each successive contact (for example, 58001, 56002, etc.) must be made before points can be claimed.

6. Operator: Only the entrant will be permitted to operate his station for the duration of the Contest.

7. Entries must (a) be clearly typed or written on one side only of foolscap paper; (b) be set out in the form shown in the example below; (c) be addressed to the Contests Committee, Radio Society of Great Britain, New Ruskin House, Little Russell St., London, W.C.1, England, the name of the contest being clearly shown at the top left hand corner of the envelope which must be postmarked not later than December 7, 1959.

8. Scoring: British Isles stations may not work each other for points. Overseas stations may only claim points for contacts with British Isles Stations (G, GB, GC, GD, GI, GM and GW). Scoring will be as follows:

Overseas Stations: Each completed contact with a British Isles Station will score five points. In addition, a bonus of 50 points may be claimed for the first contact with each British Isles country-numeral prefix, i.e. G2, G3, G4, G5, G6, G8, GB, GC2, GC3, GC4, GC5, GC8, GC8, GD2, GD3, GD4, GD5, GD6, GD8, GI3, GI3, GI4, GI5, GI6, GI8, GM2, GM3, GM4, GM5, GM6, GM8, GW2, GW3, GW4, GW5, GW6, GW8. A further 50 bonus points will be scored for each additional ten G3 stations worked irrespective of band.

9. Awards: Certificates will be awarded to the leading station in each overseas country. VE, VK, W/K, ZL and ZS call areas counting separately.

SAMPLE ENTRY

R.S.G.B. 21/28 Mc. Telephony Contest
Nov. 21-22, 1959. Claimed Score..... Call Sign.....

Name.....

Address.....

Transmitter..... Power Input..... Watts

Modulation system(s) used.....

Receiver..... Aerial(s).....

DECLARATION: I declare that this station was operated strictly in accordance with the rules and spirit of the Contest and I agree that the decision of the Council of the R.S.G.B. shall be final in all cases of dispute. I certify that the maximum watts input to the final stage of the transmitter was.....watts.

Date..... Signed.....

Failure to sign the declaration may involve disqualification of the entry.

Log sheets must be made out with eight columns in the following order: Date and time (GMT), Call sign of station worked, My re-

port on his signals and Serial No. Sent, His report on my signals and Serial No. Received, Band (Mc.), blank column, Bonus Points, and Points claimed. At the foot of page, Total (points claimed plus bonus points).

RECEIVING CONTEST, 1959

1. Eligible Entrants: The Contest is open to Short Wave Listeners throughout the world. All entrants agree to be bound by these rules. Only the entrant may operate his receiving station for the duration of the event. Holders of Amateur transmitting licenses are not eligible to take part.

2. Duration: Same as Rule 1 for Transmitters.

3. Entries: (a) To count for points, logs must show, in columns: (i) Date/Time GMT, (ii) Call sign of station heard, (iii) Report sent by Station heard, (iv) Call Sign of the Station being worked, (v) Band in Mc., (vi) Bonus Points claimed, (vii) Points Claimed. CQ or test calls will not count for points.

(b) Entries must be set out on one side only of foolscap or quarto paper, entries must be postmarked not later than December 7, 1959.

and must be addressed to the Contests Committee, Radio Society of Great Britain, New Ruskin House, Little Russell St., London, W.C.1, England.

(c) All entries must contain the following declaration: I declare that this receiving station was operated strictly in accordance with the rules and spirit of the Contest and I agree that the decision of the Council of the R.S.G.B. shall be final in all cases of dispute. I do not hold an Amateur transmitting license.

Date..... Signed.....

4. Scoring: Overseas entrants may only log British Isles stations for points. A station may be logged only once for the purposes of scoring.

Overseas Entrants: Each complete log entry relating to a British Isles station heard will score 5 points. In addition a bonus of 20 points may be claimed for the first station heard in each British Isles country-numeral prefix, i.e. G2, G3, GM4, etc., and a further bonus of 50 points will be scored for each additional ten G3 stations logged irrespective of band.

5. Awards: Certificates of merit will be awarded to the leading entrant in each country.


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DX

John C. Pinnell, VK2ZR
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Earlwood, N.S.W.
Phone: UW 4248.

I have done my best to put these notes together this month but my efforts were a little cramped due to my annual holidays taking up the first week of the month. We did about 1,500 miles up around the north-west of N.S.W. Long sky-wires and a familiar looking beam attracted me to a house on the wayside which turned out to be VK2AKC, and the place Tomingley. It was Sunday and the W.I.A. broadcasts were coming through very well. What a location for the DXer, no man-made QRM, just clear loud signals.

Most of the bands had their moments during the month but the 20 mx band was really good. Europe could be worked for several hours each day; from 0500 to 0800z and again from 1930 to 2200z. Conditions on 15 mx are showing marked signs of improvement.

NEWS AND NOTES

A group of Amateurs are with an aerial survey company in Afghanistan. Most of them are on high mountains ranging from 10,000 to 16,000 feet high. The locations have winds up to 100 miles per hour, and 60 m.p.h. is quite common for days on end; with freezing temperatures mostly at night. They expect to be there until the end of October.

YAI1W is using both phone and c.w. on 10, 15 and 20 mx. His home call is K6IWG, and was formerly W7ORZ, plus HC2IW, HC6IW, and K6IWG/HC last year. Operating times: 0100 to 0300z and 1200z to 2400z.

YA1PB operates on 20 mx phone only from 1200z to 1400z. YA1TD is on 10 and 20 mx phone.

QSL QTH is YA1PB, via KH6OR or ZS6BW; YA1TD, via 1837 Lucas St., San Fernando, California. YA1IW, via W6DXI.

Some of the group are making an effort to go on a DX-pedition into Bhutan (AC3), Sikkim (AC3), and perhaps AC4 or JTI if they can get permission to operate and arrange for suitable transmitting gear.

Mac PY7SC is stationed on Fernando de Noronha. He will be there for several weeks and perhaps longer. Operation is generally on week-ends and only on 14 Mc., around 14300 Kc. s.s.b.

OH8PB/O on a.m. phone and OH8TH on c.w., operated from Aaland Island for about a week during the last three days of July and the first three days of August.

Dick KV4AA says as soon as the Yasme Foundation charter is signed by the directors, and Danny Well can raise a little more money, Danny will be back on the sea ways again. His first stop will probably be Galapagos Islands, HC8.

IGN is very active from Italian Somaliland on 14 Mc. s.s.b. He is usually on 14305 Kc.

Brunet: Bruce VSSBY closed down his station and is returning to New Zealand. VK QSLs should go via ZL3AB.

The following stations are on s.s.b.: HS1B, VU2RX, and VU2RM.

ZL4JA, still in New Zealand after a tour of duty in Brunel as VSSJA, is now ready for his new assignment in Iraq. He is going to try for an Amateur license arrangement, which may mean the clearing of the State Department ban on this rare country (WIICP).

Ramon EA8CF, of the Canary Islands, has QRT for about a year while he returns to Spain. He expects to return to the Canary Islands in June 1960 (W3QIB).

The only ZC4 station in Cyprus presently active on s.s.b. is ZC4BE, ex-G3BLE. Jack is active on about 14300 Kc. around 1800z most days.

9N1AC, from Nepal, is on occasionally around 1500z on about 14300 Kc. He is running about 800 watts on s.s.b. It's no use calling him on c.w. as it is understood he does not know the code. 0N1AA is off the

* Call signs and prefixes worked.
z zero time—GMT.

air because of power transformer trouble. WICJ/3 and several others will be active from there later this year on both 15 and 20 mx.

From VK3AOM: HK7LX told me that he and HK4AE would soon be going on a DX-pedition to Malpelo Island, off the coast of Colombia. He said that there had never previously been any station operating from there.

From VK2JJ: Received from the Central Radio Club, Moscow, regarding the power, frequency, etc., used by Amateurs in the U.S.S.R. Their frequency allocations: 1.715-1.8 Mc., 3.5-3.6 Mc.; 7.0-7.1 Mc.; 14-14.4 Mc.; 21-21.45 Mc.; 27-28 Mc.; 38-40 Mc.; 144-146 Mc.; 420-425 Mc.; 1470-1520 Mc., 5650-5850 Mc. Their frequency allocations (especially 14 Mc) might be of interest now that we stand to lose more of the 20 mx band.

ACTIVITIES

1 Mc. C.w.—2QL: FB8CJ, L2022: DU6IV, DUTSV, F9MS, HC4IE, JA1DN, K2QEO/MM, KF4AOO, SP6AAX, SP8HU, UA4HN, UB5FJ, UB5UW, VE7IO, VP8EU/P, SP9GJ, BERS195: DM3XHO, GB2AC, F9RS, G3IMV, HB9HY, HA5KFT, I1AMR, LA3XG, JAT1L, LZ1KSF, OH7NF, SM3BTU, SP3OR, UA4EK, UB6WD, UC2KAR, UQ2KAA, VS1EA, Y07DZ, YU3UQ.

7 Mc. Phone.—2AQJ: WA6BLJ/4* (s.s.b.). 3AOM: VR2DK*. L2022: VR2DI. Mac Hilliard: VR2BC.

14 Mc. C.w.—2QL: VQ6LQ*, VP8DM*, VQ-9AIW*, FG7YK*, EA8IA*, EA8CF*, GC2FMV*, KG1FN*, HH2LD*, HH2JV*, ZS7M*, 8A2AE*, 9M2GE*, EA8CP, UG6AB, Z8SIF, ZP5LS, 7GIA, 2ZR: E1BAG*, DL7JT*, R8SH*, G3GQS*, HA-5KFR*, HC2IU*, HB9UE*, IFT*, LA6U*, LU-3ZX*, OESR1*, OH1SN*, OK2KGE*, ON4ID*, OZ1QM*, PA0VB*, SM5AJU*, SP8DT*, UA-3UQ*, UBSCW*, YU3DZ/P*, 4DO: W/Ks*, KH6s*, EA8BF*, FB8ZJ*, F3NB*, HASKFR*, HH2LD*, I1II*, LZ1KBA*, UA0KFG*, UAOKIA*, EA5BA, EA8CG, FB8BZ, HC4IU, HC4IE, LU-4DGM, SP8HU, UA3GC, VQ6LQ, ZP6LS, BERS-195: CE8AA, CX5CO, CR8AH, EA8CG, FK8AI, F0SAC, GB2AC, HC2IU, HH2GR, HPIAO, KC-408K, KH6BDV/KJ6, KZ5RQ, K6QPQ/KW6, OH0NC, FX1PF, FY4CB, UD8AM, VE8DX, VK-9RH, VK0CC, VR2DR, XE1A1, YJ1DL, YV5AO, ZC4CS, ZK1AK, LA4YF/MM, JAT7KH/MM, K5ITN/M, K8LAU/MM, W4Y/MM, 8J1AA, L2022: HC4IE, HC4IU, EA8CG, VR1B, 457FJ.

14 Mc. Phone.—VK2AQJ s.s.b.: G2MF*, G2FN*, G3HJK*, G3FIH*, G3MY*, G5RV*, G5US*, GW-3EHN*, GW3LLU*, JA3MD*, I1RM*, OA2PK*, OA4IZ*, KA7OT*, KR6MW*, F8PI*, HB9SI*, HB9PQ/MM* (near Hawaii), XE1CP*, VE8OL* (Baffin Island), YV5AY*, PA8RE*. 3AOM: CT-1GE*, G6XN*, HK7LX*, ON4IS*, VE8DDI*, AXS*, IP*, CHT*, VE7TR*, VR2DP*, VR2DK*. 4DO: W/Ks*, KH6s*, YV4CI*, YV5AY*, G2PU, VES, VP2DA, BERS195: ZK2AB, YV4CI, 9M-2DQ, FK8AU, L2022: VP9G, FK8AU, L3065: ZLS, G2AMG, VR2DA, VK9s, Wc. Mac Hilliard DL4RY, ZS8OY, 9M2DQ.

21 Mc. C.w.—2QL: VQ3CF*, VQ2JM*, 5A5TO*, CN8IT, CT2AL. 2ZR: CTIUD*, DL1KK*, G3LZE*, IJZL*, KP4AZ*, OA3D*, UA4HC*, UA0GF*, VE7FC*, VQ3GC*, 457FJ*. 4DO: KH6s*, W/Ks*, XE1A1*, VES, DUTSV, FW-8AW, L2022: CTI1D, EA5BA, FASBG, FASCR, IT1AL.

21 Mc. Phone.—4DO: W/Ks*, KH6s*, VK9RH, VP1EE, VR4BW, L2022: PJ1NY, MP4QAO, VQ-4DT, VR2CB, YV5HT, Mac Hilliard: Gs 2PL, SB, 3L1L, JAF, HT, 5JN, BS, 6XN, 8TY, JM, OA4GH, CO2US, YV3CM, F8SE, FASCF, CN-8EH, I1SM, UA, GX, DL4MW, IQ, FB8XX, OD5CI.

28 Mc. C.w.—2QL: JAs*, Ws.

29 Mc. Phone.—Mac Hilliard: JAs, ZE1JJ, ZS1AX.

QTH's YOU MAY NEED

- XE1A1A—Ruben, P.O. Box 63, D.F., Mexico City, Mexico. (BERS195)
- VU2CB—Police Radio Office, Madras, Zone 4, India.
- HC2IU—Helnz, P.O. Box 5200, Guayaquil, Ecuador.
- YV6AY—P.O. Box 2285, Caracas, Venezuela. (VK2AQJ)
- OA4IZ—P.O. Box 538, Lima, Peru.
- OA2P—P.O. Box 235, Trujillo City, Peru.
- VE8OL—Cape Farrow, Baffin Island; Postal C/o, F.E.C., Montreal Airport, Quebec, Canada.
- KG1FN—Via W1JLD.
- 3A2AE—Via R.S.G.B.
- CN8FJ—Box 2060, Casablanca, Morocco.
- CP1AM—Maj. E. M. Downing, 304 Georgena Curve, Montgomery 5, Alabama, U.S.A.

- EL4D, EL4F, EL4J—Letourneau-Liberia, Roberts Field, Liberia.
- HK3QV—P.O. Box 5854, Bogota, Colombia.
- V86JA—To ZL4JA.
- VP9ET—U.S. Naval Facility, Navy 138, F.P.O., New York, N.Y.
- VQ8AV—Vacoas, Mauritius.

QSLs RECEIVED

VK2AQJ: XE1CP, TG9PS, VK2QL: 9M2GE, CE0ZA, ZD2KCH, ZJ0DA, UN1AE, UL7HB, DL7AH/LX, HK4JC, VSSAD, VK2ZR: F8BEX, FQ8HA, VQ3HD, VQ5EK, UP2KBC, UP2NM, LUSABL, BERS195: FM7WU, KH6BDV/KJ6, LU2HBM, PY7JL, UA1OZ, UB3WK, UC2BG, UD6AM, UQ2KBR, VE8MX, VQ2EW, XZ2GM, ZDGP, ZS6AUL, 4X4LH, VP8EP, VK0DA, L3065: HL9KS.

My thanks go to Don Chesser, W4KYX, for the use of his DX Magazine via VK2QL. This magazine is published almost weekly; not less than 40 editions a year. It covers all activities in the DX world. Bud 2AQJ, who says he always reads the DX page with great interest and so figured it was high time he helped out a little by sending along some information. His list of s.s.b. activities should interest all those using this mode of operation. Times of operation mainly between 0500 and 0750z, a bit early for most of us. 2QL as usual seems to get among the "good ones" and on low power, too; about 40 watts. George 3AOM thanks for the list and kind thoughts. 4DO, have a good trip to Brisbane Hal, your notes appreciated. BERS195, Eric says he is on temporary transfer to Wynyard, Tasmania, for 3 or 4 weeks so won't be logging much for the month. However, he had a great haul for August and says a spell from it won't be out of place. Don L2022 has been concentrating on 40 mx with good success. He did a good job on three bands in the R.D. Contest. Sorry if I missed you Don on the dates given but was away on holidays myself at those times. Ian L3065 is very pleased with a confirmation from HL9KS, not bad; I did work a few HLs but all were phonies until I got HL9KS. Welcome to the page Mac Hilliard, you are doing a good job with the 888 rx and 8GU Tri-bander. Will be with you again next month.

BRITISH TWO-CALL CLUB

The British Two-Call Club was formed early in 1950, to cater for the interests of the ex-overseas and Forces Amateur Radio operators out of a suggestion made by G2DHV to G2MI.

It is a club run on similar lines to the Tops C.W. Club, with membership scattered over the British Empire although most of its members live in the United Kingdom; hence it is a club but not in the normal sense of having regular local meetings, but gathers its information on members' activities through the Hon. Gen. Secretary and is passed on to the members through the club's quarterly newsletter "QTC". To which means the annual subscription is kept low, namely 2/6 per year; roughly being divided in half with the cost of running the club in such matters as stationery, certificates, postage, etc.

The club is non political, non commercial and is run by the Hon. Gen. Secretary on members' suggestions with their majority vote on all essential matters arising. The club elects a President and Vice-President annually, who are also available for advice; the club also organises Forces and ex-Service sections' activities.

Many well known overseas Amateur call signs are among the membership, which at present stands at nearly 200, and enables track of them to be kept as well as ex-Forces personnel, in matters of QTH and so the overseas friendships made to be continued as well as new ones made.

Various certificates are issued to members for contacting members call signs, outstanding achievements in contests and services rendered to the club. We are applying for affiliation to certain Amateur Radio organisations in the members' interests; at present we are affiliated to the R.S.G.B. and R.A.F.A.R.S.

As in the Tops C.W. Club, First Class Operators' Club, and similar organisations, the upholding of the tradition "Amateur Radio Spirit" is well marked.

Membership is open to all British or Commonwealth subjects who have or held TWO Amateur Radio call signs, one of which must be held overseas. Application forms can be had on request to G2DHV, G. V. Haylock, 167 Engleheart Road, Catford, London, S.E.6, U.K., who will also be pleased to meet any members personally for rag chews, etc.

VHF

Frank P. O'Dwyer, VK3OF
190 Thomas Street,
Hampton, Vic.

50 Mc. BAND

Main DX to the gang north of the VK2/VK4 border with the JAs fairly consistent. 4LK has two sessions a day but is dwelling on Es to provide the kick in life—a chance to hear an Aussie voice on the band and the opportunity for a local chat. Vern missed out on the couple of openings south to VK3 and VK5, but should catch the gang down there soon. HLKA and a few strange carriers kept the boys other than VK4 on the alert, but there were no rewards for most. VK6 had quite a good nibble twice but were sorry to miss the DU who was on the band. Here the scribes tell their stories.

Victoria: 50 Mc. activity for August was fair considering the time of the year. On 10th, 3AZV and 3CI heard some JAs. Monday 17th from 2000, the Melbourne stations were among the VK4s during quite an excellent opening. On the 20th between 1900 and 2000, JA sibs were again heard but none were worked. Sunday 23rd, solar noise was high all day and so were expectations. At 2130 the VK4s were in again, both southern and northern areas were worked at good strengths.

Strong winds during the month played havoc with quite a few of the beams, but in most cases the damage has been repaired. Quite a few were out mobile during the month. New stations out were 3ZBF and 3ZBG. 3ZDU still popping up. 3ZEW heard portable, believed to be mobile as well. New calls heard were 3VT and 3ZDX. 3ZDG has been radiating a sideband signal and has had two ways with 3SF and 3ALH. 3ALZ soon to enter the competition. 3ZDK back on the band after rebuilding. 3ZGW has returned to the band during the hours the one-eyed monster sleeps. Still trying to tame a modified Command v.f.o.—3ZGF.

Queensland: We've had JAs most nights. T.v.l. making inroads on the Brisbane gang. One advantage of living in the bush. Welcome to Les 4EH, hope to see you on six soon and have words again. Interested to learn about d.s.b. rigs under way in other Divisions. Look for me on either 50.4 or 51.6 d.s.b. Bill 4WD having t.v. troubles, 10 feet to the nearest t.v. antenna. Well, you can check for t.v.l. by looking in your lounge room, Bill.

With August came JAs, VK2, 3 and 5. Russ 9XK was worked by Mick 4ZAA, Dave 4ZAX and of course by Max 4HD. Aug. 11, all JA districts except 8 were audible from 1822 to 1922 on F2 type and 2200 to 2300 on TE. Aug. 12, JA 1, 4, 7, 9 and 0 on F2 from 1840, maybe earlier, till 1945 and Okito JA410 from 1946 till the band closed at 1958 on TE. Seems I made a mistake in the July notes (Aug. "A.R."). VK3AHJ was the mobile station worked by 4ZAA, not 3ZAI as stated, sorry I've got to immobilise you, John.

Had an Es opening to VK3, 5 and 7 on 17th for about 2½ hours, 18th again JA districts 1, 2, 3, 6 and 9 from 1800 to 1921 on F2. 20th gave us Es to VK3 and 5 from 1845 to 2115. 21st, JA again from 1745 to 1955. JA410 most heard station until the band went out in TE. Brief break from 1930 till 1950 on the 22nd, F2 type, 23rd, JA 1, 2, 3, 7, and 0 on F2 1740 to 1958, then switched to Es for VK3 and 5 from 2050 till 2145 when I QRT. Believe John 4PU got a "basin full" with Col 5RO, Herb 3NN, Roy 3ZFM and of course Hugh 5BE. How many more, John?

Max 4HD still battling t.v.l. finds open-wire feed line less troublesome than co-ax. Max has worked JAI/AEG/JA0 96 times on 50 Mc. to date and has also worked Les 4XJ (Bundaberg) approx. 140 miles direct from Buderin well over 100 times. Les has been heard at 4PU and 4ZBI's at good copy often of late, but not worked.

23th, JA410 was heard calling VK4RW on F2. 4ZBI worked a few new JAs during the opening on the 26th. They were also audible on TE on 30th and Dane 4ZAX did most of the business. The Brisbane gang were all very quiet, all looking at t.v. or else hunting up t.v. bugs. Fortunately none up here in the bush at 4ZBI's. One benefit of living in remote areas.—4ZBI.

South Australia: Activity on 50 Mc. has decreased a little in the past month, though we still get our occasional breakthrough to VK4, openings were 17th, 20th and 23rd. Those heard at this location were 4ZAA, 4ZBZ, 4ZAZ, 4PU, 4NG, 4ZAX and Bill 4WD. There were others, but they were well down in the noise and power leaks.

Heard Neil 5ZDH working them. Neil's home building effort has come to a full stop lately, apparently been spending too much on radio, Neil; a good hobby fellow, but it'll take all the money for those bricks. Mick 5ZDR heard at various times testing on the band. Mick believes in getting the most out of his gear and with his increase in signal strength at this location it appears he is succeeding. Brian 5TN is breaking away from his 10 watts and should be on the air by now with 30 watts to the 52BE.

Started calling CQ DX on 50.225 Mc. the other night and who should pop up and say he couldn't hear anything but Ron 5MK. Well I might have guessed that Ron would be around, I think we should give Ron a medal for the most patient listener. John 5ZEA is back from his VK6 visit and is all set for the forthcoming season of v.h.f. activity in his capacity of secretary of that group. By the time these notes go to print the v.h.f. section's programme for the summer season will be organised and the members of this group are promised some interesting 1 and 6 mx fox hunts, picnics and mystery outings, plus some very good technical lectures.

Some very interesting news to hand is that of Peter 5ZDP's effort at voice controlled carrier on 50 Mc. My informant tells me that it works very well and it would appear that Peter is getting all set for the JAs when they come in; nice going fellow, hope you start the rest of the boys thinking about voice control. I understand that voice controlled carrier is being used a lot by the 288 Mc. boys. It should be particularly effective on this band as duplex with mod./osc. takes up too much of the 8 Mc. bandwidth.—5ZAW.

Western Australia: The end of August and the beginning of September saw the re-arrival of JA DX on 50 Mc. after two very quiet months in June and July. Sat., Aug. 22 a 2½ hour opening on F2 occurred; Friday 28th saw a 3½ hour TE opening. DUIGF was on the band at the time but was inaudible in VK6. Just what is that "raw" carrier on 49.75 Mc.? There have been suggestions that it could be Russian t.v. A survey made here unearthed the facts that Russian channel 1 is centered on 49.75 and that a station in Novosibirsk which is n.n.w. of Perth. It certainly sounds somewhat like t.v., but if it is t.v., where is the sound channel? If it is not t.v., why the wide bandwidth of several megs?

A last independent effort has been made from VK8 to keep 50 Mc. This State was the first to protest against the proposed change back in 1955 when a group of v.h.f. enthusiasts got together to register a protest. The final shots were accompanied by tape recording of sibs heard on 6 during the I.G.Y. It certainly made interesting listening.

The consistency of JA openings and their lack of correlation to 28 Mc. openings or conformity to m.u.f. predictions makes one think. In Perth frequently HLKA on 49.8 is loud and clear. HYKA on 48.3 Mc. is inaudible, yet JAs are heard on 28 Mc. and 50 Mc.—6BE.

Northern Territory: There was nothing of DX interest happened in Darwin during Aug. Still having trouble as to where my operating will take place from. At present I have a temporary location about 10 miles from the main camp area but this is not very favourable at all. The rig is on the air although the converter needs a little work on it. The antenna at present is a folded dipole about 20 ft. high amongst many other sky wires of assorted shapes and sizes. Hear from 21 Mc. that 9M2DQ is on the lookout for any 50 Mc. signals but seems to have his doubts of receiving any VK3, 2 signals or even VK4s. Ian 3ALZ should be more conversant on that subject as he does contact Jim quite often. One evening did hear a JA on 28 Mc. so fired up on 50 Mc. for no results. Some of my gear has still not arrived from Townsville. Am pushing things alone and should get some results in the near future. A pity we cannot keep 8 mx as the other countries have.—5ZDW.

144 Mc. BAND

This band is growing up. After being a social band for many a long day, a Cinderella from the DX point of view, organisation is coming into the long haul picture, a determined attempt is being made to swap signals between VK3 and VK6. Many desultory attempts have been made to pass reports over 200 to 300 mile paths with indifferent success. Maybe then again there have been the consistent

attempts of which the more important are probably the VK6WG/8BO morning skeys over a 12 month or so period with quite good results over the 250 mile path between Albany and Perth, and the successful driving of sibs over the mountains on the 65 mile path between 4LK at Charters Towers and Townsville. Yes, the 650 mile passage VK7/5 and the 1,500 mile path VK5/8 have both been opened, but these were the fruits awarded canny experienced operators who seized the opportunity when their experience, observation and deduction indicated the possibility of openings. Yes, VK2 is in the picture with the path to Newcastle, not easy terrain by any means, and the 2AH/2ZL hop is to their credit. The latter I do not know enough about, it may have been the result of consistent attempts or the reward of experience.

Now Gordon 3ZEJ, of Ballarat is willing to take on all comers regarding skeys, particularly in VK2 and 4. The opportunity for VK3 and VK7 to participate is there during the existing VK3/VK6 sked period.

Here are sked times, indicating open and close of sked, listed E.A.S.T.: VK3 commences with a 5-minute transmitting period followed by a 5-minute listening period. Sundays 1200-1210, 2180-2150, 2230-2250. Tuesdays 2230-2250. Monday, Wednesday, Thursday, Friday and Saturday, 2130-2140, 2230-2250. Skeys to continue until contact is made. 3ZEJ freq. is 145.1 Mc.

Gear: 90 watts to four 10-element Yagis 10 feet apart horizontally and vertically, 65 ft. high. Rx uses 6BC4s in cascade. While c.w. would be the ideal method of tx, 3ZEJ is planning to go on s.s.b. to enable him to get more effective intelligence over these DX distances. These skeys commenced Aug. 28. Known VK8 stations participating are 6WG 144.12, 6ZAV 144.135, 6BO 144.22, 6BE 144.36 Mc. Wally 6WG (Albany) is using 72 watts final input to 32 elements phased 53 feet up, converter 6J6a p.p.

New South Wales: The monthly meeting saw 37 members present to hear a lecture by Allan Johnson of the P.M.G. Dept. on Transistor Power Supplies. Allan gave a good lot of practical advice and data for using these units and how to construct same. The figures presented were so attractive in terms of efficiency versus battery drain that I am certain many generator enthusiasts gave serious thought to a change-over.

A new method of scoring in fox hunts was discussed and it was decided that as well as the existing 3, 2, and 1 points for 1st, 2nd and 3rd, there will be an additional 2 points allotted to the car doing the hunt in the shortest distance. The fox will find out the shortest route to his hiding place and calculate how long it should take to cover it at 30 m.p.h. Any hound arriving before that time will be penalised, so watch your speedometers chaps! This rule should encourage skill and not speed.

On Monday, 10/8/59, as part of the handicrafts section at Willoughby Town Hall, equipment was set up to display Ham Radio to the public. It was arranged for the Mayor of Willoughby to pass a message of greeting to the Mayor of Katoomba over a 2 mx link. Terrain was against it, however, and the message was relayed via 2WI to 2AUX, the club station of the Blue Mountains Section. All went over well and the amount of interest shown by the crowd, many of whom spoke over the air on both nights, was most pleasing. Congratulations to 2PM, 2OA and the others who assisted.

Mobile Fox Hunt, 19th Aug.—The fox was Bob 2OA, but being on the sick list and unable to drive, was assisted by John 2ZAV. They had the frustrating experience of getting a flat tyre 10 minutes after the start and with one eye on the road worked frantically to change it. They got under way in time, however, much to the sorrow of the hounds. The night was won by 2PM, 2nd 2ZBG and 3rd 2AWZ.

Treasurer Hunt, 2nd Aug.—Horrie 2HL was the pirate hiding some very cryptic clues which helped the confusion greatly. 2ZCF with 2ZAL cleaned up the day with 11 pts., with 2OA 10 pts., 2ANF and 2AWZ tying with 2ASZ 9 pts. Thanks a lot, Horrie. Results of midwinter contest in July: 1st, 2ZCF 124 pts., 2nd 2RX 99 pts., 3rd 2ZFC 96 pts.

Surprise Scramble, 30th Aug.: 1st 2ZFC and 2AWZ tied with 15 pts., 2PM 2nd 14 pts., 3rd 2ZCF, 2ZBX, 2WI tied with 12 pts. Hope we have many more.

Several stations are planning trips for the long week-end in October. Phil 2ZBX has suggested Scenic Dick 2ZCF Mt. Gibraltar at Boral, Gordon, Dick 2ZCF Mt. Gibraltar at Boral, John 2ZAV heading towards Newcastle. Don't forget the Blue Mountains Field Day on October 25 at Lawson.—2ASZ.

Victoria, Western: Reg 3ZFO (Horsham) is keen on 144 Mc. and is putting up two 18 ft. Yagis and making rx and tx changes with that in mind. Skeds were being run between Ballarat and Mac 3ZCW at Ouyen until the recent storm. Mac lost his beams and we have not heard from him since. Those skeds resulted in about 150 contacts over the 200 mile path and they proved to be 100 per cent. reliable. George 3ZEA in Rainbow has been worked several times during the last couple of weeks from this QTH. Geo. comes on around 2100 hours but he has a grain silo in front of his beam when it is aimed at Melbourne; this makes things a trifle difficult. 3ZEP, 3NN (Yannac) and 3ZFD (Horsham) tried to get to 3ZCD at Bordertown but no luck. They are going to try again.—3ZEF.

South Australia: George 3ZGA has built himself a 144 Mc. converter using a local osc. and reports good results. George's next effort is a 144 Mc. tx. I'm not sure but I think George has an 829B final, keep at it fellow, a few more sigs up there and we'll all be back on the good old band.

Those reported for looking at the one-eyed monster too much are: Col 5RO, who incidentally finished up buying one, Keith 5MT, Bill 5ZAX, Ken 5KC and Clem 5GL. Come on fellows, leave the dead cowboys and Indians to the kids and get ready for the big DX season just around the corner.

Gordon 5XU, through 5WI, is organising W.I.C.E.N. amongst the v.h.f. boys and has a roll call on 50 Mc. at the same time as the roll call on 80 mc on Sunday nights. Any interested members are asked to contact Gordon who is anxious to use 288, 144, 50 Mc.—particularly mobile outfits.—5ZAW.

Western Australia: Two metre activity in VK6 should have a shot in the arm from the current checks VK6/VK3. See the opening notes for sked times and remember the two-hour time difference. What about it VK5, will you be in it?

T.v. has arrived in the West, but, apart from some puzzled viewers on Channel 1, who wonder what those black and white bars mean, no impact has been felt among Amateurs yet.—6BE.

GENERAL

How about it scribes and others interested, news of your regular metropolitan/country and cross country contacts with distances covered? Would the VK5/6 chaps concerned submit details of their 144 Mc. contacts to F.E. through their Divisional Council so that F.E. may confirm the distances covered. The record list as last published was a farce without that in pride of place. And if 50 Mc. types read as far as this, how about sending in a list of countries worked, just the number of countries—continents would do.—30F.

Victoria: T.V.I. Committee.—The committee had their first meeting on Sept. 1. They consist of 3ZFO, 3ZFG and 3ZGP representing the V.h.f. Group and 3AEL who is acting for the two members to be appointed by Divisional Council. The delay here is due to Council being actively engaged with the frequency allocation business. Much was discussed at the meeting and they feel that the committee can now tackle any problems that may arise.

Those in trouble should contact any of the above on the air or telephone John Anderson, 3ZFO, at WY 1726 after business hours, or write C/o W.I.A. Interference Committee, P.O. Box 36, East Melbourne, C.2, Vic., who will advise on the requirements for investigation of your problems. It is hoped to have further details announced via 3WI from time to time. When reporting trouble via telephone, please have available all relevant details of the complaint, etc., and where the Amateur concerned may be contacted.

The committee strongly recommends the following procedure. When a complaint is received regarding interference, that the Amateur concerned will refrain from transmitting for a period, to completely ascertain whether the interference is actually being caused by the Amateur, in particular t.v.i. Your personal standing with the complainant should be taken into account. Regulations by the Department insist that you should not antagonise the complainant, either by your attitude to the report or by continued interference. If there is good standing between yourself and the complainant investigate the report immediately. If it is clear that you are causing interference, it is better to remain off the air, except to conduct tests to ascertain any adjustments you have made might have cured the trouble.

Most troubles, particularly with t.v.i., resolve themselves into one of three results: Overload of the set, mostly from 50 Mc.; cross-hatch on all channels or individual channel, or audio break through. Ascertain which is causing the

S W L

Maurice Cox, WIA-L3055
Flat 1, 37 Boyd Crescent,
Olympic Village, Heidelberg,
N.23, Victoria.

Hi fellas! Here is your scribe with this month's news for the s.w.l.'ers of "down under". Firstly, I want to write of the R.D. Contest. Five of us were present at Bert's (3ZGD) QTH. We spent 30 hours there—working, eating and a couple of hours sleep was attained in the wee small hours.

I would like, on behalf of the VK3 S.w.l. Group, to convey my wholehearted thanks to Bert, his XYL Phill and two harmonics—Paul and Greg,—for the help and food that they gave us; due to them, we had a most wonderful time and we enjoyed the get-together immensely. Once again, thanks very much Bert.

I'll let you know now chaps, I entered a contest for the first time and they have got me in! I sincerely hope all you s.w.l.'s did well and that we hear of you entering more of them.

At the August meeting of the VK3 Division S.w.l. Group the following officers were elected as office-bearers for the next 12 months: Mike Ide, President; Ian Woodman and Bert Stebbings (3ZGD), Vice-Presidents; Maurice Cox, Secretary; and Ian Thomas, Assistant Secretary. I might add here that we have some big plans for the forthcoming year.

CORRESPONDENCE

Now on to the letters for this month. Firstly, from Mike Codlow, of Carnegie. "This letter is to let you know that I enjoy reading your s.w.l. notes in 'Amateur Radio'. I have been interested in s.w. listening for about three years. I am now 18 years of age. Unfortunately, I only manage to spend a few hours a month listening to the s.w. bands. Work keeps me busy during the day, and often until late at night. I am also studying for my Leaving Certificate. Most of my listening is done in the early hours of the morning.

"My receiver is a 'Standard', 9 transistor radio, size 8 x 5 x 2 inches. Its frequency range is 3.9 to 12 Mc. My antenna is a half wave, single feeder, resonant for 11.8 Mc., and beamed north west-south east.

"I wish you all the best in the writing of the s.w.l. section of 'Amateur Radio', and I shall send you further information of stations being heard on the s.w. b.c. bands during the months to come."

Thanks for your letter Mike, you would have received mine by now. Hope to hear from you soon.

Next one is from Don Grantley, BERS1002. "Many thanks for your letter OM, pleased to hear from you and to officially make your acquaintance. It's a pleasure to be able to assist you at all times, and if there is anything special you want, speak, and I shall do it for you. I must say a few words in praise

trouble and work on your tx from there. Not forgetting that rx's can cause trouble as well. Reference should be made to the A.R.R.L. Handbook sections on interference and/or the Rand Handbook on T.V.I. These are invaluable guides to tracking down and curing troubles.

Another fallacy is accepting your own t.v. as a guide. Cross hatch or front-end overload can occur on adjacent sets and not show on your own: A personal check will show the trouble. On no account offer to touch the set in trouble yourself. Enquire what organisation is engaged to service the rx and arrange for a representative to call and attach the necessary traps, etc., that may require fitting. First of all explain the position and should the serviceman not be familiar with the trouble, demonstrate the effects to him so that he will understand.

It is also wise, when difficulty of any nature is experienced, to consult your local Radio Inspector and report the trouble to him.

It is hoped to have a list available of the local Inspectors for your information.

For any further details at this stage, please contact any members of the committee who will be only too pleased to give you all the help he can.—3ZGP.

of Tim Mills. He is doing a swell job as Secretary of our Group and has everyone on the ball; better still, as Asst. Secretary of the VK2 Division, he is in constant touch with the Division itself.

"OK on your 24 hour effort in the R.D. Contest. I believe it is really necessary and would have done the same this year had I been able to. Last year I was very careless with it. I went to roost at 11 p.m. on the Saturday night, by which time I had about 550 points, and got up again about 4 a.m., listened for a while and then did my milking; putting in until about 4 p.m. on Sunday. I was careless, took the whole thing too cheaply, did not bother with c.w., and tossed over 300 points into the wastepaper basket, these being entries where I was uncertain of the serial number. I wish you well in the event. I hope that the number of entries is well up."

"Had a letter from Eric the other day, and he told me he would be working during the R.D. week-end. Eric and myself will probably tackle the B.E.R.U. this year. We are keeping VK to the fore in the G-land clubs—R.S.G.B. and I.S.W.L. Are you in the I.S.W.L.? If not, I will send you the s.w.b.c. notes out of their mag. each month.

"Heard anything of Rod de Balfour at all Maurice? Last I heard from him was very early this year and he was about to leave Tasmania to attend the Sydney University; don't know what happened. Sorry Don, I have not heard of him at all. Will try and write him a note soon.

The following items were extracted from Don Grantley's letter.

G3MUM

How many of us have heard Peter G3MUM working on phone? He is a fairly new operator, having been on for only 12 months. Sounds like any other G-lander over the air, but in reality is completely crippled, other than for the toes of one foot, with which he operates the controls of G3MUM.

VK-ZL CONTEST

This world-wide DX Contest will soon be on the list for us. Let us try and get organised and make sure that the top scorer in the receiving section is a VK s.w.l. Don Grantley, L2022, has entered two of these contests so far, and in both cases has done his utmost to hold top score for VK, succeeding in the 1958, after being third in 1957. On present indications, Don will be putting in almost the full period in the c.w. section, and only a short while on the phone.

Now this contest is a very fast-scoring event and in a short while a very creditable score can be rattled up, but more than this, there is the very distinct possibility of adding several new countries to your lists, as the DX which comes through, particularly on 10 and 15 metres, is rather amazing to say the least. The c.w. operating in general is of the highest order, particularly from the American call areas, and is a good opportunity to have some intense code practice as well as collecting a few new ones and building up your country score.

The N.S.W. Group will no doubt be on the ball and it is to be hoped that the other Divisions organise a listening marathon to keep Australian s.w.l.'s to the fore in the event.

NOVICE STATIONS IN THE U.S.A.

We are all aware that there is a grade of ticket in the U.S. which permits restricted operation to Novices. These chaps operate c.w. crystal controlled on their segments of 40 and 15 metres, on a restricted power. Most of these are youngsters, some only 9 or 10 years of age, but all very keen, and are the Amateurs of the future.

Most of them are unaware that their signals, particularly on 7 Mc., are getting out of the States, much less into Australia. They all have their cards and most of them QSL very enthusiastically and are most eager to get reports on their transmissions.

An example of their enthusiasm is shown by a package received by L2022 on 20th July. It appears that Don's list of novices heard over a period appeared in July "CQ", and on this day a large envelope, bearing postage to the value of 50 cents, airmail, and containing a wad of I.R.C.'s arrived. Apart from I.R.C.'s, there was a brief note stating: "Sure wud like ur card OM" and the station's call sign.

So how about it chaps, give these kids a bit of your time, send them a card via your Bureau; you will get one back most likely, and who knows—could be a new State. The standard of c.w. is poor in the circumstances and anybody could copy it. Only catch is the heavy interference on 40 metres.

73 de your scribe.

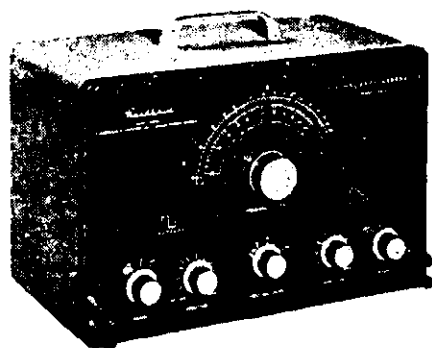
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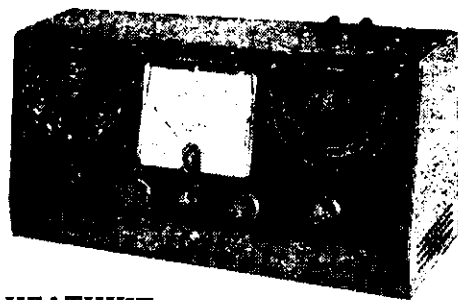
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If you need high quality sine and square waves over a wide range you will find the AG-10 ideally suited with many top quality features for truly outstanding results. Both sine and square wave outputs may be used at the same time without affecting either waveform. This unit provides a frequency response of plus 1.5 db from 20 c.p.s. to 1 mc. on both sine and square waves with less than 0.25% sine wave distortion from 20 to 20,000 c.p.s. Sine wave impedance is 600 ohms, square wave output impedance is 50 ohms (except in 10 volt range). Square wave rise time is less than 0.15 microseconds. Features include a five-position bandswitch—continuously variable tuning—shielded oscillator circuit—separate step and variable output attenuators in ranges of 10, 1 and 0.1 volts for both sine and square wave with an extra range of 0.01 volt on sine wave. A special control is provided in the oscillator circuit to compensate for differences in tube characteristics, thus assuring absolute minimum distortion. The well-filtered power supply uses silicon-diode rectifiers and a husky power transformer. Measures 13 inches wide, 8½ inches high, and 7 inches deep.



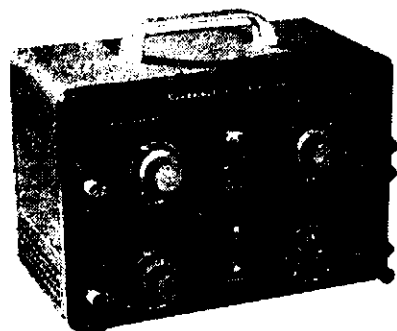
HEATHKIT RC-1 RADIATION COUNTER KIT

Ideal for use in prospecting or in medical industrial laboratories. Meter ranges are 0-100, 600, 60,000 counts-per-minute, and 0.02, 0.1, 1 and 10 milliroentgens-per-hour. Complete, includes batteries and safe radiation sample for calibration. Coiled cord between probe and instrument—no tangling. Size: 9½ in. high, 6½ in. wide, 5 in. deep.



HEATHKIT QM-1 "Q" METER KIT

Take the guess work out of electronic testing with this time and labour saving instrument. Once financially out of reach of the average serviceman, Heathkit "do-it-yourself" prices make it possible for any technician to own a high quality "Q" Meter. The QM-1 tests components at frequencies at which they are normally used (150 kc. to 18 mc.). Wide range of inductance, capacitance and "Q" will cover practically all values encountered. All indications are read directly on a large 4½ inch, 50 microampere, panel-mounted meter. A 12AT7 oscillator with pre-wound coils is used to obtain the full frequency range on four bands. Oscillator output is metered to provide constant injection. A complete v.t.v.m. circuit is used as a resonance indicator, using a 6AL5 twin diode and a 12AU7 v.t.v.m. amplifier. Voltage regulated and transformer operated power supply utilises a 6X5 full wave rectifier and an OD3 regulator tube. A special test coil is provided for calibration purposes.



HEATHKIT S-3 ELECTRONIC SWITCH KIT

The S-3 allows oscilloscope observation of two signals simultaneously, such as input and output of amplifiers. Comparing waveforms will help you localise faults quickly. Separate gain controls are provided for each channel, with sync. output to lock oscilloscope sweep or time base to signal frequency. A position control is provided to separate or superimpose the two waveforms. Frequency response is plus or minus 1 db from 0 to 100 kc. Four switching rates of approx. 150, 500, 1,500 and 5,000 cycles.

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NOTES

FEDERAL

FEDERAL SECRETARY RESIGNS

It was with regret that the Federal Executive accepted the resignation of Federal Secretary, Douglas Bowe, VK3DU, at its meeting held on 28th August.

Doug joined the Executive in June 1954 and carried out the duties of Federal Secretary for five years in a most commendable manner. During a trip abroad last year he spent much of his tour time in liaising with overseas Amateur Societies for the general benefit of the Wireless Institute of Australia.

This year Doug, unfortunately, had to undergo a serious operation and it is for reasons of regaining his health that he has reluctantly resigned the post. Federal Council and members will join in thanking Doug for his painstaking attention to the office of Federal Secretary and wishing him a rapid recovery to normal health.

FEDERAL QSL BUREAU

The Israel Amateur Radio Club has announced the winners of their 1958 Jubilee Marathon. The world winner was HB9EU with SM5LL as runner-up. Amongst the country winners are Australia, VK3CX; New Zealand, ZLIAPM.

OH2XK/O and OH2YV/O will be on the air from the Aaland Islands (in Baltic Sea) starting on September 17 and continuing until 22nd, mainly on c.w. They propose using 3.5, 7 and 14 Mc. bands but not simultaneously.

Those needing Burma should keep an ear open for XZ2GM, who is regularly active using 35 watts to a ground plane. The operator is M. G. Aye. Maung, 85 Tamwe Road, Rangoon, Burma. He QSLs all contacts.

Details of the Cabo Branco Award, which is issued by the Association of Radio Amateurs of Paraiba, Brazil, may be had from this Bureau.

The amended Budget proposals (Australian) recently released show that QSL Bureau costs will rise by 50 per cent. The original proposal would have increased costs by 175 per cent.

—Ray Jones, VK3RJ, Manager.

FED. CONTEST COMMITTEE

NATIONAL FIELD DAY

One of the duties of the Federal Contest Committee is to endeavour to conduct Contests such that "a good time is had by all". It was with this object in view that the proposed rules for N.F.D., as published in last month's "A.R.," were formulated. Most of you participated in the R.D. Contest and enjoyed it, regardless of whether you gained a high score or not. Why then cannot the N.F.D. be also an annual contest that is looked forward to by all? It should have a high participation figure as similar contests con-

CONTEST CALENDAR

Compiled by W.I.A. Fed. Contest Com.

★

VK-ZL DX CONTEST, 1959:

Dates: Phone—1000 GMT, Saturday, 3rd Oct.—1000 GMT, 4th Oct.

C.W.—10th Oct.—11th Oct., 1959.
Rules: Overseas, as for 1957. VK-ZL, Bonus value altered (see August "A.R.").

"CQ" WORLD-WIDE:

Dates: Phone—Last week-end Oct. '59.
C.W.—Last week-end Nov. '59.

R.S.G.B. 21/28 Mc. PHONE CONTEST:

Dates: 0700 hrs. Sat., Nov. 21, to 1900 hrs. Sun., Nov. 22, 1959.
Rules: See "A.R." October, 1959.

ducted in the U.K. and the U.S.A. are very popular.

What the F.C.C. have to decide is what makes Contests "tick"? If you do not write and let us know your opinion, good or bad, of the proposed N.F.D. rules, we are left in the dark and have to use "hit and miss" methods.

We know that writing a letter is a task avoided by most of us. If this is so in your case, why not discuss the matter over the air? Perhaps you are in a net on 40 or 80 metres, or better still, pass your ideas to a VK7 station. You may be sure they will reach the F.C.C. via the grape vine.

Most important, you must start to get your gear together for the National Field Day NOW!

Address your letters to the Federal Contest Committee, W.I.A., Box 371B, Hobart, Tasmania.

NEW SOUTH WALES

The August meeting of the N.S.W. Division was held as usual at Science House on August 28, approximately 40 members being present. We were very pleased to welcome to our meeting two Interstate members, 50M and 5ZAW, who met many of our local members. We would like any Interstate visitors to join us at our meetings held on the fourth Friday of the month. Lectures are arranged for each meeting and we feel sure will appeal to all.

In the absence of the Secretary, who was taking a well earned rest, the minutes were read by the Assist. Secretary, Tim Z2TM, and following the usual formalities, new members totalling 36 were admitted to membership, these comprised 13 Full Members and 25 Associates.

The President, Dave 2EO, introduced the lecturer Frank Hine (2QL) who gave a most interesting discourse on lonospheric Prediction Charts, a subject on which I feel very few of us knew very little. Frank pursued his subject in a most workmanlike manner and using the Australian Charts as an example, showed how predictions may be read giving the most suitable time and frequency for a contact between two predetermined points. The amount of detail necessary to such a subject was given and, as a result, time ran out before Frank had had the opportunity to explain the world-wide prediction charts, but these will be the subject of a further lecture by Frank in the very near future. A number of questions were asked of the lecturer, and the vote of thanks to Frank was proposed by Morrie 2VW and passed in the usual manner.

A discussion then took place on the Minutes of the Federal Convention, these were explained in detail by the Federal Councillor, Bob 2ARG. These items are to be ratified at the next meeting which was to have been held on September 25.

The meeting was then closed by the President at 10.20 p.m. and members and visitors adjourned for coffee and the usual ragchew which continued unabated until lights out.

BLUE MOUNTAINS SECTION FIELD DAY

The Field Day for the Blue Mountains Section will be held at Lawson Swimming Pool on 25th October, registration commencing at 10 a.m. at a cost of 10/- for the whole family. A full programme of scrambles and competitions has been arranged for young and old, with some excellent prizes to be given to successful entrants. Full details will appear in your bulletin this month, and we would urge you to pack the family off to Lawson on that day as an excellent time will be spent by all. The scrambles will be conducted on 2, 6 and 40 metres, so include the gear for mobile and portable operation.

GOSFORD FIELD DAY

The Annual Field Day arranged so successfully by the Gosford boys will be held this year on November 22, the location being the Gosford Sailing Club as previously. This Field Day is also a must for all as an excellent programme is arranged to suit all tastes, with good prizes to be won. No details are yet to hand, but will be included in full in the October Bulletin. So fellows, give the family

SILENT KEY

It is with deep regret that we record the passing of—

VK2SS—A. Skenesmith.

VK2AGU—Harry Hatton.

VK7AJ—A. W. Johnson.

another day out in the glorious surroundings of Brisbane Water, and give the organisers encouragement in their efforts.

Members of the Central Coast Zone are reminded that a hook-up is held each Monday at 8.30 p.m. on 3635 Kc. It is requested that all zone members make an endeavour to appear on this net.

SLOW MORSE TRANSMISSIONS

Permission has been received from the Postmaster General's Department to conduct slow morse transmissions on 3535 Kc. for the benefit of those who wish to attain their Certificate of Proficiency. These transmissions will fill a long felt need, and arrangements are being made to recruit a body of operators to conduct these sessions, if possible on a nightly basis, so anyone who feels they can give up a half hour once a week would be welcome to submit their names for the roster of operators. Full details of the schedule will be given in the Bulletins and the weekly broadcast over VK2WI.

ALBURY RADIO CLUB

The Albury Radio Club has been formed but recently, however in that short period much has been accomplished. The seven licensed Amateurs from Albury and a number of enthusiastic lads in the district have banded together to form the club, which under the driving force of the President, Noel 2OJ, and his willing band of workers have progressed to the stage where the club is about to apply for its call sign.

The club has been fortunate in obtaining a room at the Albury High School, the staff of which have given full support to the venture. A start has been made on the W.I.A. A.O.C.P. course and a number of associates are making good progress under the guidance of Don 2RS and other instructors.

As further instruction, the club is building its own gear, keeping as far from disposals gear as possible, a frequency meter is under construction, and work is commencing on the erection of the antenna. New members are being sought, so we suggest any local enthusiasts should attend the next meeting and join the band.

HUNTER BRANCH

Your Branch President, Lionel 2CS, was in fine form during the August meeting and almost obtained some converts to s.s.b. Some animated cross-talk was flying around and Bill 2XT still remains to be convinced about something or other. Lionel was quite illuminating and even the teeny-weeny bulb showed signs of brightness on speech. Just as well Zulu Lulu wasn't there or the bulb would have burst its inside. Those present were 2CS, 2SF, 2ZMO, 2RJ, 2ZDL, 2AKK, 2XT, 2ZJR, 2AEE, 2AQR and Associates Sutherland, Gray, Bailey, Richardson, Davies, Sumner and Fyfe. 2AQR was welcomed as a visitor but is still wondering why? Names are rolling in for the Annual

WIRELESS INSTITUTE OF AUS. HUNTER BRANCH, N.S.W. DIV.

★

EIGHTH ANNUAL CONVENTION

SATURDAY and SUNDAY,
3rd and 4th OCTOBER, 1959

★

PROGRAMME:

Saturday, 7.30 p.m., October 3—
Dinner at University of N.S.W., Newcastle. Guest Speaker: Hon. Alan Fairhall, M.H.R., VK2KB.

Sunday, Oct. 4, Blackalls Park—

9.30-10.30 a.m.: 144 Mc. Hidden Tx Hunt.
11 a.m.: W.I.A. Broadcast.

11.30 a.m.: Disposals Sale.
Noon: Lunch.

1.15-2.15 p.m.: 7 Mc. Scramble (no a.c. permitted).

3-4 p.m.: 144 Mc. Hidden Tx Hunt.

4.30 p.m.: Prizegiving, Farewells, etc.
Usual races and competitions for XYLs and Harmonics.
Boiling water will be available free.

N.S.W. CENTRAL COAST SECT.

★

GOSFORD FIELD DAY

will be held on

SUNDAY, NOVEMBER 22

at the

GOSFORD SAILING CLUB

★

40 AND 2 METRE HUNTS
XYL BOAT TRIP, ETC.

Reg Brook, VK2AI, Secretary

Dinner and Blackall's Field Day, both of which will probably be over before you read this; hope to have a full report in the November issue, but it will be close as my tripe-writer is of the QRS variety.

Recently had the opportunity to peruse a list of Amateurs of the Hunter Valley and a breakdown showed that of the 88 full licensees, only 40 were members of the Institute; the Z calls were 13 with six non-members; there were also 23 associates. On these figures it looks like some local propaganda is called for. Even some of the blokes who retain their call sign for sentimental purposes only might be enticed to become active—look what happened to Bill 2ZL. Talking of Bill, I doubt if there is anything in the rumour that he is a member of the Horological Guild, though he did mend his grandmother's grandfather clock. At present Bill is losing a lot of sleep trying to devise a way to instal a motor to save him having to wind him—her—it up. Address all ideas to Phenol Bay.

Lionel 2CS blamed a crook fuel pump for the reason why he blotted his copy book by being late for his 2AWX broadcast the other night. If truth would out, it was probably some other pump trouble as no doubt he was celebrating a certain promotion that came his way. Going from the sublime to the ridiculous, Stuart 2ZDF thought he would take it easy returning home after a few months in VIM, but nearing Goulburn he saw the stork flying past his car, The bird won but Stuart was the ultimate winner with a bonny baby girl; congrats to you both. The powers that be apparently heard of the event and promoted Stuart to production super; very appropriate.

Lionel is at present on holidays in the premier State—apparently needing the stronger Queensland sunshine to strengthen his eyes for future viewing of the square box with three channels in it. Extremely pleased to hear the voice of Ron 2ASJ on the 2AWX call-back; keep it up Ron and all the best Les 2ERJ, with a 122 for company, was on holidays at Pt. Stevens, but the fish didn't bite. Bill 2XT still working Yanks galore, believe he expects to meet some in person later on this year. Well, chaps, next meeting is on October 9, usual place, so come along and compare your doings of the week before at Blackalls.

VICTORIA

STATE CONVENTION

The Victorian Division W.I.A. State Convention will be held at Stawell this year during the week-end of 3rd and 4th October. The Convention Dinner will be at the Commercial Hotel, Stawell, commencing at 6.30 p.m. on Saturday, 3rd October. On Sunday, 4th October, during the morning an 80 mx transmitter hunt and a 2 mx fox hunt will be held for those interested, or a visit to the wild flowers for those who desire to see the bush life. A Picnic lunch (bring your own) will be held at Halls Gap and during the lunch period some disposals equipment will be sold. In the afternoon there will be a scramble and other entertainments.

SOUTH WESTERN ZONE

The closing date for accommodation for the Convention being held at Warrnambool on the week-end of 31st October and 1st November, is the 1st October.

The dinner on Saturday evening will be held at 6.30 p.m. at Eckers Hotel. Bookings will be taken up until 23rd October if accompanied by a deposit.

3PS and 3ARJ will be on the air from 2 p.m. on the Saturday on the 3 and 7 Mc. bands to work all the mobiles. Upon arrival at Warrnambool, visitors are requested to report at Bill Wines' QTH at 48 Crawley Street, Warrnambool.

All bookings must be sent to the organiser at the QTH given above.

NORTH EASTERN ZONE

Seems like I spoke too soon last month about antennae staying put. Latest news from the salt mines of Benalla is that antennae fell right and left at the QTHs of 3KR and 3DW. At 3KA's, nothing was left standing, not even the 50 ft. sticks holding up the 30 mx antenna. However, Ken hopes to re-build with a tri-band quad this time and with this in mind went visiting 3AGG and yours truly to see how quads are kept in the air during high winds. At the QTH of 3AGG he was suitably impressed with the construction, but at this QTH, I am not sure whether Ken was impressed or amazed that my quad weathered the gales. Ken now has his W.A.S.

Keith 3DW also suffered damage to his quad but prompt repairs put him in business again. Hugh 3AHF just returned from the gold coast

with a new auto, now that just doesn't appear right Hugh, usually one goes to the gold coast with a new auto and usually has to pawn it to stay long enough to get the tan you have. Nothing from Jack 3FF or Bill 3JP: what about a line tellers?

SAUL, our esteemed Secretary, joins the ranks of those with fallen antennae, but due to the deluge no longer has to bucket the water to the house, so you see "It is an ill wind that does not do some good." Johnny 3ACK playing around with tape decks so that he can have sound with his 8 mm. movies. 3AGG loves to leave his v.i.o. running all the time but I think Bruce will discontinue this practice after a JA called him on his frequency on 6 metres and Bruce did not hear him. Would have been his first JA on 6 mx too. Along with Peter 3AFP and Sid 3CI, Bruce is contemplating operation on 288 Mc.

George 3GD has had a visit from the R.I. over t.v.l., however after checking George's rig thoroughly for harmonic radiation, George has a clean bill of health, so the moral is fellers, proof your rig to the best of your ability and if the radiation from your harmonics is below a certain point you are in the clear. How to get it below that certain point is your business.

The Annual Zone Convention will be held at the Auditorium at Shepparton's SSR (by courtesy of the manager, Murray 3HZ) on Sunday, November 8. Keep this day free, roll up and let's hear your wings; a good time can be had by all. Election of officers including that of zone correspondent. Attend so that you are able to defend yourself in person because if you don't you never know what you may end up being for the next 12 months.

QUEENSLAND

TOWNSVILLE

The boys certainly rolled up in full force at the last meeting on 27th August although a few of the old timers were still conspicuous by their absence. It was pleasing to note a few visitors, namely Vern 4LK from Charters Towers and Basil 4ZW from Cairns, also associate Aften from Atherton. Main topics of discussion being the formation of class for A.O.C.P., which will get under way next week at the residence of 4PF, Frank being one of the lecturers and the members are lucky to have access to his gear. It is to be hoped all

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VICTORIA

W.I.A. N.S.W. DIVISION SOUTH WESTERN ZONE

Seventh Annual CONVENTION

at NARRANDERA

3rd, 4th, 5th OCTOBER, 1959

Location: Postal Institute Hall
Bolton Street, Narrandera

A good programme of events is being drawn up including a Scramble on 2 and 5-6 metres. Good prizes for all events. Also good prizes will be awarded to the home stations for the most contacts with those at the Convention.

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who come along will stay the course and get their tickets. Claude 4UX is to start classes at Ayr and has nine members to start with next month. This augurs well for our Centenary Year in Queensland. If this good work keeps up next year the north will come into its own and may be a new far northern branch of the W.I.A. can be formed.

Another important matter was raised by 4RW and 4ZBE, namely the placing of a station in the Trades and Industries Fair which was to have been held from 17th to 18th Sept. Although time was short, it was decided that T.A.R.C. apply for a call sign to use on that occasion. A number of members loaned their rigs, etc., for the occasion, which is hoped will become a yearly event.

The Chairman, Allan 4PS, advised the meeting he had circularised all Amateurs from

Sarina in the south to Arthur 4FE in Normanston in the north to Owen 4OV in Mt. Isa in the west, giving them an invitation to be present at a Hamfest of the T.A.R.C. to be held on 3rd and 4th October when various matters affecting the Amateurs will be discussed. He also drew up an imposing list of various places to visit and including "do's" for the wives and children who may accompany the OM. Accommodation will be found with the local boys. Hope a good roll up ensues to make this first occasion the success which it deserves. This will be the place to air all your grievances and see what a collective effort will bring forth.

Frank 4ZM bewails the fact that only a few call in on the W.I.A. net on 20 mx each Sunday and hopes to hear more and will even pass on your grouches although not on Council himself. If you don't call in and grouch, it is assumed you are in accord with the way the Division is run. Remember a branch which has no opposition voices is a decadent one. Arguments keep the officials on their toes.

Rex 4LR has returned to Brisbane after the mid-winter recess, sports a single seater coupe and plans to go mobile. Mike 4OM visited my shack just as a break through to KH6 on 50 Mc. opened on 18th August and was suitably impressed. I hope Owen 4OV back from his trip to Darwin, worked mobile each way and is now fully converted to this type of Ham Radio for future holidays. Believe it or not, but Arthur 4FE is going in for gardening and beautifying the department edifices in Normanston. Does he miss the swaying palms and dusky maidens of Thursday Island? The sore throat that Allan 4PS developed in the R.D. Contest turned into a bout of sickness and laid him up for the week. Even so, he enjoyed the Contest.

Basil 4ZM and Aften on "Walkabout" visited Sarina, Mackay, Home Hill, Ayr, Charters Towers and local boys in their travels. Can vouch with Harry 4ZP that they are good eaters but better at washing the dishes (XYL Zoe to note!). John 4DD again on the sick list; was it the germ of s.s.b. that did it? Charlie 4BQ almost finished his tower and hopes to erect it very soon. Ted 4EJ now mike shy and pounds the brass; had heard of the voice tests for the t.v. shows and is a non-starter. Allan 4BE waiting for 10 mx to open, also same goes for Len 4GD. Eric 4EL is waiting patiently for the bright lights. Bob 4CR is off the air; electric light bill getting too high during winter months. Doug 4ZBM and Bill 4ZBE are there for each opening to Hawaii on 50 Mc. Can hear the JAs calling the VK6 boys on 50 Mc. Congrats to Mike 4OM and XYL upon the arrival of a brand new harmonic.

SOUTH AUSTRALIA

The monthly general meeting of the VK5 Division for August took the form of a display of members' gear, and for the first time since this display was first held each year, I regret to say that the response was poor. Why it was poor, nobody could hazard a guess. It has always been a popular night, and up until this month the number of exhibits usually took two or three tables to display. I could but notice that those who did not bother to display any gear seemed the most surprised at its lack; and can only assume that everybody left it to everybody else to do the right thing. Only one award was made for the night, due again to not enough entries, and this went to Barry 5ZBZ for an excellently constructed 6 mx mobile transmitter. Congrats, and the award was well merited.

Nothing of great importance came up in general business, although there was a ballot for the disposals equipment. There was a suggestion for a W.I.C.E.N. Contest incorporating message handling. The Picnic came up for discussion and it was decided to try and hold one in the autumn next year.

3ZX, who is now a member of this Division, passed on greetings from the VK3 Division to the VK5 Division, and as a grand finale Leith 5LG commented on a recent letter published in the magazine with reference to using the American phone band of 14 Mc. for the R.D. Contest, so with the 83 members present all talking at once, and with Leith more than holding his own, both in volume and clarity, a good time was had by all.

The meeting closed at the wicking hour of 10.25 p.m., although I have it on good authority that at 11.25 p.m. Leith and the fire hydrant just outside the meeting room were still arguing the point as to c.w. versus phone.

Ken 5KC heard on 40 discussing his recent visit to the Snowy Mountains and regions thereto. His graphical descriptions of what the VK2 boys call highways made interesting listening, and should have flattered the ego of the wise men from the East no end. Hughie

5BC was also heard on 40 discussing a projected visit to the same area, probably in Sept. Apparently he expects to spend a portion of his leave in Adelaide and then for over the border. Hope he makes the general meeting, I am tired of telling various visitors and locals that the famous, or is it infamous, v.b.f. specialist 5BC seldom makes the meeting.

Vec 5BZ bobbed up on 40 one Sunday morning recently, calling CQ. He did not stay long, much to the disgust of the VK3 who called him loud and long. Nice to hear you on Cec., rumour had it that you had given it away. Gordon 5HM heard in contact with 4LE on 40, late on Saturday night, swapping R.D. numbers. The speed with which these two stalwarts dashed off their numbers had to be heard to be believed and when the diesel train blew its whistle as it passed the QTH of 4LB, I had to batten down everything within a hundred yards of my shack. What's that? It's a siren not a whistle. OK, have it your way, what's a whistle between friends.

Brian 5CA, our worthy and respected President, is at the moment of writing travelling up and around the Flinders Ranges on his vacation. I understand that he is a blood brother of the Wombi-Wombi tribe and conducts annual code exams for the local smoke signallers club.

This year's R.D. Contest was its usual success, and it is generally felt in VK5 that the 15-minute silence, plus the opening address, starts this popular Contest off on the right note. It is remarkable the number of locals who normally won't have a bar of any other Contest who dash into the R.D. melee with a whoop and a yell, and honestly seem to be enjoying themselves. This is as it should be and was the original idea behind the Contest before the competitive interest tended to cloud the real issue. Long may it continue to be the number one Contest in VK.

Heard an interview from the Best Broadcasting Station in VK (for your benefit, 5DN, ahem!) the other night with the Rev. Bob Guthberlet (better remembered as 5OD of the Port Pirle Boys' Club). Bob had apparently just returned from his four years' stay in W. land and was being interviewed at Broken Hill. Good to see you back Bob, and when you are domiciled perhaps we will hear you on the air again. What about a talk to the local general meeting?

Jim 5JK has been heard occasionally on 40 with his pee-wee rig which, incidentally, delivers a hefty signal, and my spies tell me that he has almost finished his new super-duper tx which is the one to end all tx building (oh yeah!). Col 5XY is about to make a trip to Wilpena Pound and will be armed with a 122 for the purpose of maintaining contact with civilisation. He would have taken the community (?) Type 3 but the previously mentioned blood brother of the Wombi-Wombi tribe beat him to the post!

It has been suggested in higher quarters that in an attempt to raise the standard of these Divisional notes (what do they mean by that?), I should introduce a technical topic now and then. The trouble with me technically is that I find it extremely hard to come down to the level of the peasants who might be foolish enough to read these notes, however with a wife and eighteen children to support, who am I to quibble, or should it be quibble. Well now let me see, perhaps a little simple question to start. Are you aware gentle reader that if you connect the h.t. supply to the filaments of a valve, several structural alterations take place within the vacuum? You are? Well what is the use of me going all technical!

John 5JC, our illustrious Secretary, has now resumed his position of W.I.C.E.N. Co-ordinator, so it would appear that the gremlins in the sky wire have departed. Why not announce periodically to your listeners that owing to magpies on the line you are having trouble with the transmission. It's marvellous just what sins that statement can cover in certain circles connected with radio. I speak with authority, John.

John 5DJ heard the other evening mobile on 40 with his mobile 4 watts. Graeme 5XV has been going great guns on 21 Mc. during the afternoons and looks like becoming a convert from 40 to this band. I rang his father, 5XU, the other night and all through our conversation on the phone I had the dubious privilege of listening to 5XV in contact with another station somewhere or other. Mow the front and back lawns for a month would fit the crime, I would think.

Nobby 5WK has been heard at odd intervals with his usual reliable signal. Pat 5LT was a visitor to the city of churches this month, down for a chat with his favourite medico, I had the pleasure of a short chat with him after he left the doctor. I asked him if he ever was on any other band but 14 Mc.,

VICTORIAN DIVISION W.I.A.

ANNUAL STATE CONVENTION

at STAWELL

SATURDAY and SUNDAY,
3rd and 4th OCTOBER, 1959

This coincides with the Flower Show at Halls Gap and opportunity will be given for interested members to visit this show.

Further information re programme, etc., will be found in Divisional notes in this issue.

Contact Bill Kinsella, 3AKW, re accommodation; forward to him £1 deposit.

NORTH EAST ZONE VIC. W.I.A.

CONVENTION

will be held at

SHEPPARTON

on

SUNDAY, 8th NOVEMBER

The meeting will be held in the Auditorium as last year commencing at 10 a.m.

A visit has been arranged to the Local Broadcast Station and various other items of interest are being teed up.

It is hoped that again we shall see a good roll up of metropolitan members and a big welcome will be extended to all.

W.I.A. VICTORIAN DIVISION SOUTH WESTERN ZONE

CONVENTION

will be held on

SATURDAY and SUNDAY,
31st OCT. and 1st NOV., '59

at

WARRNAMBOOL

For all inquiries and required accommodation, contact—

Bill Wines,

48 Crawley St., Warrnambool,
no later than 1st October.

and he said he never bothered with any other band because by staying put in one place, the Advisory Committee always knew where to find him. What it is to have a clear conscience! Bob 5BG, whose QTH is at Crystal Brook, is shortly off for his well-earned vacation to VK3, via Murray Bridge. Bert 5BB is another one from Crystal Brook who is very active on the bands these days. Pete 5FM also now at Crystal Brook can be heard on the DX bands. These three work at the local h.c. station and any time that I go through their area I am always heavily disguised, just in case they stop me and want to argue which station is the best in VK.

Austin 5WO now has his tower up in the air again and is sporting the tri-bandster that used to grave the tower of Comps 5EF, who, incidentally, is the proud possessor of a new commercial beam direct from G-land. Ern 5EN is another who is decidedly active on the air, although he is spending quite a lot of time with t.v., especially of the Amateur variety.

Les 5UX is reported to be nibbling at Amateur Radio again, and if this is true, a signal from Hawker could be heard. He is reported to be still challenging me for the title of "Mr. Physical Fitness," although I am somewhat worried by the information that a certain Amateur whom he visits in Adelaide is reinforcing all his chairs for the next visit. The main difference between Les and I is that mine is rippling muscle!

George 5EC at Ceduna is a single sideband convert. A friend of his, who will remain anonymous, tells me that he has four girls in the family and still has the names Faith, Hope, and Charity left in the box. After that it will be Mercy!

See 5ZBS is spending quite a time with the Nairne E.F.S.; incidentally, his first love. Quite a number of the gang trip up on his christian name. They all call him Cec, but it is Ses. He proudly boasts that his father intended to have him christened Moses, but in her nervousness, handed the padre the name on paper, which was back-to-front, and he finished up as Sesom. If you think I am pulling your leg, ask him, he is proud of it.

Renewed acquaintance with Lance 5ZBC the other night. As a matter of fact he was making a visit of inspection to the Best Broadcasting Station in the State—the B.B.S.S., and I happened to be on the pay-sheet for the night.

Still no news from the South East gang, and I am beginning to believe that a conspiracy of silence exists. I noticed this month in the daily paper that somebody from the S.E. was ringing their local paper down there for the purpose of giving the scores of a football match. He listed the umpire as the best player, and when the mistake was discovered, everybody's face was red. Now listen fellows, my face is always red, so I don't care if you send me some information and it turns out wrong, I'm always wrong!

Considerable interest was displayed in the transistorised 28 Mc. tx belonging to Les 5AX which appeared as if by magic at the general meeting. This genuine experimenter can be counted upon to produce a piece of modern gear at the slightest notice and, incidentally, it always works.

The Lord Mayor of Adelaide coined a happy phrase this month when he described as the Rhodes Scholarship of Industry the scholarship awarded to the Apprentice of the Year by the Adelaide Junior Chamber of Commerce. The scheme under which this coveted scholarship for apprentices has been made available annually since 1956, affords stimulus to budding tradesmen which cannot but be of the greatest value. So what, you say. Well, the winner this year is Leon Ernst, an associate member of this Division, an apprentice at Phillips Electrical Industries, and he won the 12-month trip to England from 58 entrants.

Congratulations, Leon. As a matter of fact he and I have a lot in common. I was voted in 19— as the apprentice most likely not to succeed! (Don't be frightened to mention the year, Fanny, we know it was 1907.—Editor.)

It is remarkable the number of R.D. Contest log sheets that were addressed to the Adelaide C.P.O. Box Number this year instead of to the new address in VK7. All of which goes to prove that some Amateurs are a creature of habit.

Several years ago, when I used to write these notes, several of my readers' XYLS used to write to me for advice on how to handle their husbands and the vexing question of Amateur Radio. Sure enough, and only after one month of writing the notes, my fatal attraction for the female sex has brought me a plaintive letter from "Fed-up" who asks for a cure for her helpmate's failure to leave the shack for meals when called. Well, "Fed-up," this is an unusual situation, and I must say that I have never encountered such a situation before. Oh that such wickedness should prevail! I can only suggest that you purchase a wooden mallet, a large and solid one, and also a brass gong; hit the gong with the mallet three separate times for lunch, and if no results, hit hubby with the mallet once, and all your troubles will be over.

TASMANIA

The R.D. Contest is over for this year. Our Division has done remarkably well, with 68 stations known to have taken part out of a total of 129 licences issued. If all logs are submitted in time, our multiplying fraction will look very healthy. A few observations on the Contest. Very few contacts were made on the 21 Mc. band and even fewer on the 28 Mc. band. The best band throughout the Contest was the 7 Mc. band. VK3s were being worked on the 14 Mc. band, an unusual occurrence at any time. TRX appears to have topped VK7 with his score; f.b. indeed Keith. But this result clearly shows once again that it is virtually impossible for a station in VK7 to claim 1,000 points. Some call signs heard participating in the Contest included Mark 7MH, Peter 7PF, Joy 7YL, Paul 7PJ and Tom 7SR. To summarise, the Contest was a very fine combined effort from most Amateurs within the State.

Joe 7BJ is back amongst us, after his sojourn in VK3 attending a course on television preparatory to its introduction here next year. We hope you can pass on some hints about eliminating C.V.I., Joe, as a result of your studies. The call sign of 7WJ was heard during the last week in August from the Ulverstone Science Exhibition. Stations throughout all Divisions and outside are to be commended for helping the boys of the North-West Zone make this venture the success it undoubtedly was.

On the week-end of October 24-25, Scouts throughout the world will be endeavouring to make contact internationally by means of Amateur Radio. We in Tasmania will be co-operating to the full in this endeavour, and it is indeed a happy coincidence that the former world Chief Scout, our new Governor, will have at that week-end recently arrived in Tasmania. We hope that he will tape a message to Scouts throughout the world, to be played on several occasions by Ken 7KA during the week-end in question. A number of Scouts will be located at stations in Hobart and we ask for co-operation from stations both within and without Australia for contacts, whether you have Scouts at your station or not.

Myles 7MF is back on the air from his new QTH in Lindistarne after moving from King Island, and will no doubt cause a bit more QRM to us in Hobart. Tom 7BT has been heard on the air again. Can we expect a repetition of this, Tom?

NORTE WESTERN ZONE

Well here we are once more; time certainly is flying and I fear Xmas will soon be upon us. Really not a great deal of activity to report this month.

During August this zone manned a live exhibit at the Exhibition held in the High School at Ulverstone, which included a complete Amateur Radio Station besides all the other interesting bits and pieces. This station was on the air each night from 7 to 9 p.m. on 80 and 40 metres and VKs, ZLs and one VR were worked. I understand Chile was raised on the Saturday afternoon on 20 metres. Somewhere about fifteen thousand persons moved through the Exhibition during the week. In all quite a worthwhile venture even from our angle judging from the interest shown in the working model. Our thanks must go to Roy 7RN for the loan of his tx and rx.

I sincerely hope all our VK7 boys at least got their log sheets posted in time to be counted. I heard on the grapevine that VK8 land is a bit scared this year as there were a lot more VK7s working this year. Keep your fingers crossed chaps.

Some of our associates are still attending the Ulverstone Technical School where Dennis 7DR is gallantly driving home sufficient gen to enable them to have a shot for a ticket. Stick to that c.w. chaps.

Our usual monthly meeting was held on the 1st Sept. whereat our Zone President, Frank 7FI, gave an interesting talk on noise and ways and means of waging war on same (I mean unwanted noise) as far as we Amateurs are concerned.

We have experienced one or two aural displays during the past month and it is quite interesting to operate and listen whilst such a disturbance is taking place. The behaviour of the bands is absolutely unpredictable during such times.

We didn't have much in the way of gear for disposal at the Sept. meeting, in fact only one lone article and same was duly dealt with with much ceremony. After supper the meeting broke into small groups discussing various theories and experiences and all dispersed eventually at a really reasonable hour for a change.

The phone net of the W.I.C.E.N. is still meeting each Sunday evening and our usual zone net on Tuesdays is still proving popular, but don't forget the time chaps, 1930 hours, not 2000 hours.

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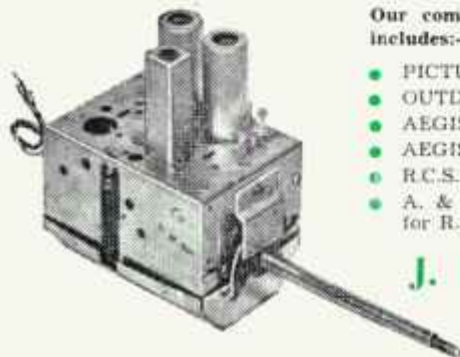
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3030	4742.5	6106	7706.66
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3280	4870	6240	7930
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3450	5020	6440	8012
3460	5095	6450	8014
3467	5166	6473.33	8015
3515	5180	6497	8075
3522	5180	6506	8171
3532.5	5205	6522	8175
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EDITORIAL



Television Interference and the Amateur Service

Prior to the introduction of the Australian television service the W.I.A. envisaged the probability of interference to viewers by Amateur transmitters, other frequency users and electrical apparatus generally. With this in mind it sought the opportunity to submit information to the Royal Commission on Television.

In actual fact the number of cases of interference by Amateur transmissions have, until recent date, been very few. However, over the past few months there has been quite an increase in t.v. interference, the majority of cases being due to 50 Mc. transmissions and also from v.h.f. and h.f. transmissions in fringe areas. The problem is essentially one of public relations—the manner in which the Amateur approaches the problem and the way in which the viewer receives his efforts to eliminate the interference.

There are two areas of interference—(a) areas essentially serviced by the existing television transmitters, and (b) areas which we call fringe areas not specifically serviced by the existing television transmitters. There are many forms of interference, of course, but our own transmissions which interfere with t.v. is our particular problem. As far as we are concerned our transmitters must be t.v.i. proofed, free from harmonic radiation and generally constructed and operated in such a manner that radiation of other than the desired frequency signal is not possible. That's fair enough and is in line with the regu-

lations governing the operation of Amateur transmitting stations.

But, unfortunately, the problem does not end there in actual practice, for under certain conditions interference is occurring—particularly around 50 Mc.—which is attributable to lack of selectivity in the t.v. receiver "front ends" rather than by reason of incorrect operation of the transmitting equipment. The problem is difficult enough in areas essentially serviced by the transmitting stations, but is greatly aggravated in fringe areas where the received t.v. signal is weak.

It is quite a problem to solve because on the one hand the public spend upwards of £150 in serviced areas and upwards of £400 in fringe areas and naturally enough consider they have the right to obtain interference-free reception; on the other hand the Amateur spends many hundreds of pounds and, providing he is satisfied that his equipment is operating within the conditions governing his license, he rightly considers he should be able to pursue the hobby in which he has participated over the years when there was no television service. In both cases the Postmaster-General's Department accepts a license fee (including fringe areas) but in the case of the Amateur it is £1 for some 3,800 license holders compared with £5 for thousands of t.v. viewers.

For the Amateur to adopt a "stand-over" attitude as much as to say, "I was here first," is fundamentally and democratically wrong. On the

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Modifying the AR8 Receiver

G. F. JENKINSON,* VK3ZFA

THE purpose of this article is to describe some modifications to well known R.A.A.F. AR8 Aircraft Receiver which the author has carried out and which have very considerably improved the performance. The main modifications are:—

- (1) Addition of a noise limiter.
- (2) Alteration of the audio system.
- (3) Addition of a magic eye and/or S meter.
- (4) Changes of valves in the h.f. unit.
- (5) Use of a Q multiplier.

DETAILS

The first step is to disconnect the three front-panel controls which are not required for Amateur use. These are: "Traffic-DF-Sense" switch, "Sense Resistance," and "Bearing-Reciprocal" switch. The leads for the latter two can be disconnected and put out of the way, but the leads to the rotating contact and fixed contact which is used in the traffic position must be lifted clear and joined directly together. The "Traffic-DF-Sense" switch is not used in the following modifications, but can conveniently be used as a transmit-receive switch.

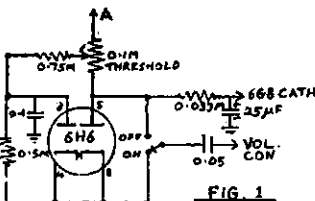
The two-pin outlet below the "M/F AE Tuning" knob is disconnected, and can be used as a speaker socket.

The bakelite aerial socket is replaced by a v.h.f. coaxial socket to allow coaxial cable to be used. However, this socket is such that a normal "banana" plug can be inserted if required.

The two power cable sockets can be conveniently removed and the lower hole be used with a more convenient type of power plug. The upper hole can be used for a magic eye (see modification 3).

(1) NOISE LIMITER

This uses a 6H6 (or 6AL5) valve (see Fig. 1). This valve and most of the associated components can be mounted on a small bracket below the m.f. switch (band-change) and coils. The heater power for this valve and also the magic eye were obtained, in the author's receiver, from the supply which had originally fed the 6X5 front-end protection valve. (The heater line was left wired for 12v. and thus the 6H6 plus 6U5 magic eye drew 0.6 amp. and made up for the removal of the 6X5 which alone drew 0.6 amp.)



The "Bearing/Reciprocal" switch was used for the noise limiter on-off switch, and the "Sense-Resistance" pot. was replaced by one of 100K ohms and used for the threshold control.

It should be noted that for good noise limiter performance the cathode bypass of the 6G8 audio amplifier should be increased from its original value of 0.05 µF. to 10 or 25 µF.

The connection to point A of Fig. 1 (i.e. to the bottom of the secondary of I.F.T.4 (T3) must be made to one of the terminals at the top of this transformer, as the transformer contains some resistors and capacitor in its can, and the bottom terminals connect to point A through a resistor. An ohm-meter reading between 6G8 pin 5 and one of the "unused" terminals on the top of the last i.f., which reads 7 ohms, will give the terminal to use.

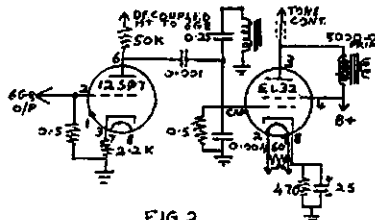
A coax cable is run from the point found above, through a hole drilled in the chassis for the purpose, to the threshold pot. on the front panel.

The shielded lead to the tag, one around clockwise from the tag connected to the plate of the last 6U7G on the last i.f. transformer, should be disconnected (open-circuited) at this point or at the other end of the shielded cable.

This noise limiter circuit is the one which is used in the AR88 receiver and seems capable of giving very good results.

(2) AUDIO MODIFICATIONS

To make up for a loss of audio gain caused by the noise limiter, the author added another audio stage after the 6G8. This was a 12SQ7, but with rearrangement of heater supplies other valves could be used, e.g. 6SQ7.



The amplifier (see Fig. 2) is mounted on the socket previously occupied by the 6X5.

To drive a speaker more efficiently, the 6J7 output tube was changed to an EL32. The output transformer used for the 6J7 was removed completely. B+ and plate leads from the EL32 were run, in the author's receiver, to the loop aerial socket. (The output transformer was mounted on the speaker.)

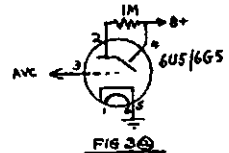
The EL32 was chosen for the output valve because this requires only 0.2 amp. heater current, and thus the addition of a 60 ohm resistor across the heater socket connections was all that was needed to balance the heater current back to the correct value. (Circuit is given in Fig. 2.)

An audio filter was also added to the audio section (see Fig. 2). The choke used was a small speaker transformer with the paper removed from the air gap in the core and the plates interleaved. The value of capacitor is best

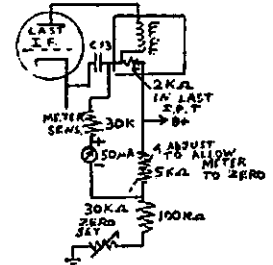
found experimentally. The filter in the author's receiver is a high-pass type with a low frequency cut-off of about 200 cycles. This improves the readability of weak signals.

(3) MAGIC EYE and/or S METER

A magic eye (6U5/6G5) was mounted behind the spare hole on the front panel which resulted from the removal of the original "power" and "junc. box" sockets. The 6U5/6G5, together with the 6H6 noise limiter, made up the heater current to the value originally taken by the 6X5. For circuit see Fig. 3a.



While the magic eye was useful, it was felt that an S meter would be more valuable. A simple meter measuring plate current was considered but rejected because it read backwards and only a small section of the scale could be used. However, a glance at Fig. 3b will reveal that by using about three resistors and a pot., plus the meter, the S meter is forward reading, can be zero set to any desired level, uses the full scale, and can be set to any desired sensitivity (e.g. no signal reading zero, and full scale reading at S9, or full scale at S99!!!)



The meter used was a 50 µA. temperature gauge. However, any sensitive meter could be used with slight resistor changes. The meter was mounted away from the receiver.

The zero-set pot. was mounted at a convenient point at the back of the receiver.

(4) H.F. UNIT

It was felt that modern valves in this unit would improve the performance, and this was found to be the case.

Adaptors for plugging the miniature valves into the octal sockets were made by mounting the appropriate miniature socket on an octal plug (e.g. a discarded valve base).

Where the grid lead originally went to the valve cap, a flying lead was run from the adaptor to the appropriate tuning gang lug.

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R.F. Stage.—The 6U7 can be conveniently replaced by the noval valve 6BY7 which has very similar operating conditions to a 6U7, but a higher mutual conductance, and lower noise figure. No circuit changes are required.

Table of connections:

6U7		6BY7	
Octal Plug	Connect'n join to Pin	Noval Socket	Noval Socket
1	—	—	—
2	Heater	5	5
3	Plate	7	7
4	Screen	8	8
5	Suppressor	0	0
6	—	—	—
7	Heater	4	4
8	Cathode	6, 1, 3,	6, 1, 3,
Cap	Grid	centre spigot	2

Mixer Stage.—This is a 6A8 and in the author's receiver this was changed to a 6AJ8/ECH81. A 6AN7/ECH80 could also be used, but has different socket connections. Once again, no circuit changes were found necessary.

It should be noted that the signal grid in a 6A8 is grid 3, but in a 6AJ8, grid 1.

Table for 6A8—ECH81:

6A8		ECH81	
Octal Plug	Connect'n join to Pin	Noval Socket	Noval Socket
1	—	—	—
2	Heater	4	4
3	Plate	6	6
4	Screens	1	1
5	Osc. Grid	7	7
6	Osc. Plate Grid ignore	—	—
7	Heater	5	5
8	Cathode	9, 8, 3,	9, 8, 3,
Cap	Signal Grid	spigot	2

Oscillator.—In the author's receiver this was a 6V6, and trouble was experienced with the oscillator not working reliably at the low end of range F. The circuit was checked and many 6V6s tried, without improvement. The trouble appeared to be due partly to low heater voltage. The oscillator was then changed to a 6AS6 (or 6AK5) (both of which are miniature 7-pin types). This made the oscillator perform very well on all h.f. bands.

The only circuit change required is to connect a 25 ohm 3-watt resistor across the heater pins (2 and 7) inside the receiver itself to make up for the difference in heater current between the 6AK5 or 6AS6 (0.175a) and the 6V6 (0.45a.). With no other circuit changes the 6AS6 is running close to maximum ratings, but seems quite satisfactory.

Table for 6V6—6AS6 (or 6AK5):

6V6		6AS6	
Octal Plug	Connect'n join to Pin	Min. 7-pin Socket	Min. 7-pin Socket
1	—	—	—
2	Heater	3	3
3	Plate	5	5
4	Screen	6	6
5	Grid	1	1
6	—	—	—
7	Heater	4	4
8	Cathode	2 and 7	2 and 7

Do not forget the heater resistor!

The receiver should then be re-aligned and the split rotor plates of the oscillator section of the tuning gang be bent slightly if the tracking is found to be out between dial reading and frequency received.

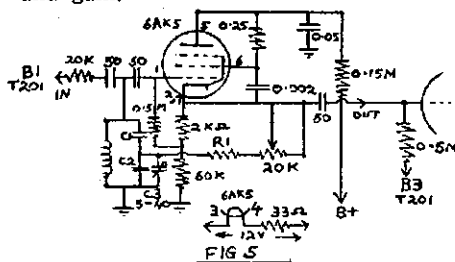
Note.—The intermediate frequency is 755 Kc. and thus to receive b.c. band stations near this frequency, the i.f. must be set accurately. It is suggested that the signal generator frequency be checked against the nearest b.c. station in frequency, e.g. 3LO on 770 Kc. A list of b.c. station frequencies is contained in the W.I.A. Call Book.

(5) Q MULTIPLIER

Generally this is a regenerative device somewhere in the i.f. strip, the amount of regeneration being controllable. Just before oscillator occurs, the device exhibits a very narrow peak in its frequency response, and if coupled into the i.f. strip can be used to peak or minimise a narrow band of frequencies.

For the AR8, a transistor Q multiplier was first tried. This was coupled to the receiver by only a single coaxial cable which went to the mixer plate. This gave a fairly narrow notch in the response. It was, however, rejected, mainly because it lowered the receiver gain considerably.

A valve circuit (Fig. 5) was then tried. This worked very well, exhibiting a very sharp peak just before oscillation occurred. This peak was sufficiently narrow to make phone copy unpleasantly deep and unintelligible. By reducing the feedback, the bandwidth could be increased to anything required. Also, with the Q multiplier set for good selectivity, the receiver gain was greater than without the Q multiplier, i.e. the addition of the Q multiplier leads to increased selectivity and gain.



The connections to the Q multiplier were taken to the top of the first i.f. transformer (T201). The lead into the Q multiplier (which was built in a small "jack box" and sat on top of the receiver) was taken from the top contact of T201, which went, previously, to the 6U7 1st i.f. grid. (This coil connection is contact B1). The output of the Q multiplier was taken by another length of coaxial cable straight to the 1st i.f. amplifier cap, and to give a d.c. return to this valve grid, as well as a.v.c., a ½ meg. resistor was run from the grid cap to contact B3 of T201. This contact goes to the cold end of the secondary, directly, and thus there is decoupled a.v.c. voltage at this point. Contact B3 is two positions clockwise round from B1, B2 being just a hole.

The Q multiplier must be the first i.f. valve. Resistor R1 is chosen so that oscillation occurs when most of the 20K ohm pot. is shorted out. (R1 is 2K ohms to 20K ohms.)

The tuning coil is chosen, along with C1 and C2 (which are about equal in value) to tune to 755 Kc. with capacitor C3 at mid position. The coil used was one of the windings of an old wooden-

cored 455 (?) Kc. i.f. transformer. The frequency can be checked by a g.d.o. If the g.d. oscillator will not tune down to the required frequency, a simple way to use it is to connect a spare tuning capacitor across the pins of the coil by twisting the wires from the capacitor around the appropriate coil pins. This capacitor can then be tuned for a dip, as usual and the frequency be determined by locating the signal on a receiver and reading the receiver frequency. (Make sure the receiver is not tuned to a harmonic of the grid dip oscillator, by listening on frequencies which could give harmonics on the observed frequency.)

To prevent disturbing the main heater line, the Q multiplier was run from 12v. through a 33 ohms dropping resistor.

Note that the AR8 normally has no d.c. return to chassis for the heaters.

BOOK REVIEW

"G.E. TRANSISTOR MANUAL"

This booklet contains information in the following three topics: (1) Semiconductor device fundamentals and principles of application (approx. 60 pages); (2) Typical, practical circuits (approx. 50 pages); (3) Specifications of G.E. devices (approx. 50 pages).

The semi-conductor devices discussed are junction rectifiers, simple junction transistors, unijunction transistors (double base diodes), controlled rectifiers (hook transistors), and tetrode transistors.

After a disappointingly brief introductory chapter on "Basic Semiconductor Theory" the various devices are discussed in terms of their application. This is, of course, a sensible enough classification but, unfortunately, the obvious multiplicity of authors results in differing standards of presentation from one chapter to the next. Even more important is the failure to integrate the treatment of the various devices in terms of those fundamental factors which are common to all. For example, on page 15 under "Biasing", the temperature dependence of I_{co} is mentioned without any explanation or elaboration, whilst forty-nine pages later under "Transistor Switches" there appears a very worthwhile discussion of the origin and rate of increase of I_{co} . This chapter on "Transistor Switches" is the best and most complete section of the book but is not likely to be of great use to people interested in communication engineering.

The chapters on "Basic Amplifiers", "Hi-Fi" Circuits, and "Radio Circuits" are little more than collections of practical circuits which have been prepared with "reasonable care . . . although no responsibility is assumed . . . for any consequences of their use." These chapters will be of little use to the man who desires knowledge on the essentials of transistor operation and basic circuit technique.

Furthermore, the 50 page specification section will be of very limited use to Australian readers.

This Third Edition published by the General Electric Company, Semiconductor Products, 1224 West Genesee St., Syracuse, New York, is priced at £1 Australian.

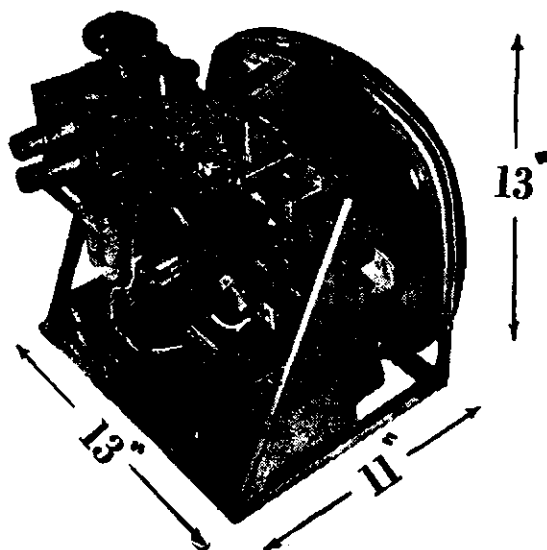
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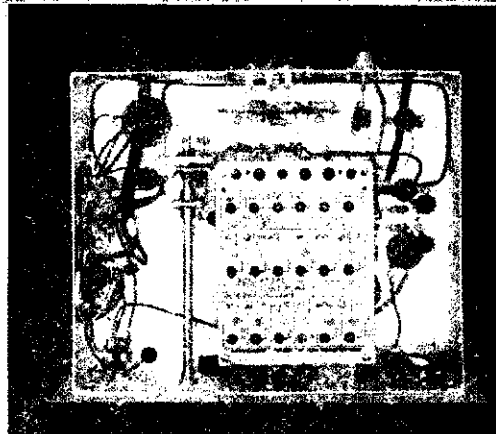
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THE GELOSO RECEIVER FRONT END UNIT



The dial mechanism provides a 72:1 reduction from an epicyclic motion with a nylon cord drive. The cord is spring loaded, giving positive action and preventing backlash. No cut-and-try method of adjusting the drive cord is necessary as the exact length is supplied, correctly terminated on the loading spring.

The size of the coil unit is approximately $5\frac{1}{2}$ " x 4" x $3\frac{1}{4}$ " deep and is designed for mounting below a chassis. The dial is $8\frac{1}{4}$ " x 5" and the minimum panel height requirement for the assembly is $8\frac{1}{4}$ ".

THE CIRCUIT

This uses modern type valves—6BA6 (r.f. amplifier), 12AU7 (oscillator and buffer) and 6BE6 (mixer). One interesting feature is the employment of a double triode (12AU7) in the oscillator circuit. The first half is run as the oscillator and the second half as a cathode follower buffer stage. This prevents any pulling of the oscillator frequency by the aerial and mixer circuits.

Fig. 1 shows the complete circuit required to build a compact converter which will impart to an old receiver modern performance, with an excellent signal-to-noise figure of better than 6 db for 1 microvolt input.

The power requirement of the unit is 230 volts at 45 mA. with 150 volts and 6.3 volts a.c. of 1.65 amp. From Fig. 1 it will be seen that the 150 volt stabilised supply may be obtained from an OA2 valve.

A buffer stage (6C4) is included to provide a low impedance cathode follower output and permits a convenient connection to the antenna circuit of the following receiver by means of coaxial cable (maximum length, 80 inches).

An r.f. gain control is provided on the unit, consisting of a variable negative voltage of -1.7 to -20 volts.

An interesting feature of the circuit is the provision of an additional wafer at the rear of the coil unit for adjusting the screen voltage to the 6BA6 r.f. amplifier valve. It will be appreciated that the performance of most valves is better at 3.5 Mc. than at 30 Mc. and this ensures that the sensitivity of the unit is the same on every band, and is invaluable for correctly calibrating an S-meter.

MAKING THE COMPLETE CONVERTER

The design using the Geloso coil unit and dial assembly shown in the photographs was based upon a 18 s.w.g. aluminium chassis 10" x 8" x $3\frac{1}{4}$ " deep and front panel of 11" x 9 $\frac{1}{2}$ ". The coil

The actual dial drive is one of the neatest ideas seen for a long time. The shaft from the knob is actually a 5 to 1 ratio planetary drive. This is then coupled to a 4-inch drum by means of a nylon cord. One small criticism of the tuning is the size of the knob. One about twice the diameter is needed to give the right feel.

We fed the converter into receivers ranging from a 122 set and a Type 3 to an AR88. Naturally the selectivity characteristics and gain varied from set to set, but overall performance was essentially the same with all.

To sum up, several of the committee members were heard to comment, "You can leave one in my shack any time."

Although only the component parts are available at present, a complete kit for the converter unit, including power supply, chassis, cabinet, etc., will be obtainable at a later date.

We are indebted to R. H. Cunningham Pty. Ltd. for the opportunity of testing this fine unit.

—PUBLICATIONS COMMITTEE.

★

MANY readers of "Amateur Radio" have, during the past two years, built the famous Geloso Exciter units into a transmitter and, at reasonable cost, have obtained excellent results with a "professional" finish. Now available in this country is the Geloso Receiver Front-End Unit, which is as used in the G209-R Double Conversion Superhet.

This unit consists of the following parts:—

- (1) Coil unit—type 2619;
- (2) Dial assembly—type 1649;
- (3) Variable gang condenser—type 2791;
- (4) I.F. Transformer—type 701/A;
- (5) Aerial trimmer condenser—type 8475;
- (6) Oscillator trimmer condenser—type 80173.

The coil unit itself is ready wired with valve holders, resistors, condensers, wavechange switching, etc., only requiring external connections for h.t., i.t., gang condenser, i.f. transformer, a.v.c. and aerial. The i.f. is at 4.6 Mc. bringing the unit on to almost any shortwave receiver, and each Amateur band is spread to give the following frequency coverage:—

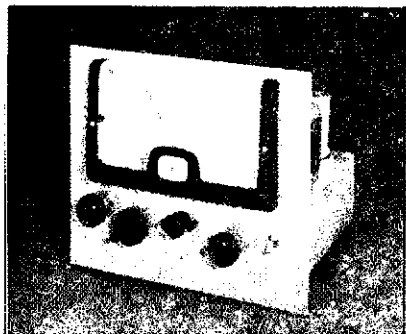
10 Metres	28.0 to 30.0 Mc.	Band 1
11 "	26.0 to 28.0 "	" 2
15 "	21.0 to 21.5 "	" 3
20 "	14.0 to 14.4 "	" 4
40 "	7.0 to 7.3 "	" 5
80 "	3.5 to 4.0 "	" 6

A trimming adjustment is provided for every coil in the unit and is clearly marked with adjustment frequency figure. The unit can, if desired, be built directly into a receiver using a second mixer to convert to, say, 465 Kc., or may be assembled as a converter, and fed out at 4.6 Mc. to a receiver such as a BC348, BC342, or AR8.

WHEN ever a new Amateur receiver hits the Australian market, it always creates a lot of interest and curiosity. In this case the interest is two fold, as R. H. Cunningham Pty. Ltd. have not only released a new receiver, the Geloso G209-R, but also in kit form the coil box, tuning condenser with dial and drive mechanism, aerial trimmer, oscillator trimmer, and a 4.6 Mc. output transformer of this receiver. This kit can form the basis of a good receiver, either as a converter fed into any receiver that tunes 4.6 Mc., or as a front-end for a home-brew i.f. strip, detector, etc., and audio.

The Publications Committee have recently had the opportunity of testing one of these kits which had been built into the converter unit described herewith. We must admit that this is one of the more pleasant duties associated with producing the magazine.

Of course the first question everyone will ask is just how well does it perform? Sensitivity figures have been published on the 209-R receiver and naturally these figures apply also to this converter. Unfortunately, figures of this kind cannot always convey just how signals sound coming through the speaker. After an extended test on ten metres (how does your receiver sound on ten?), we can definitely say that it is in the "hot" class. Conditions on the band were anything but good. However, the signals there stood out well with



Prototype of the Geloso Receiver Front End Converter Unit.

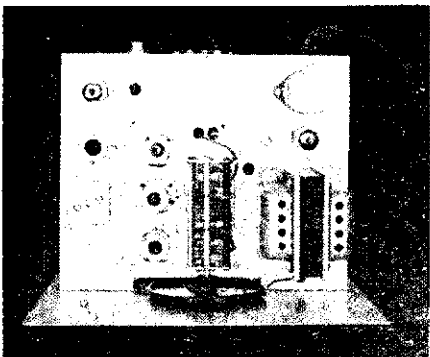
Controls (left to right): R.F. gain, tuning, band selector, aerial trimmer, h.t. switch.

little background noise. This test was made on a wire antenna and not a beam. Frequency stability was adequate for good s.s.b. reception on 10 and 15 metres. Naturally though, this is dependent on just how well you build this unit in, and how stable is the receiver the converter is fed into.

For the sideband enthusiasts the tuning rate will be of interest. The following figures apply to Australian frequency band allocations: 80 metres, 19 turns; 40 metres, 15 $\frac{1}{2}$ turns; 20 metres, 26 $\frac{1}{2}$ turns; 15 metres, 26 turns; 11 metres, 4 turns; and 10 metres, 32 turns.

unit is mounted below chassis, cutouts are made for the valve-holder skirts to protrude through the top of the chassis. Holes are required for the coil unit connections to pass through the chassis to the gang condenser, mounted on top of the chassis.

The general layout of the other components can be seen in the photographs and their exact position can be determined by the user.



ASSEMBLY

First mount and wire all components with the exception of the coil unit, tuning condenser, dial and front panel. The epicyclic drive can now be mounted on a bracket and before screwing the bracket under the chassis slip two turns of drive cord over the drive spindle and locate them around the thin section of the spindle, immediately in front of the brass bush. Mount tuning condenser on feet and secure to top of chassis. Fit in coil unit and antenna trimmer on bracket under chassis. The remainder of the wiring can now be completed. The front panel can be secured in position and the dial mounted. Before fitting the escutcheon to the dial, mount the dial light assembly and push the pointer into position on the tuning condenser spindle. Make sure that the pointer is horizontal at just below 28.0 Mc. with the condenser vanes fully in mesh. Check that the dial drum is correctly located on the condenser spindle and that the pointer will turn 180°.

TESTING AND ALIGNMENT

Check all wiring and fit valves. Connect the output of the converter to the aerial input of the receiver and tune to 4.6 Mc. Connect the converter to mains and switch on.

At this stage it would be advisable to check voltage points in the converter. H.t. +230 v., stabilised h.t., screen 6BA6 network, and heaters.

All coil units are checked by the manufacturer before despatch and are usually not very far off. Alignment can best be accomplished by using a signal generator, but this is by no means an absolute necessity if a local transmitter can give a few "spot" frequencies on different bands—or a good station frequency meter is available. In the latter case, an aerial should be connected to

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the aerial socket in place of a signal generator.

Commence by feeding 4.6 Mc. into the converter and peaking the i.f. transformer, then adjust the 4.6 Mc. trap for maximum attenuation. The remainder of the alignment procedure is quite straight forward as all the spot alignment frequencies are clearly marked at their respective trimmers or coil slugs on the underside of the coil unit.

Alignment should be done with the antenna trimmer in the mid position.

A.V.C. CONNECTION

If the user so desires, a.v.c. from their existing receiver may be connected to the converter. This can be accomplished to give maximum results by

retaining manual r.f. gain on the 6BA6 r.f. stage and applying a.v.c. to the 6BE6 mixer.

CONCLUSION

This new receiver front-end will improve the performance of many existing receivers. It combines the advantage of a double conversion circuit with improved signal-to-noise figures and increased sensitivity. The bandspread will really be appreciated by the operator with that good "surplus" receiver which lacks the bandspread on Amateur bands. So, with the availability of this unit, we can get performance at least equivalent to, if not better than, many modern communications receivers.

—H. V. Amor, VK3RD.

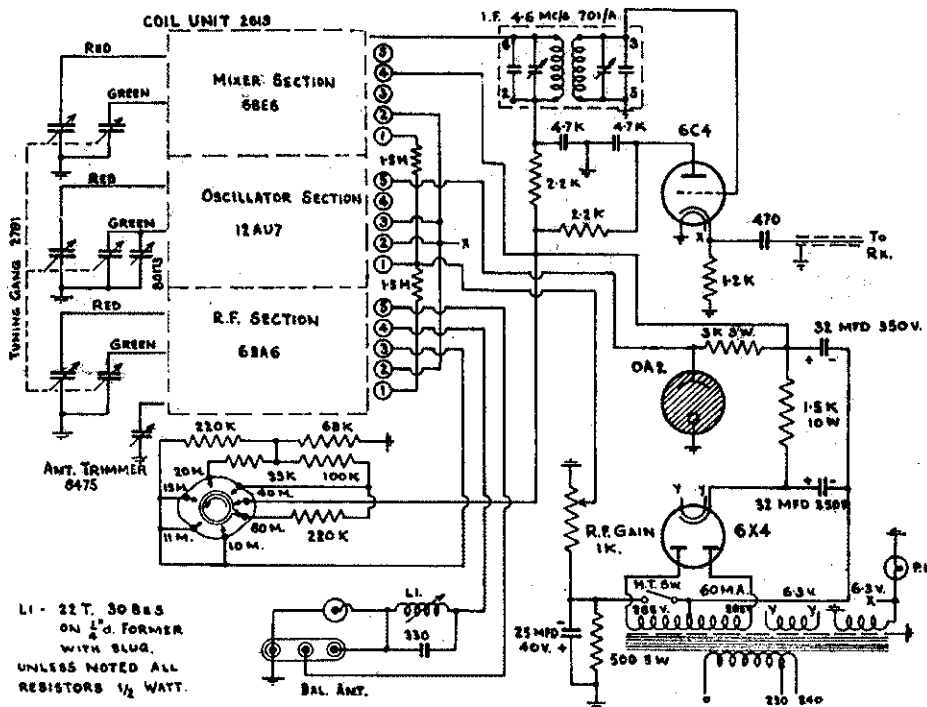


FIG. 1.

The modern practice of leaving the oscillator running during stand-by periods is a suggested amendment to the above circuit.

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The S-9'er Mark II.

THE magazine "CQ" in May 1956 carried an article on the S-9er, which used a 9-pin miniature t.v. cascode twin-triode, the 6BK7A, to replace and plug into the r.f. stage of any receiver using a 6SK7 or the like. This was a cathode coupled amplifier which gave excellent results noise-wise, with some loss of gain and a few reports of instability.

"CQ" for May 1959, pages 44 and 45, introduced the S-9er, Mark II., written by K5JKX, which converts the pentode r.f. stage into the cascode the twin-triode tube was designed for. Gain in this case was claimed to be equal to the replaced pentode, in fact in some cases better, and the stability was quite good.

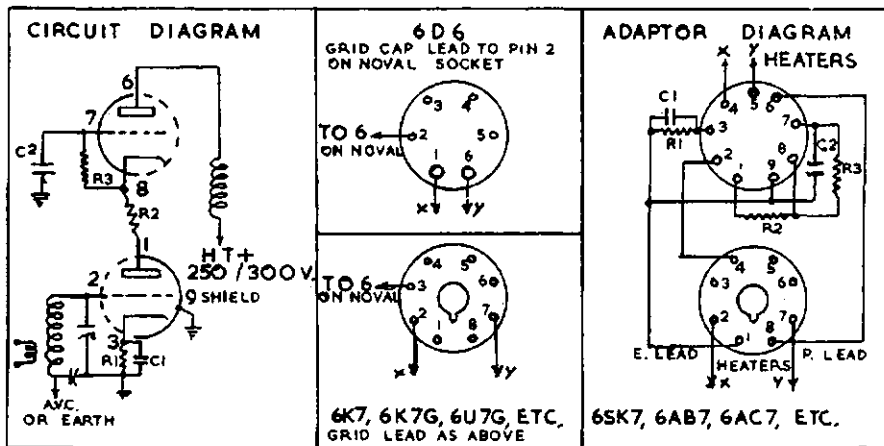
I made up both of these models and gave them a solid try-out, and without any doubt the Mark II. version more than lived up to the claims made for it. It has been tried in at least a dozen receivers, both commercial and home-brew, and the gain in at least two-thirds of them was increased by 6 db, and the improvement in signal-to-noise was immediately apparent on them all. Some instability was noticed in four of the receivers, but it was immediately cured by earthing the valve can, as suggested in the article.

It will be noted from the circuit that the cathode of the first section is returned directly to ground through pin one of the octal-based socket, thus removing the r.f. stage of the receiver from the normal gain control line and converting the gain control into a purely i.f. gain control, resulting in still more signal-to-noise ratio improvement.

If manual control of the first stage gain is desired, resistor R1 and capacitor C1 can be omitted and a lead run directly from pin three of the noval socket to pin five of the octal base, which will retain the original r.f. cathode circuitry. I personally tried both these connections and felt that the difference, if any, was not worth bothering about, and therefore the saving of two components is worth considering.

Well, now the pretence is over. This is not a technical article in the true sense, it is simple a re-write of an article in "CQ" which is without doubt a winner and nothing now remains but to give a few helpful hints gleaned from my actual experience with the converter in the thought that it may help to answer any remaining queries that might be in your mind.

Not all twin-triode tubes are worth using in the converter, for example the



Base and socket connections are bottom views. When replacing a 6D6, find which heater pin is earthed and connect to pin 9 on noval socket. The same applies to types 6K7G, 6U7G, etc., and for 6K7 metal, if pin 1 is earthed use this instead. Insulate all leads between noval socket and base with spaghetti sleeving.

Component values: R1—100 ohms 1/4w. carbon; R2—33 ohms 1/4w. carbon; R3—470K ohms 1/4w. carbon. C1 and C2—0.001 μ F. disc.

Components of the Mark II. include three resistors, two capacitors, a tube socket, an adaptor base and of course the tube. Any of the cascode designed twin-triodes will work well in the circuit, such as the 6BK7A, 6BQ7A, 6BZ7, and the 6BS8. This latter tube gives the best results mainly because of its freedom from cross-modulation and its extra gain.

With respect to the circuit, whilst measurements will show the difference between a coil-neutralised cascode and one using merely a 33 ohm resistor between stages, no difference can be detected in on-the-air tests and for that reason and also to simply the adaptor, the resistor was used.

12AT7 or the 6J6, for obvious reasons. The 6BQ7A works OK but is a little down in gain compared to the others; again for obvious reasons. The article stressed the point that in all tests, best results were obtained using 250 to 300 volts on the plate and lower plate voltages reduced the efficiency, and was not recommended.

In one or two commercial receivers which have the S meter circuitry tied up in the screen circuit of the pentode r.f. stage in a balanced network arrangement, naturally the S meter readings go all haywire. In this case, the circuit was used in a preselector set-up with excellent results and is mentioned only as a suggestion.

In closing, I would like to say that I don't want to talk you into making this converter up if you are satisfied with your present receiver's r.f. stage. If, however, you are looking for an improved signal-to-noise ratio, with no loss in gain, and a chance of some increase in gain, then this is it. The only catch to the whole set-up, as I see it, is whether or not you can get hold of a suitable tube. All of the tubes mentioned are listed in the latest tube manuals, but as they explain, that does not mean they are as yet available.

My thanks to K5JKX for a very interesting article and the opportunity to spend a number of pleasant hours testing the truth of his assertions.

—Warwick W. Parsons, VK5PE.

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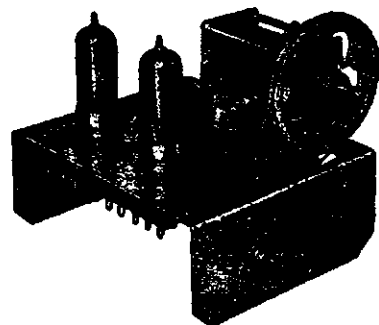
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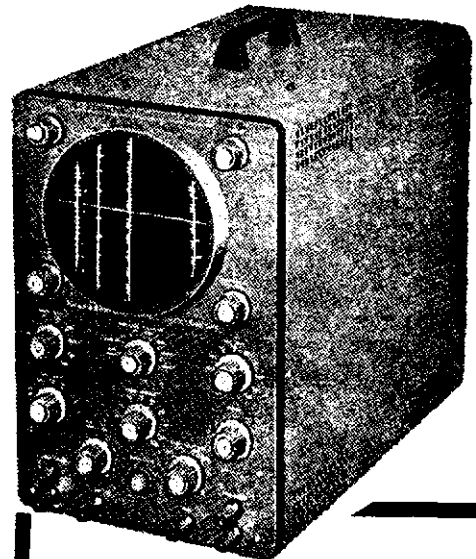
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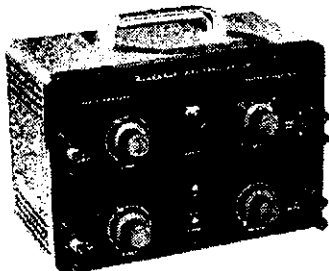


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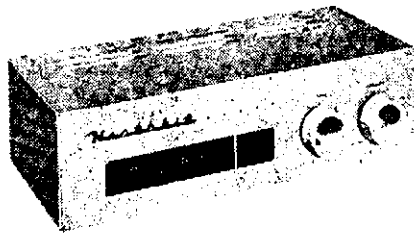
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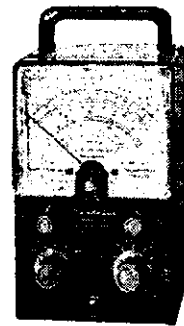
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GENEVA REPORT

SINCE my last report to you I have every reason to believe that the delegations at the Administrative Radio Conference in Geneva have been working very hard in pursuit of satisfactory agreements to all the problems being raised by the various countries—and there are plenty of problems.

As I mentioned previously, a great amount of information from the Conference is of a sub judice nature and I must ask you—as Australian Amateurs and members of the Wireless Institute of Australia—to believe me when I say that everything possible is being done at Geneva by Amateurs representative of many countries to maintain the Amateur frequency allocations insofar as that is possible against the extreme pressure from the commercial interests.

I can say this quite definitely, that the finalising of frequency allocations is a continuous process in which the entire spectrum is first of all reviewed in Committee Four (the Frequency Allocation Committee) and then sent to various working groups which study small portions, iron out differences and attempt to accommodate as many proposals as possible. From reading the pages of reports sent back to me from John Moyle, it is becoming increasingly evident that the pressures for more frequency space by all services in all countries is becoming greater as the Conference progresses and the full story will not be really known until the Conference is over and our representative returns to report personally to us.

It is quite useless, and most unwise, to make public a running statement on the progress of the various committees and working groups because the same ground is gone over many times and the decisions of any one group are often completely upset and re-opened at a later stage. Often lines of thought develop into discussions of a highly confidential nature in which the most delicate balances and confidences are involved. It is quite evident that the full picture will not be known until the end of the Conference, so it is not possible to forecast the final result or give final information at this stage.

However, initial decisions indicate that Amateurs in Region III. will probably lose 100 kc. off the top end of the 3.5 Mc. band, but the resultant band 3.5 to 3.7 Mc. will be exclusively an Amateur assignment whereas before it was shared with fixed and mobile services.

The 7 Mc. band is being hard pressed by all countries in all Regions for an exclusive Amateur assignment 7 to 7.1 Mc. and it is probably true to say that a footnote will be added that it is an exclusive assignment to the Amateur Service on a world wide basis and that countries will remove existing transmissions from this part of the spectrum. If this is the final result—and this is by no means certain—then we can expect to be in a better position than we were prior to the Conference.

An international telegram from John Moyle a few days ago stated that Australia has agreed to withdraw its proposal to reduce the 14 Mc. band currently used by the Amateur Service on a world wide basis. This is not a surprise because we forecast before the Conference commenced that it would quite possibly never get through the Geneva Conference and this was substantiated by members of the Frequency Allocations Sub-Committee at meetings which I attended with other members of the Federal Executive. As has been said so often during the past many months, the initial proposed frequency curtailments were only proposals and would have to be widely discussed by all countries before we could have lost them. Even now, the present position could change overnight, but it is heartening to know that at least initially Australia has agreed to withdraw its proposal regarding the most important DX band assigned to Amateurs.

Despite the pressure for frequency space in the bands between 3 and 30 Mc., there does not seem any likelihood that changes will be made to the present 21 Mc. band. The 28 Mc. band will also probably remain at 28 to 29.75 Mc. which is officially what Region III. has always had although the Australian Administration has permitted us to use up to 30 Mc. in the past.

As at the last report I received from Geneva, only preliminary discussions had taken place on the bands above 30 Mc. and there is nothing to report at this stage.

Looking at John's reports in retrospect, I am satisfied that the money raised to send our own representative to Geneva has been far from wasted, and the knowledge gained at a Conference of this nature will have been well worth the cost by the time the Conference concludes.

As John Moyle says, and I quote from part of one of his reports, "When extreme pressures are at work, particularly in the bands between 3 and 30 Mc., there isn't much sentiment where national interests are involved, and discussions frequently are converted into major political issues in the big plenary sessions. At the moment of writing there are more than 60 separate committees and groups functioning, and others are created and closed almost every day. The task of following even those in which we are mainly interested is very great, and it has been an education to me which I hope will be completely invaluable in helping us to understand and then handle our problems in the future."

You will recall from my earlier report to you that part of our brief for John Moyle was to investigate more fully the position of the International Amateur Radio Union today and what could be expected of it in the future.

At a meeting of some 60 Amateurs, he had the opportunity to discuss the I.A.R.U. and reports that he made quite a long speech concerning Region III's outlook and what should be expected of the Union during the next eleven years. John reports that he will have quite a lot to say about the I.A.R.U. when he returns.

I hope in the near future to be able to give you a more definite report on the probable outcome of the Conference where our bands are concerned. In the meantime I would ask you to try and appreciate the sub judice nature of proceedings at this stage and the danger of making public statements until confirmation of the final position is made known.

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"JUST LIKE 'QST' EXCEPT . . ."

Some Hints on the Stabilisation of Tetrode and Pentode Amplifiers

EDWARD P. TILTON, W1HDQ

THE four words of our title are encountered almost daily in mail handled by the A.R.R.L. Technical Information Service. They are also voiced frequently by visitors to the A.R.R.L. Lab., who tell us their troubles with equipment they've been building. Often it turns out that instability trouble these fellows have is the result of common misconceptions as to right and wrong methods of bypassing and grounding in tetrode and pentode amplifiers.

We neither expect nor want everything built from "QST" and the Handbook information to be exact duplication of the original. To be of greatest value, equipment descriptions should be used for ideas to be incorporated in gear of your own design. If "QST" and Handbook articles were used only for exact duplication they would not be making the most of the time and money spent on them. The important thing is to know what to change, and what to leave as the original designer made it. Methods employed in bypassing and grounding should be in the latter category.

To some extent each new amplifier represents a design problem. We would not have you believe that every transmitter or converter built in the Headquarters lab. is stable right from the start. But from long experience we have become well acquainted with some of the more common forms of instability. These have all been discussed at one time or another, but a summary may still be in order, especially in view of the fact that assembly details we will be talking about often do not come through well in photographs. Even an experienced builder of Ham gear may find it hard to know just where to put a by-pass lead or a grounding lug, no matter how well the pictorial and descriptive details are set forth in print.

Certain tubes have a reputation of being hard to tame. The 807 was such a dog for many Hams for years, and the evil reputation it built up, largely unjustified, is now inherited (with even less justification) by the 6146. It is true that tetrode and pentode tubes, having very high power sensitivity, may require neutralisation, but more often than not the trickiness involved in getting an amplifier to operate stably is the result of violation, by the designer, of certain cardinal principles. If you yearn for the "good old days" of easily neutralised triode amplifiers it may be that you've been building in some troubles for yourself.

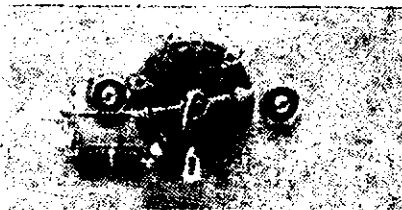
PUT THE SOCKET ABOVE THE CHASSIS!

Many a lab. headache has been relieved like magic by the simple expedient of taking out a socket that was mounted below the chassis and putting

it on the tube side of the chassis or mounting plate. This became really important when we started building transmitters that had to work on many bands without readjustment of neutralisation. Cause of the oscillation trouble with sockets mounted under the chassis is often the long plate-cathode return. This return cannot be made effectively via screws going through the chassis. The actual path (and you can often trace it by chassis "hot" spots) is around the edge of the chassis, or through some large hole. Some considerable portion of the chassis thus becomes common to both plate and grid circuits, and the resultant feedback is difficult to neutralise out.

144 Mc. and higher. Then some form of screen tuning becomes necessary. Examples will be found in all recent editions of the Handbook. Such circuits usually involve series-resonating the screen circuit to ground, to provide a path of lowest possible impedance.

Occasionally you will find a circuit in "QST" or the Handbook in which no screen bypass is shown. These bring inquiries as to whether an error was made, and what value bypass should be used. Diagram readers are accustomed to seeing screens bypassed, and they can't imagine it not being done. Sometimes the circuit is a frequency multiplier, and in that case it doesn't make much difference whether the



Models illustrating right and wrong methods for bypassing and grounding terminals of a 9-pin miniature socket. Both show Pins 4 and 9 grounded, with a cathode resistor and associated bypass capacitor connected to Pin 3. In the wrong approach, left, a wire is run from Pin 9 through the centre shield and Pin 4, to a grounding lug. The bypass is made from Pin 3 to the centre shield, making its path to ground common with other circuits. In the example at the right, the pins to be grounded and the ground lug itself are bent tightly against the cylinder and soldered in place. Bypass is grounded at the bottom of the lug.

This sort of thing may not be troublesome in an amplifier designed for a single band, though even here it may make the neutralisation job fussier than it should be. But in an amplifier for several bands the effect of coupling through common ground paths varies with frequency. Your amplifier requires neutralisation on some bands but not on others, or the degree of neutralisation cannot be set up right for several different bands. Having gone through this with more amplifiers than we care to recall, we now put the sockets atop the chassis first, instead of making ourselves an almost certain revamping job by mounting it in the "conventional" manner.

COOLING DOWN THE SCREEN

Once the socket is mounted above the chassis the method of bypassing is still important. The screen and cathode must be at zero r.f. potential or there's going to be trouble. The screen is the villain in some amplifiers that should be stable but aren't. To cool it off, bypass right at the screen terminal or terminals. If there is more than one screen pin, bypass each one separately right to the chassis, with no leads. Forget the old precept of a common ground bus, or a common grounding point. The chassis is the place to go with bypasses, and without any wandering!

Ordinary bypassing may be ineffective in v.h.f. amplifiers, especially for

screen is cold or not. Why waste a capacitor, in that event? At 220 and 420 Mc. several factors come into play that may make screen bypassing unnecessary. The screen-to-ground capacitance within the tube may be enough to do the job at these frequencies. More important, degeneration due to cathode lead inductance, and loading of the tuned circuits by the tube, may cut the power sensitivity of the amplifier to the point where self-oscillation is not the problem it is on lower bands.

THE HOT CATHODE

Oscillation troubles are often built into tetrode or pentode amplifiers by inserting a keying jack in the cathode lead. The cathode has to be cold, too; perhaps even more so than the screen. In the 50 and 144 Mc. exciters in the Handbook you'll notice that the 50 Mc. job has cathode keying; the 144 Mc. one does not. That's because small disk ceramics (probably the best v.h.f. bypasses available at low cost) are effective at 50 but not at 144 Mc. That 144 Mc. cathode (2E26 or 6146) could probably be cooled down by some special circuit tricks, but we found it simpler to resort to some other method of keying, and left the cathode grounded by the shortest possible lead, in the rig for the higher band. Grounding each cathode lead separately may be desirable with the 2E26 and 6146.

* Reprinted from "QST," March 1959.

NETTING

HEARDED on the 7 Mc. band quite frequently: "This is VK3XYZ standing by for VK5YZK". VK5YZK does not reply. "Another transmitter failure" we think. But no. Re-tuning we find VK5YZK 5 kc. higher in frequency.

Apparently in making contact one of these two stations has failed to net accurately and the result is:—

1. They are occupying two channels instead of one in a crowded band.
2. Their contact may be broken up by a third station coming up on the temporarily vacant channel of the station listening.
3. In replying off-frequency, one station may have inadvertently dropped on an adjacent channel in use by a weaker station.

No good at all.

But why and how do they do it? My guess is that either:

1. They switch on the whole transmitter to net, thus blocking the receiver for 10 kc. either side and tune the v.f.o. until the blocked bandwidth straddles the frequency they wish to net, or
2. They net by tuning the v.f.o. dial to the same frequency read on the receiver dial.

The generally accepted accurate method of netting is to switch on only the oscillator tube of the v.f.o. or such low power stages that the signal can be heard in the receiver without blocking it and zero-beat it with the signal of the station being received. It may happen then that when the final stage comes on, it pulls the oscillator to a new frequency, but if this causes more than a hundred cycles or so change, then an additional isolating stage is required in the v.f.o.

The necessary switching arrangements to bring in the oscillator separately are not difficult to design, but there are a few catches. At the first attempt at my station, switching on the oscillator plate also brought on the screen of a later stage without the plate of that later stage and this does not tend to long life of tubes.

A method of checking whether the oscillator is pulled when the final comes on is as follows: First, listening in the receiver, zero-beat the frequency meter-monitor to the oscillator signal. Then switch on the final and listen in on the monitor to see whether it is still zero-beat.

—J.A.G.

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BYPASSES THAT DON'T BYPASS

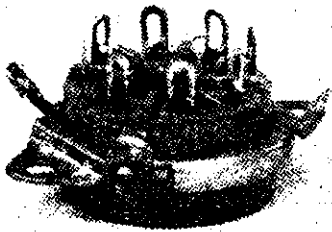
Oscillation troubles are not confined to transmitters, as any v.h.f. converter builder knows. And oscillation is not always where you'd expect to find it—in a pentode or neutralised-triode amplifier stage. We've seen quite a few "grounded-grid" stages that took off all over the place because the grid was not actually grounded. In several instances a wire lead was run from the cylindrical shield in the centre of a miniature socket to a ground lug at one or both sides of the socket. Bypass capacitor leads were connected to the cylinder, or to some point along the wire, rather than to the lug, right at the chassis.

The effect of r.f. voltage building up on a ground lead, perhaps no more than a quarter inch long, can be observed by running the stage in an oscillating condition, and then probing for hot spots with a pencil lead. If the stage is in a receiver, you can listen for scratching sounds. If it is a transmitter, watch the grid current in the offending stage.

least two hassles with sockets of this type in recent lab. experience, but this writer will have no more!

Quite a bit of new manufactured gear employs a device that was all but discarded years ago, the so-called wafer socket. In the days of the "low-loss" insulation craze we looked down our noses at anything but ceramic insulation. Now we know that most other insulating materials are good enough, at least in low-voltage applications, and that the physical construction of the socket as to lead lengths may be more important. The flat wafer socket has a distinct advantage in this respect. If the chassis is a material that will take solder readily, socket terminals to be grounded can be soldered directly to the chassis, resulting in much lower lead inductance than is possible with bulkier ceramic or moulded bakelite sockets.

From all this discussion it can be seen that there are more causes of instability than first meet the eye. With triodes the main cause of oscillation is



Tube socket with built-in grounding ring and four lugs (left) is an invitation to trouble due to common ground paths. Flange between lugs may not contact chassis, in which case connections made to lugs have long path to ground. Socket at the right necessitates grounding to chassis or to lugs under mounting nuts, making it possible to avoid common ground paths.

In a 50 Mc. transmitter built for the 1959 edition of the A.R.R.L. Handbook we ran into trouble with a 6146 stage that refused to neutralise. We tried several methods; each would come close, but not quite do the job. In this rig we had abandoned the principle discussed earlier and mounted the tube socket below the chassis, primarily to save over-all height. With just one band to worry about, we felt the calculated risk worth taking.

In this amplifier both the screen and cathode leads were hot. Touching the screen or cathode terminals caused a flicker in the small amount of grid current that persisted in the 6146 stage, when drive was removed. In desperation we pulled out the socket and put a different type in its place—and at once the capacity-bridge neutralisation system we'd been wrestling with for days neutralised the stage out as easily as anything we've ever worked with.

The cause of all the trouble was the same old bugaboo, common ground paths, in a somewhat different form. The socket was a popular make having a metal grounding ring in a slightly different plane from the ears that mount the socket to the chassis. There are four lugs extending from the ring that are intended for grounding points. They may be suitable for that purpose at lower frequencies, but in a v.h.f. amplifier the lugs and ring provide a built-in common path for the circuits grounded or bypassed thereto. We've had at

the considerable grid-plate capacitance of the tube or tubes. We neutralise this out with a capacitance that is approximately the same as the tube grid-plate capacitance, feeding back energy 180 degrees out of phase with that fed through the tube, and the job is done. The power sensitivity of triode tubes is low, so the neutralisation process is fairly routine. (We didn't think so back in the '30s, however!)

Tetrodes and pentodes have additional tube elements that keep their grid-plate capacitance at a very low value, usually under 0.1 pF. This in itself is seldom enough to cause trouble, but our layouts usually add other kinds of feedback. If we don't shield or otherwise isolate the input and output circuits there may be fairly large values of coupling between them, by inductive or capacitive means. Power leads, unless carefully decoupled, may provide common coupling. But even a perfectly shielded amplifier with adequate lead filtering can still have common coupling between the input and output circuits through the ineffective bypassing and grounding techniques outlined above.

And when all these factors are taken care of we still have parasitic resonances—but this started out to be a discussion of bypassing and grounding techniques. Squelching parasitics is another story, and one that is already covered adequately in the Handbook.

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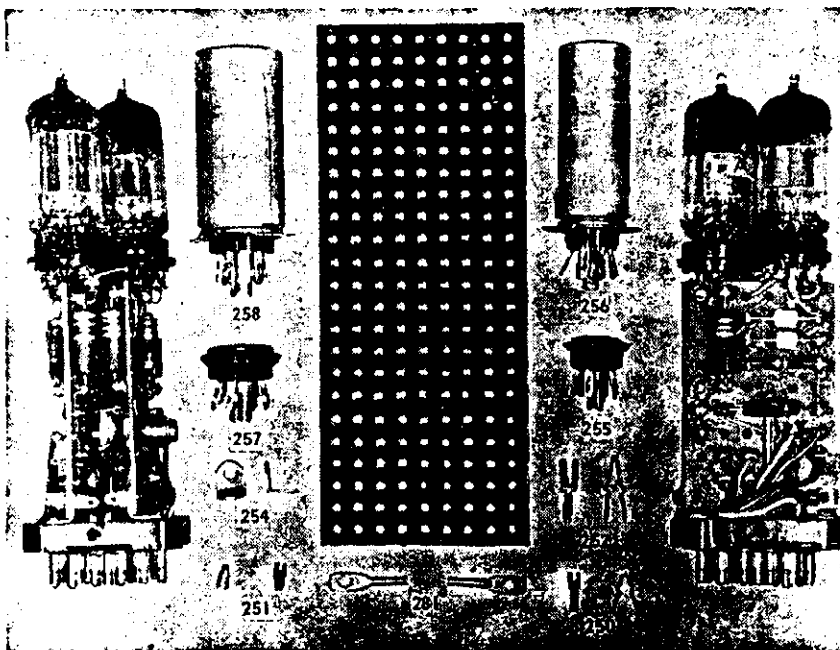
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I.T.U. FUND DONATIONS

Donations to the I.T.U. Fund closed on 31st July, but some more donations are still being received. All donations are welcome as our objective of £2,500 was not quite reached although being very close to it. Federal Executive wish to express their very sincere and grateful thanks to all who contributed in any way. Many subscribed two and three times and indicates the enthusiastic support this appeal received.

Our representative, Mr. John Moyle, is now in Geneva and is at present representing the cause for which this appeal was made—the Australian Amateurs' interests. Although the results of this representation may eventually appear to be obscure on the face of things, our resultant knowledge of the conducting of such Conferences and the contacts made there will be immeasurable.

The great lesson from this appeal is that when the Amateurs of Australia realise an ideal is worth fighting for, they will give their support to the cause. F.E. once again extends its thanks to each contributor and to the many officers in Divisions who gave their time and energies to administer the fund.

The list below acknowledges the contributions received to the 20th September:

- £38/17/0: New Zealand Amateur Radio Transmitting Society.
- £12/4/0: North Coast Zone, N.S.W. Division.
- £10/10/0: J. Clarke, VK2DZ.
- £6/16/0: Rockhampton Amateur Radio Club; North Western Zone, Tasmania.
- £5/0/0: R. J. Smith, VK2ARD; K. O'Rorke, VK3AKR; O. W. Guy, VK3ZGI; H. A. Stowe (N.S.W.).
- £3/18/0: J. R. T. Matthews (N.S.W.).
- £3/3/0: L. J. Case, VK2MU; A. H. Llewellyn, VK2AH; E. R. Chippindall, VK4XR; D. C. Price, VK4PG; W. J. Brimblecombe, M.H.R. (Qld.).
- £2-£3: J. E. Hills, VK2AJH (£2/18/0); Tasmanian Division £2/12/0; W. E. Olsen (W.A.) (£2/10/0); Short Wave Group, Victoria (£2/8/0).
- £2/2/0: R. Richardson, VK2ALR; J. B. L. Watt, VK2OV; J. Vesper, VK2PV; G. J. Boyd, VK2AML; K. N. Greenhalgh, VK2KG; L. W. P. Smith, VK2AWS; L. L. McInnes, VK3AMK;

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£2/0/0: C. Croke, VK2MN; D. Andrews, VK2AWZ; J. W. Porter, VK2AXP; N. McNabb, VK2ZCN; C. T. Ferris, VK4TW; J. Dalstead, VK3JD; J. Murray (N.S.W.).

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 W. Nickols (Tas.).
 Less than £1: H. Hanson, VK2AHH (18/-); W. Mill, VK2AHV (10/-); D. Fearsall, VK2ASA (10/-); E. Bailey, VK2BB (10/-); D. Sidey

EDITORIAL

(Continued from Page 1)

other hand the Amateurs should expect the co-operation of the t.v. viewer in eliminating interference which, in other than perhaps fringe areas, should be relatively simple if the Amateur transmitter is operating correctly. Therefore public relations is the most vital key to the problem as we see it, and it is up to every Amateur who becomes involved in t.v.i. cases to remember first and foremost the Amateur's Code.

This won't always be easy for we are experienced, from the early broadcasting days, with the attitude adopted by some members of the public. But we must look always first at their point of view and in a gentlemanly way see what can be done about it.

Currently some t.v. viewers suffering interference from Amateur stations neither approach nor permit the Amateur to carry out the necessary tests to eradicate interference, nor do they approach the Radio Interference Branch of the Postmaster-General's Department. They write or call directly on their local Member or a Minister himself. The result can be both swift and sure . . . the Amateur will be told to stay off the air during t.v. hours. It's happened in other countries, so it's nothing new in the Amateur service.

Unfortunately, the Amateur doesn't always know he is causing interference, particularly where the t.v. viewer will not co-operate, and he will be sometimes blamed for interference even when he is not on the air or hasn't been operating during t.v. transmission hours anyway. Of course, it's not fair! But that's the problem you are going to come up against. So what to do about it?

First and foremost, remember the Amateur's Code in dealing with the public. Secondly, see for certain that your transmitting equipment is not at fault in any way whatsoever. Thirdly, when co-operation is forthcoming from the t.v. viewer, see that your tests are carried out during test pattern transmission time and not during programme time; in this way you will not interfere with other viewers in the same area even if your immediate t.v. viewer is co-operating with you.

In the Divisions of the Institute, T.v.i. Committees will be formed where they don't already exist and they will be asked to forward complete details of all interference problems to the Federal Executive. The Federal Executive will suggest to the Postmaster-General's Department that a committee be formed representing all frequency users involved in t.v.i., manufacturers of t.v. receivers, and other electrical equipment guilty of interference if this is possible.

Remember the Amateur's Code.

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B. Pooley, VK5BP (10/-), G. Lucas, VK5LL (10/-); J. Gluyas, VK5ZAZ (10/-); J. Martin (10/-), R. Bamford (10/-), D. Gothard (17/6) (S.A.).

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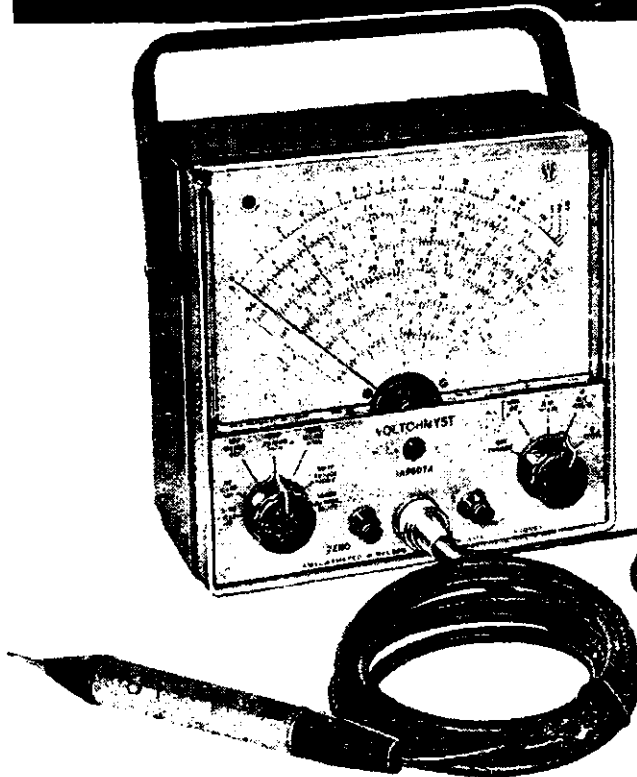
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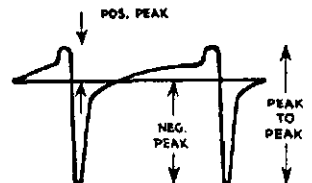


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Me. E. AUSTRALIA — W. EUROPE S.E.		Me.
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E. AUSTRALIA — MEDITERRANEAN		
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E. AUSTRALIA — S. AFRICA		
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W. AUSTRALIA — W. EUROPE		
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W. AUSTRALIA — N.W. U.S.A.		
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W. AUSTRALIA — N.E. U.S.A.		
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W. AUSTRALIA — S. AFRICA		
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W. AUSTRALIA — FAR EAST		
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CORRESPONDENCE

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

S.W.L.'s. IN VK6

Editor "A.R." Dear Sir,
I feel I must correct any wrong impression created by Mr. Hardwicke's letter in "Listener Notes," Sept. "A.R." re listeners in VK6.

Listeners in VK6 may gain the equal of Associate membership of the VK6 Division by joining the Short Wave Group of W.A. which is a member club of the W.I.A. (VK6 Div.). The annual sub. of 27/6 includes "A.R." (18/-) and full use of QSL facilities is granted. An Official Number WIA-L8 is issued on payment of the sub., which is sufficient to give the listener official status in any contest for which he may enter. The above conditions were agreed to by Mr. Hardwicke (President of the Group) at a meeting with Institute representatives before affiliation took place.

Listener-members enjoy the same facilities in the W.I.A. as I, a full member, enjoy, except that they have no vote in an ordinary Institute meeting. They do, however, hold meetings as a separate group.

Fees in this Division are: Full members, 35/- per annum; Associates, 30/-; Listeners, 27/6.

Will someone please enlighten me as to what way we are falling down on our job of catering for s.w.l.'s. in the West? What further "official recognition and privileges" do listeners in VK6 enjoy?

—R. ELMS, VK6BE.

P.S.—Incidentally, I am no longer Secretary of this Division, and the above letter should not be regarded as being the official view of VK6 Council. I was, however, one of those responsible for drawing up the conditions of affiliation.—R.E.

E.D. CONTEST

Editor "A.R." Dear Sir,
I think we all, whether listeners or operators, enjoy the R.D. Contest. We have a good old get-together, contact all our mates, or those chaps in other States whom we hear working DX, and in general the Contest in its present form is an event to be looked forward to and entered in the spirit which it is intended. But to suggest, as VK7ZZ has done, that the Contest be divided into two parts, is, in my opinion, most unnecessary. The c.w. section is not patronised to any extent and the average Amateur does not wish to use this form of communication, that is unless conditions make it necessary.

I think, Ian, you would find that the phone section would be patronised by the present regular contest men and the c.w. section would be virtually eliminated. To me there seems to be no point in altering the present set-up;

it is quite adequate. To bring in a separate c.w. event, which I admit would possibly ensure all participants getting a few more c.w. contacts than at present, would mean settling down to another 24 hours of activity, and this in the middle of winter is something which I for one would not be in as a listener or operator. The whole section would be treated as a separate contest by the chaps concerned, and just take a look at the Field Day entries to see the general attitude to Contests other than the main R.D. which appears to be the phone section.

I am strictly a c.w. man myself and when I get on the air later this year will be using that mode of transmission. However, I am not blind to the attitude of many of our members as far as code is concerned. It is not used, not wanted, and considered out-dated by so many of the members that to save all concerned a lot of trouble I say, "Leave the R.D. Alone."

—D. GRANTLEY, WIA-L2022.

A NEW SYSTEM

Editor "A.R." Dear Sir,
I think the constant battle for DX confirmation has gone on long enough; it has always been a wonder to me that there has not been some better scheme put into use. Let me say here, that I am only concerned with proof of a contact and not the collecting of QSL cards. That is a separate subject on which I venture no suggestions.

The confirming of all contacts is both expensive and time consuming. So much so, that I believe it limits the time that can be spent on the air by any rare DX station, unless he has a full-time secretary and a concession with the postal authorities.

It is not necessary to go on giving examples of the inadequacies of our present system as any DX operator undoubtedly knows all the pitfalls.

I believe that the adoption of a system, like I have in mind, would be a great help in clearing up all these problems.

My suggestion is that all stations keep a confirmation log and when a station asks for confirmation, it is entered while the QSO is in progress. Then when the sheet is completed it be sent to the A.R.R.L., or like body, for filing. When application is made for DXCC or similar awards, it would be a simple matter of cross checking. Possibly there could be a certificate issued on request, showing a list of your valid contacts. This could be covered by some small charge. This certificate should be accepted anywhere in the world as proof of a contact.

Well that's it. I realise there are numerous details in this system that would have to be overcome and many ways that the checking and filing could be done, but I think, once it was given some round-table discussion and got working, it would be a great asset to everyone.

—TOM TALBOT, VK6TH.

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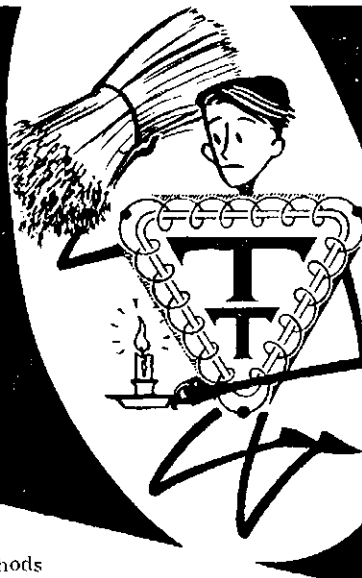
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2KK—K. E. McDonald, No. 86(T) Wing, R.A.A.F., Richmond.
2CX—V. E. Tierney, 8 Beach Rd., Edgecliff.
2PO—R. A. Reeks, 7 Wealer St., Carlton.
2UF—W. N. Barnier, 6 Bonner Ave., Manly.
2VV—R. M. Marsden, 43 Houston Rd., Kingsford.
2AIP—2 Division Signal Regiment, Army Wireless, Training Depot, Park Rd., Paddington.
2AIX—R. M. Harnett, C/o. O.T.C. Radio Station, Bringley.
2AKB—J. A. Bonnington, 36 Eloura Rd., Avonlea Beach.
2ALS—R. R. Longworth, 1 Holdsworth Ave., Wallstonecroft.
2AQM—J. T. Milton, Flat 1, Cr. Brown & Markham Sts., Armidale.
2AXB—E. Carruthers, Station: "Headingley," The Esplanade, Elizabeth; Postal: Box 1189, G.P.O., Sydney.
2AWV—P. C. C. Way, Flat 2, 132 Forsyth St., Wagga Wagga.
2AYZ—R. J. Spratt, 192 Yambill St., Griffith.
2ZAM—H. F. McTeague, 65 Clanalpine St., Mosman.
2ZBC—B. P. Cleaves, 21 Binalong Rd., Pendle Hill.
2ZBK—G. K. Batley, 15 Gazu Rd., West Ryde.
2ZDD—V. Molesworth, 87 Jersey Rd., Woolahra.
2ZHP—H. E. Jones, 7 Prospect St., Waverley.
2ZKO—K. V. Outten, 2 Lily St., North Ryde.
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2ZLP—D. L. Price, 239 Rusden St., Armidale.
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2ZOK—K. E. Oakley, 75 Grafton St., Goulburn.
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3ZID—R. A. Dobson, 6 Wood St., Mooroopna.
3ZJC—J. F. Chambers, 13 Keith St., Mordialloc.
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4DT—D. A. Fryer, 52 Cross St., Fairfield.
4SI—A. H. Sandilands, Station: O.T.C. Radio Station, Thursday Island; Postal: C/o. Royal Hotel, Thursday Island.
4TM—T. E. Meredith, 17 Davidson St., East Ipswich.
4VK—S. W. Grimsley, Station: North Rd., Beechmont; Postal: Charles St., Tweed Heads.
4WA—W. J. Barker, 14 Whish St., Windsor.
4ZCG—B. W. Bartlett, 35 Woodville Place, Annerley.
4ZCK—R. W. J. Hazell, Station: 70 Barton Rd., Hawthorne; Postal: C/o. Supervising Engineer, Radio Installations, G.P.O., Brisbane.
4ZCR—J. L. Boyce, 41 Ryland St., Grovely.
4ZFB—F. J. Beckett, 588 Flinders Pde., Brighton.
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6AY—J. E. Davey, 36 Ackland Ave., Clarence Gardens.
6AZ—B. E. Edwards, Wokurna.
6BP—B. R. J. T. Pooley, 13 Spruance Rd., Elizabeth East.
6FL—F. R. Lashmar, 92 Fleteher Rd., Largs Bay.
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6GQ—J. A. Hayward, 19 Phillip Highway, Elizabeth.
6GU—H. M. Meyer, Radio Workshop, R.A.A.F. Base, Darwin.
6JM—J. S. Danzig, Station: Knott St., Port Lincoln; Postal: P.O. Box 35, Port Lincoln.
6JX—M. J. Dew, 28 Norman St., Undervale.
6NZ—L. A. Lawson, 282 Anzac Highway, Plympton.

- 5OF—D. W. Avard, Mobile in South Australia (except Woomera area); Postal: C/o. De Havilland Aircraft Pty. Ltd., Box 1688, G.P.O., Adelaide.
5SK—S. S. St. George, 59 Crozier Ave., Colonel Light Gardens.
5TC—C. T. Rylatt, 10 Willow Ave., Findon.
5WD—R. A. Warner, 4 South Esplanade, Glenelg.
6ZW—M. H. Bone, 1 Dean Grove, Marrayville.
6ZCH—K. V. Hanson, 26 Langford Ter., Salisbury North.
6ZCN—J. T. Hart, 16 Nunyah Ave., Parkholme.
6ZCO—B. J. Southcott, 248 Beamont Rd., Beamont.
6ZCQ—G. M. Taylor, 16 Fairmont St., Black Forrest.
6ZCS—B. J. Purvis, 15 Main Ave., Frewville.
6ZCT—M. R. Burford, 85 Belair Rd., Panchito Park.
6ZDW—B. M. McDonald, Base Squadron, R.A.A.F. Darwin.
6ZEF—I. B. Fraser, Station: Russell Ter., Killkenny; Postal: Box 280D, G.P.O., Adelaide.
- Western Australia**
6RG—R. E. A. Grigson, 107 The Strand, Bedford Park.
- Tasmania**
7AO—R. K. Emmett, 6 Haig St., Lenah Valley.
7ZAR—R. A. J. Reynolds, St. George's Rectory, Battery Point.
- Territory of Papua and New Guinea and Other Islands**
9MV—V. E. Mathew, Christmas Island, Indian Ocean.
9TK—Rev. T. J. Keller, Catholic Mission, Kuru, New Ireland.
- Antarctica**
0GB—J. G. Bird, Mawson.
0IB—J. K. Black, Macquarie Island.
0IT—J. N. Thomas, Macquarie Island.
0JM—J. D. Mollie, Davis.

CHANGES OF ADDRESS

- VK— New South Wales**
2DR—N. Wilde, 153 William St., Bathurst.
2IN—R. C. Meadows, 2 Fortesque St., Chiswick.
2MK—L. A. Elphinstone, 34 Maccella St., Kingsgrove.
2QH—H. D. Howe, 50 McIntosh St., Gordon.
2RR—R. K. Try, Lot 4, Power St., Plumpton.
2YM—R. Hancock, 15 Boundary Rd., Pennant Hills.
2ZD—W. J. Leetch, 39 Cliff Rd., Epping.
2ZAF—A. J. Fisher, 2 R.A.R., Holsworthy.
2ZAR—E. J. Pickles, 611 Princes Highway, Kogarah.
2ZCV—G. G. Mulcahy, 45 Louie St., Padstow.
2ZDG—G. F. Griffiths, 5 Carrington Rd., Kempsey.
2ZDO—D. Batley, 76 Gordon St., Manly Vale.
2ZEM—A. E. Morales, 825 Elmore St., Albury.
2ZGE—G. A. Dowse, Pine Ave., East Ballina.
2ZJM—A. H. Bull, 55 Koola Ave., Killara.
2ZPA—A. F. Ashby, "White Cottage," 14 Bilkurra Ave., Newport Heights.
2ZPN—C. Nash, 107 Wyandora Ave., Harbord.
2ZAR—W. N. Short, 58 Auburn Rd., Auburn.
2ZATU—E. M. Cragg, 435 Coal Point, via Toronto.
2ZAV/T—W. B. Jones, 25 Beach St., Blakehurst.
2ZAXM—G. B. McDonald, 9 Bell Ave., Lindfield.
2ZCG—J. W. H. Grace, 16 Bondel Ave., Gymer.
2ZCL—R. F. Lopez, Married Quarters, No. 537 Lighthouse Pde., Holsworthy.
2ZDS—W. A. Sagers, Flat 2, 8 Dundas St., Coogee.
2ZEA—J. W. Ashley, Byng St., Holbrook.
2ZJJ—J. Jeffrey, Doyle Lane, Muswellbrook.
2ZMB—B. J. O'Sullivan, 62 Kellet St., Kings Cross.
- Victoria**
3GK—S. C. McLean, 204 Balacava Rd., Caulfield.
3HW—A. N. Horwood, 45 Edmonds Ave., Ashburton.
3JH—L. J. Richards, 1 Maria Ave., Nunawading.
3JV—A. C. Knight, 1 Photinia St., Doveton.
3KS—R. R. Prowse, 83 Brower Rd., Bentleigh.
3KU—B. D. Clark, Station: P.M.G. Radio Receiving Station, High Park, Kilmore; Postal: P.O. Box 8, Kilmore.
3MJ—W. L. Matters, 24 Waiora Rd., Rosanna.
3OD—D. Watson, 5 Caerleon Court, Heidelberg.
3VK—M. F. Spiller, 11 Harrison St., Ringwood.
3AAM—A. H. Sengotta, 71 Burrindi Rd., Caulfield.
3ABX—V. D. Bond, 11 McKenzie St., Colac.
3ADG—G. W. Kidson, Rutland Ave., Mount Eliza.
3ADR—A. R. Roy, Flat 3, 648 High St., Armadale.
3AGE—M. G. Esam, 18 Crawley St., Warrnambool.
3AGH—T. E. Page, 27 Nolan St., Niddrie.

- 3AHJ—R. J. Harrison, 304 Waterloo Rd., Glenroy.
3AHW—A. W. White, 60 Ross St., Dandenong.
3AJJ/T—H. R. James, C/o. H. E. Masson, 56 Lower Dandenong Rd., Braeside.
3AMK—L. L. McInnes, 7 Gwenda Ave., Blackburn.
3APC—Moorabbin & District Radio Club, 17 College Grove, Black Rock.
3AWZ—W. M. Zimmer, 18 East India Ave., Nunawading.
3AYR—F. H. A. McClymont, 1 Everard Drive, Warrandyte.
3ZFI—K. G. Bridger, 132 Nott St., Port Melbourne.
3ZFK—D. J. Goss, 19 Fitzgibbon Crescent, Caulfield.
3ZFT—R. G. Terrill, 6 Clematis Ave., Wendouree.
3ZGS—M. Subocz, 129 Hill Rd., North Balwyn.
- Queensland**
4EP—E. J. Parow (Rev.), Borthwick St., North Ipswich.
4FE—A. R. Burton, Normanton.
4TY—N. R. W. Tyas, Fitzroy St., Warwick.
4UX—C. P. Singleton, 41 Parker St., Ayr.
4VE—E. V. Avenell, 25 Fourth Ave., Sandgate.
4XP—J. Thompson, Natural Bridge, via Nerang.
- South Australia**
5AV—A. E. V. Molineux, 7 Sabak Ave., Marion.
5FQ—B. A. Palk, 32 Forrest Ave., Hawthorn-dene.
5KR—V. M. Reeves, 2 Leicester St., Parkside.
5OX—J. Stewart, 38 Stephen Ter., Gilberton.
5PL—J. G. Porter, 21 Wangary Ave., Seaview Downs.
5TX—G. P. Tuck, Lot 21, Balmoral Rd., Der-nancourt.
5YQ—E. A. Charles, 41 Opey Ave., Hyde Park.
5ZAN—M. J. Goodridge, 45 Prospect Rd., Prospect.
5ZCX—B. H. Wall, 224 Seaview Rd., Henley South.
- Western Australia**
6AT—A. T. C. Hanson, The Esplanade, Esperance.
6CJ—C. F. Jaescke, 46 Purslowe St., Mt. Hawthorne.
6EA—A. A. Entwistle, Lot 94, Wangalla Way, Koongamia.
6FH—F. A. Hull, 17 Weld St., Claremont.
6KH—W. K. Hobby, 12 Batle St., Mossman Park.
6KJ—B. H. Gates, Station: 5 Drew St., Mira Mar, Albany; Postal: C/o. Gates Radio Sales & Service, Peel Place, Albany.
- Tasmania**
7DK—D. H. Kelly, C/o. Staff Quarters, Poat-inna.
- Territory of Papua and New Guinea**
9GW—G. K. Williamson, Telegraph Office, Samarai.

CANCELLED CALL SIGNS

- VK— Australian Capital Territory**
1VV—R. M. Marsden.
- New South Wales**
2GD—K. H. Hatton; 2LA—L. A. Lawson; 2MF—C. M. King; 2PQ—T. Armstrong; 2KM—W. H. Marshall; 2YD—W. S. B. Pettitt; 2AGU—H. C. Hatton; 2AOI—A. A. G. Parker; 2AOW—W. N. Short; 2AQQ—J. L. Guthberlet; 2AYD—D. E. Evans; 2ZAW—P. Sallinger.
- Victoria**
3NS—J. E. De Cure; 3WV—W. E. Boswell; 3ADF—G. G. Du Faur; 3AIO—W. R. Ion; 3AJC—J. G. Clay; 3AML—R. E. A. Grigson; 3ANE—R. R. Longworth; 3ASJ—J. G. Cunningham; 3AVE—E. V. Avenell; 3AWL—L. Western; 3ZAP—P. Woodruff.
- Queensland**
4AE—R.A.A.F. Radio Club; 4DE—B. R. J. T. Pooley; 4KN—C. F. Peddell; 4KR—C. C. E. Christensen; 4ZAB—T. E. Meredith.
- South Australia**
5BM—A. R. Matthews; 5CP—L. A. Lock; 5ZAH—R. G. Henderson; 5ZAT—H. McTeague; 5ZBU—M. H. Bone.
- Western Australia**
6ZAI—A. J. McCarthy.
- Tasmania**
7KM—K. G. McCracken.

EARLY COPY DATE

So that this magazine can be printed prior to the printers closing down for annual holidays, all copy for the January issue is required at P.O. Box 36, East Melbourne, C.2, by 1st December. Correspondents are reminded that the closing date for copy for other months is the 8th of the month preceding publication. Copy arriving after that date may not appear.

SWL

Maurice Cox, WIA-L3055
Flat 1, 37 Boyd Crescent,
Olympic Village, Heidelberg,
N.23, Victoria.

Following interesting items are from Don Grantley, WIA-L2022:—

Card Swappers.—Two more overseas listeners anxious to swap cards with other listeners are John Dacoutros, Silema, Malta; and Oscar Reyes, Caruen, No. 277 Vibora, Habana, Cuba. This card swapping is a very good way of getting to know more about the other fellow, and listening in other countries, but don't try sending your card through the Bureau, the QSL Managers have enough to do now.

DX.—Don't waste a card on ELOK/MM as he won't QSL. ZD6DT, FB, FC, HJ, HN, JL, NJ and RM are the only licensed ZD6s. Radio Moscow operates a DX session on the first Sunday of each month at 0500 and 0350 GMT, but no further details available as yet.

4STFJ will QSL 100 per cent. to all s.w.l. reports, provided that they are accurate, and would also appreciate reports comparing his signal to other 4STs—there are only four others on the island. His address is F/Sgt. Frank Johnstone, R.A.F. Katunayake, Ceylon. (Txn Monitor.)

Don't be dismayed if cards are lagging from CE9AB, he can't answer reports before December, and requests cards to go via the Bureau. Who is the smart guy signing 6K8GT on Nun Island on April 1st. Seems he caught a few of the I.S.W.L. boys.

8G1BQ on 20 s.s.b. from 1700 to 2359 GMT most evenings and at 2300 GMT on 40, wants reports and will QSL 100 per cent.

ZS6ALA wants reports on 28 Mc. and also is 100 per cent. QSL. QTH is George Eastland, Box 796 Springs, South Africa.

K6TQO, Claire, Spencer, P.O. Box 585, Redwood City, Calif., would appreciate a card from any s.w.l. who hears her, as would her OM, K6TQN.

QSL Cards.—Frank's remarks re accurate reports draws attention to the very poor reports which are sent out by some s.w.l.s. and many transmitting Amateurs. There seems to be a lot of worthless cards going out from the "listeners, according to the remarks heard over the air, and seen in overseas radio magazines. Suggest a perusal of Eric Treblcock's remarks on page 13 of the March 1958 "A.R." would be in order.

Awards.—By the time these notes are read, the VK2 Division will be compiling the information on the new VK SWL Award. At the moment it is still in the talking stage, but several ideas have been put on paper and it is hoped to have something original in the way of an award to offer the world-wide fraternity of s.w.l.s.

National Field Day.—I would like to add some words to those in Sept. "A.R.," but for the benefit of the listeners. In the past, listener sections have been rather poorly patronised, but we have ourselves to blame entirely. In 1959 there were six entries, five having under 36 points. The year before it seemed as though Mac Hilliard was the only entry. If we don't participate, we will find ourselves without an interest in the field day, and in this time of s.w.l. progress it would be a backward step. This is a contest which doesn't require a lot of thinking out beforehand, as does the R.D.

Images in Communication Receivers.—Many of us have image trouble in our receivers, particularly those chaps who have a certain brand of set on offer in fair supply at the present moment. Would like to draw your attention to an article in Monitor, July 1959, on the subject. Anyone wanting a copy of this inexpensive wave trap can have it if they care to write to WIA-L2022.

Interstate Contest Challenge.—How about you chaps in VK3 challenging us VK2ites in the National Field Day?

NEW SOUTH WALES S.W.L. GROUP

Barry L2069 has been doing some DX on the broadcast band. Barry told me the other day that a station in VK6 near 950 Kc. on Saturday night 2359 hours EST has a programme in which they give away a lottery ticket to people living at a distance from the tx. Since they are paying on distances of 50 miles or so, Barry's QSL should win the lot. Good hunting, Barry.

Many of our members lent much of their gear for the W.I.A. display at the Chatswood Town Hall. It was held on Monday and Tuesday, 10th and 11th Aug., and was in connection with the Youth Festival Week of the Willoughby Council. Our thanks to all who helped.

Don L2022 reports that there is much good DX on 80 in the early morning. 40 at 0500 GMT is good when one can sift out the commercials.

It is nice to see the formation of a group in VK8. The best of luck to you over the other side of VK. Looks like we have some opposition in the contests. It would be nice to see some of the listeners in VK4 and VK7 form a group and enable us to have an Australian wide s.w.l. set-up. After all, many of tomorrow's Amateurs are today's s.w.l.s.

Still have not recovered from the R.D. Contest. Let's hope there were a few good scores. I have had many inquiries about the rules as published in June "A.R." The fact that both calls can be logged, if they are interstate, has not been made clear enough. Many have said that the example log given appears to show that only the call sign that makes the call can be logged. I hope the matter is cleared up in the rules for next year.

AMATEUR STEREOPHONIC TRANSMISSION

During September, Chris VK3AXU, whilst in QSO with VK3AGV, VK3II and VK2HN, successfully transmitted his voice stereophonically via Amateur Radio. Reports on the experiment showed that whilst Chris moved about the shack, this effect was well reproduced at the receiving station.

Chris is wondering if Gordon, Lee, Herb. and himself are the first Amateurs in the world to participate in a stereophonical sound experiment via Amateur Radio.

Chris and Gordon set up their equipment specially for the experiment, whilst Lee and Herb. listened in. Another achievement for the Victorian S.W. Zone!

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DX

John C. Pinnell, VK2ZR
15 Summit Avenue,
Earlwood, N.S.W.
Phone: UW 4248.

The general feeling of most Amateurs is that the bands were not so good for DX this month although at times things were really good. I did not do so well with contacts from all continents except Europe which was very easy to work from my location. I made 156 contacts with Europe which is a little higher than my usual monthly average, 15 and 20 metres being used.

Rare DX is hard to come by these days, and a bad thing on both 7 and 14 Mc. is the increased phone activity creeping below 7050 and 14100 Kc. And this often happens when the bands are quiet and there is plenty of space for phone up the band (2AMB).

Generally speaking, 14 Mc. phone band conditions have not much improved since last month, and practically all DX stations were worked after 10 p.m., this being the only time of the day I could hear 'em. On several occasions during the month, Aurora effects were noticeable, and erratic conditions resulted thereby. It is very noticeable that, as a rule, very strong signals are conspicuous by their absence, and this applies to the "kilowatt boys." The old reports that we were giving these last year (4A over 9) simply do not seem to appear now (3AOM).

NEWS AND NOTES

OK7HZ was in Lebanon during September signing OK7HZ/OD and by now should be in Syria where, it is understood, he will have no trouble obtaining an operating permit. He was unable to get a license while in Turkey.

After Syria, George plans to be in Saudi Arabia by the end of the year and, if possible, continue thence to Yemen. After that, the stops will be Iraq and Iran, and Afghanistan about April 1960.

9G1BQ has been active on 7090 Kc. s.s.b. during the week-ends.

SV0WB (W4SSG) will be leaving Rhodes early in December to return to the U.S.A. He is very active on 14 Mc. s.s.b.

From Jan Mayen, LAING/P is working c.w. and LA3SG/P is on s.s.b., and they will be there until the middle of next year. Mail service will be cut off during their winter months.

VQ8APB is working 14 Mc. a.m. phone from Brandon Islands which are located about 250 miles north-west of Mauritius. It will probably be given separate country DXCC status.

V5BAZA is a new one and claims to be located in Mukalla, a city in "Quati State," he says it might be counted as a new country. If not a new country, it will be counted as Aden.

DL5PF, whose recent trip to Andorra as PX1FF, made nearly 3,000 contacts. His QSLs should start to come through within the next few weeks. He plans another PX expedition for next year, possibly accompanied by DL7AH.

LA4PF/P, who was located on Hopen Island, Svalbard, has returned to Norway, and is answering all QSL cards as rapidly as possible.

ZD1FG has now left Sierra Leone and is returning to England. QSL to him via R.S.G.B.

Vatican City.—W9IOP will operate HV1CN during "CQ" C.W. DX Contest in November.

15GN is active on phone around 2200z on 14324 Kc. crystal controlled.

V59OM, from the Sultanate of Oman, is active on 21 Mc. phone. He can be raised by calling him on c.w. on his phone frequency and then switching to phone.

4STFJ, well known DXer from Ceylon, who got his 25 watt s.s.b. on the air a few days ago, is now closed down as he is returning to England.

AC4AX is still in Lhasa and is about to return to the air with high power and a beam antenna (W6YY).

No records are available of the following calls being assigned, and are believed to be phonies: FP8BT, on 21 Mc.; UR1LD, on 14 Mc. c.w.; and AP5E/YA. AP5E says he did not work from YA. (W4FVR).

* Call signs and prefixes worked.
z zero time—GMT.

OY7ML, OY8RJ and OY3PF are active from the Faeroes Islands on 14 Mc. c.w. Times: 1600-2100z and 0600-0800z in Sydney.

Some stations worth listening for on 14 Mc. s.s.b. between 1700 and 2000z: 15GN, MP4BBW, 5A2TW, 5A3TA, GW3LU, OQ5GU, VQ9EER, GC3LXK, OK7HZ/OD, 9K2AL, KG1FD, 9G1BQ and EA2CA.

VK3ATM, Melbourne University Amateur Radio Club, is active on 15 and 80 metre phone (L3065).

ACTIVITIES

8.5 Mc. Phone.—L3045: ZL2AAX, SY, 3BT, RB, WR, 4BJ, GM, FK8AU.

7 Mc. C.W.—2AMB: 4STFJ*, BERS195: JA-1LR, KH6CW, UA0FF, UA0FM.

14 Mc. C.W.—2AMB: CM2QN*, FO8AC*, HB-9YJ*, KG1BL*, LZ1UR*, LA3SG/P* (Jan Mayen), OZ1QM*, OZ3HW*, KM6BI*, PY1HQ*, TI1PZ*, VQ6WQ*, VU2BK*, YU3CI*, CO2ZS, CN8BP, CP3CN, EI9IM, VQ9AIW, UP2NM, ST2AR, VS9OC, VS9OM (Oman), UI8AK, VU-3KA, XW8AI, 4X4JU, 9M2GE. 2QL: FB8XX*, FP8BG*, FR7ZD*, HR2FG*, LA3SG/P*, OY2H*, UP2NM*, UO5AA*, VR1B*, ZP8LS*, Z57M*, LA2TD, ODSCI, SUIMS, UG8AB, UG8AW, VS9OM. 2ZR: DJ4YS*, DL1XH*, DM2ACA*, F8TQ*, G2DPD*, G2CFMV*, BV1USB*, GM-3LYS*, GW3EPM*, HASDH*, LA7JF*, LA7LG/P*, OH3OB, OK1CG*, ON4FU*, PA0FF*, SM-7EU*, SP0DT, UA3KAH*, UA0UKA, UC2KAR*, YU3UQ*, ZSIWM*, BERS195: CO2SW, F2C/B/FC, FO8AC, HPIAO, KM6BI, PY4AO, UI8AK, UP2NM, VP9EB, VS6BJ, VS9OC, XW8AI, YA-1AO, 9M2FR, 9M2GE, JATK/MM, JA3API/MM, LA1OP/MM, 4X4ON/M/Me. 4DO: W/K*, VE, JA*, BV1USB*, CT1PM*, CX6CB*, DJ-2KS*, KU*, DL1P7, LA*, DM2ACA*, AMG*, ADL*, F8NB*, AD*, F8NQ*, MI*, F8K0*, G2DC*, G3ASG*, G2CFMV*, HA4BY, HB-1RM*, HB9PV, SL*, VLA, IICF*, J11AB, LA7RE*, LU1NE*, OK1VZ*, OKIKAM, ON-4UR*, PY4AO*, PY8YP*, SP8LS*, SP8Z*, SP0DT, UA0IK*, GF*, KCK*, V58KJ*, VE-5BG*, VP9EN*, YU1KD*, DL7EJ, E1BY, F8CI, G6FO, 3HXQ, 8DV, G13IV, 11ADW, OESBY, W6, MP4BCU, ON4JB, OZ5PA, PK1CH, PA0VE, SP3KB, 8SR, UA3MB, UB5FR, GA, UW, KAO, KBA, UC2CB, KAO, UQ2AS, UR2AO, YA1AO, XZ2BE, ZK1AU, 4X4JN*, 9M2GE.

14 Mc. Phone.—2AQJ s.s.b. 0500-0730z: DL-3IRZ, G2CWL*, G2HX*, GW2DR*, KZ1EG*, K8KTB*, KG1AA, W5s, 8*, 9*, W7AEA*, HB-9SI, W4FGH, VE3WY*, VE7ALR*, VP9EC, 2AMB a.m. KZ5A, YV5ABH*, TI2PI, KR-6CG, XE2DO, 3AOM a.m.: HH2Z*, HPIA*, IIAJ*, IIVF*, KL7BA*, KZ5A*, LA8LF/MM*, TI2PI*, VE3BP*, VE3DD*, VR2DK*, YV5AIP* Ws, 4DO a.m.: W/Ks*, KH6s*, VE8*, EA8CC*, G2PU, KA2KM*, OX3KW*, UA0GF*, VR2DA, BERS195: EA3JO, KW6CL, VK9RO, L2001: DJ3MH, EA3E, GW4CC, K5BFF, VE2TN, L2048: EA3E, G3HFD, JA-1BNK, KR6AM, KR6CE, LA8LF/MM, W1LMP/MM, YB5AY, L2048: BV1US, FK8AU, G3HFD, G3GFV, JA0DA, KH6AL, RR, BTJ, KR6IT, all W call areas, ZLs: s.s.b.: BV1USE, BV1USU, ZLs, Ws, KX6BP, KX6BT, KR6DR, KR6DI, KR6CP, KR6RA, KX6BT, KH6DAL, YV5AF.

21 Mc. C.W.—2QL: GB3RI*, OA3D*, XE1PJ, ZC3AF*, ZS5BA, 2ZR: DJ3BN*, E14A*, FB9B, G5HS, 11ER*, HB9HX*, JZ0HA*, DL-1QP*, OA3D*, OE1FR*, OK2OV*, ON4BU*, PA0HOR*, SM7BIR*, UA1NA*, UB5JX*, VU-2JA*, ZB2A*, ZS4IO, ZS5BA*, ZS6MP, 4DO: DLI5V, EI9J*, F8XS*, G3FGY*, MPN*, GCD*, HJJ*, G4MD*, G6VG*, GM3JDR*, GM3KJ*, HB9YI*, OH1TY*, SM5BAS*, SM5CE*, SM-7BIR*, UA4HP*, UA4IF*, UC2AD*, VK9RO*, ZC3AF*, W/Ks*, KH6s*, VE8*, DL7AQ, EA-7IA, FA9VN, G8JO, HB9TT, HH2CE, OA3D, UA1BE, VQ4HT, ZB1AQ, KC4USV, ZE2JC, LA-1OF/M, 9M2FR, 9M2GE.

21 Mc. Phone.—4DO: CN8EH*, CO8OK*, FB-8XX*, FE8AH*, FUSAC*, GW3UO*, HIBGA*, KR6HT*, MP4BCC*, UA0LO*, VU2NR*, ZC-5AF*, ZS5FP*, ZS6JW*, G4OV, G8CD, XE1KQ, MP4QAO, ZC4SC, VS1GQ, L2001: G3JAF, FA-8WE, KH6BTE, KH6BFF, KL7ALZ, JA4HM, PZ0PD, VK9AA, VK9RO, VP1EE, VR4BW/MM, XE3AX, YN1HW, L2065: F8US, FUSAC, CT1SX, G2AMG, G3HZD, IIBPD, IUUA, KB-8BH, KHs, Ws, VR2AZ, VR2BC, VR2CS, VR-2CC, VR2DF, VR2AS.

QSLs RECEIVED

2AMB: CT2AL, 2QL: VS9AC, VS9AS, CM-2QN, PZ1AP, 2ZR: LZ1KRB, LZ1WD, LZ-2KDO, LZ1KBA, ZCARD, HB4FD, OK1KDC, OK3MH, SP5AR, 3AOM: HK4EX, HP3FL, ON-4DZ, ON4GM, L2001: VK0DA, VKOPT, W6JYW, GM3EST, FK8AV, BERS195: DL0BR, DU1FO, EA8CG, FA8GY, HB1VL, K6QPY/KW6, UC2BG, UD6AM, VKORR, VR2DA, YK1AT, ZB1BN, ZS5RS, 9M2GE, PILLS, VE0NI, VR2DG/MM.

Cards from Jan Mayen stations are not expected to be available before June next year (2QL).

All QSLs from the XE4B DX-pedition to Suncoro Island activities were mailed during September (XE1XX).

QSOs with Newfoundland or Labrador prior to April 1, 1949, count as a separate country from Canada for DXCC purposes.

QTHs YOU MAY NEED

FP8BG—Via VE2AE.
FR7ZD—Via FB8BC.
ZC3AF—Via M.A.R.T.S. (2QL).
YA1AO—Via DL8YI (BERS195).
VS9OC—Via R.S.G.B.
K6QPG/KW6—Box 68, Wake Island, (BERS195).
CE0ZA—P.O. Box 781, Santiago, Chile.
CP5AD—P.O. Box 960, Cochabamba, Bolivia.
FASNL/SH—Jean Bourl, Poste Radio, Timihouh, Sahara, Africa.
FQ8AW—P. O. Box 298, Brazzaville, French Equatorial Africa.
JZ0DA—QSL via W2CTN.
Ex-MP2BFC, ex-MP4BCL, ex-ZD3BFC, and ex-V06BFX—QSL via G3BFC, W. Wheeler, C/o. Int. Aeradio Ltd., College of Aeronautics, Cranfield, Blechley, Bucks, England.
OATH—P.O. Box 538, Lima, Peru.

I am again indebted to the following gentlemen for assistance given in compiling these notes:

Don Chesser, W4KVX, Burlington, Kentucky, U.S.A., for the use of his DX Radio News Magazine (via 2QL). Bud 2AQJ, who is very active on s.s.b. and who found conditions to be variable during the month; some days good, others bad. Laurie 2AMB; your comments appreciated and supported by others. Frank 2QL hunts out the good "ones" between QSL Bureau chores. Hal 4DO has a new 21 Mc. quad working well. He also made W.A.C. in 21 minutes operating on 14 Mc.; congrats. OM, my best time is just under two hours. Barney L2001 has logged quite an impressive list. Mike L2048, your list is appreciated. Don L2022 had receiver trouble and a lot of time taken up with preparing for the A.O.C.P. examination, so did not send in a list. Hope you get through that theory and soon start stirring up the air around Holbrock. Ian L2065 is QSL manager for the Melb. Unl. A.R. Club. Best of luck in your coming examinations. Eric BERS195 is back from VK7 so will be more active this coming month. He says there is plenty of DX around, it only needs time to listen for it. George 3AOM finds the bands have not much improved. His comments are given elsewhere.

That is about all for this month, and thanks for your help.

D.X.C.C. LISTING

Listed below are the highest twelve members in each section. New members and those whose totals have been amended will also be shown.

PHONE			
Call	Cer. C'tnt- No. ries	Call	Cer. C'tnt- No. ries
VK6RU	2 232	VK6KW	4 194
VK6MK	43 226	VK4HR	12 182
VK4FJ	21 213	VK3BZ	3 176
VK3WL	14 211	VK4RW	23 164
VK3ATN	26 204	VK3EE	10 163
VK5AB	45 202	VK9DB	21 181
Amendments			
VK4DO	40	VK2EO	2 191
VK4DO 20 132			
C.W.			
Call	Cer. C'tnt- No. ries	Call	Cer. C'tnt- No. ries
VK4FJ	29 248	VK3XU	48 213
VK3BE	10 245	VK3NC	19 206
VK3CX	26 240	VK3YL	39 203
VK3FH	15 228	VK3BY	45 203
VK3BZ	6 222	VK6RU	18 201
VK4HR	8 218	VK2EO	2 191
Amendments			
VK4DO	20 170	VK6KW	40 114
VK3RJ	42 160		
OPEN			
Call	Cer. C'tnt- No. ries	Call	Cer. C'tnt- No. ries
VK4FJ	32 251	VK3WL	45 228
VK3CX	8 250	VK3XU	61 221
VK6RU	8 250	VK3HG	3 215
VK4HR	7 233	VK3JE	12 210
VK3BZ	4 231	VK3ATN	69 210
VK6MK	74 230	VK6KW	13 209
Amendments			
VK4DO	15 190	VK5NO	78 118

ORYX

(LOW VOLTAGE)

**MINIATURE
SOLDERING
INSTRUMENT**

*A must
for
Transistors*

(actual size)



PROTECT YOUR TRANSISTORS WITH ORYX

There is a danger of damage when soldering to transistor leads, due to A.C. leakage currents. The use of a low-voltage transformer supply, with earthed secondary is therefore recommended. Take care also that too much heat is not applied to flying leads. The ORYX iron, and a heat-sink such as heavy pliers gripping the lead between the contact point and the transistor, will ensure protection.

- Fast heating element, ready for operation in less than one minute.
- Exclusive design features resulting in universal acceptance of ORYX as the standard miniature soldering instrument.
- The ORYX long life element will outlast several bits which are of tight push-on fit.

Bit Dia.:	Volts	Watts	Nett Weight	Length	Recommended Use
Model 6 1/16" (Fixed)	6	6	0.25 oz.	6"	Electrical measuring instrument fine assemblies, hairsprings, R.F. pick-up and speech coils, hearing aid sub-assemblies, etc.
Model 6a 3/32" (Push-on)	6	6	0.25 oz.	6"	As for Model 6 (for extremely delicate work only).
Model 9 5/32" (Push-on)	6, 12, 24-27½	8.3	0.25 oz.	6"	Hearing Aids, Radio and TV Sub-assemblies, Coils, Electronic Instruments, Model Construction, Electro-Medical, etc.
Model 12 3/16" (Push-on)	6, 12, 24-27½	12	0.5 oz.	6.25"	Radio, Television, and Telecommunications assemblies.
Model 18 3/16" (Push-on)	6	18	0.75 oz.	7¼"	For heavier work, heat capacity equivalent to that of most 80 watt soldering irons.

MANUFACTURERS SPECIAL PRODUCTS PTY. LTD.

47 YORK STREET, SYDNEY

MELBOURNE: Amalgamated Wireless (Australasia) Ltd.

ADELAIDE: Newton McLaren Ltd.

PERTH: Nicholsons Ltd., Carlisle & Co. Ltd.

HOBART: Noyes Bros. Ltd.

BRISBANE: Chandlers Ltd.

MSP3.58

Amateur Radio, November, 1959

NOTES

FEDERAL

V.H.F. CENTURY AWARD

Quite a long time ago the Federal Council of the W.I.A. approved of the introduction of a V.h.f. Century Award (Certificate) to be issued to those who submitted proof by QSL cards of having made one hundred contacts on the v.h.f. bands.

Because of lack of finance the project has been "shelved" for some considerable time although initially a quantity of high quality certificate blanks were imported from the United States of America and are still in the possession of the Federal Executive.

At one stage members were called upon to submit a suitable design but no efforts were forthcoming. Since it is now proposed to continue with this project designs will be accepted. Anyone who would care to try their hand at designing a suitable certificate now has the chance. A fee of £5 will be paid for the design finally chosen. The lithograph design on the blank certificate is rose-red and a sample of this will be forwarded to anyone seriously interested in working out an appropriate v.h.f. design to be overprinted on the blanks. Please write and request a blank certificate to Mr. Straughair, Federal Executive, W.I.A., Box 2611W, G.P.O., Melbourne. In the event of a rush we might have to limit the number of blanks available for design purposes so be early.

When a design is completed it must be returned to Mr. Straughair who will submit it to the Executive. The design forwarded by any person will remain the property of the Institute. If any design not ultimately chosen for the V.h.f. Century Award is subsequently used as a basic idea in part or in whole for any other Institute award, a fee of £5 will be paid to the designer, so please see that your name, call sign (if licensed) and address is clearly printed on the back of your design. Multi-color design will be acceptable although it is suggested that cost be considered when designing if more than one or two colors are proposed. Don't hesitate—do it now!

I.T.U. GENEVA

Reports from the I.A.R.U. indicate that three of the principal officers of the I.T.U. Conference, elected during the first plenary session in August, are Amateurs.

Charles Acton, VESAC, is chairman; Juan Antelli, LU9UL, is a vice-chairman; and Gerald Gross HB9IA (formerly W3GG), acting secretary-general of I.T.U., is a secretary of the conference.

At a second plenary meeting in August, the I.A.R.U. was one of the 16 international groups admitted to the conference.

John Clarricoats, G6CL, and Per-Anders Kinman, SM5ZD, represented the Union at the opening and for some weeks after, however it is expected that they will be relieved later on by other representatives.

Secretary Budlong and A.R.R.L. assistant manager Hutton are "Industry Members" of the American delegation, and have been assigned to the delegation's allocations group, working in that capacity in committee 4.

Early September the committee had completed preliminary examination of the spectrum below 4,000 Kc. and had commenced an initial exploration of proposals concerning the spectrum from 4 to 27.5 Mc.

CONTEST CALENDAR

Compiled by W.I.A. Fed. Contest Com.

★

"CQ" WORLD-WIDE:

CW—Last week-end Nov. '59.

R.S.G.B. 21/28 Mc. PHONE CONTEST:

Dates: 0700 hrs. Sat., Nov. 21, to 1900 hrs. Sun., Nov. 22, 1959.

Rules: See "A.R." October, 1959.

The chairman of committee 4, Gunnar Pedersen, of Denmark, noted, in passing that the various proposals appeared to divide the delegations into two opposing camps—those who wished to leave untouched the present allocations table in the high frequency band, and those who wished to make additional space available for broadcasting, mostly at the expense of the fixed service.

TWO NEW MEMBERS ON FEDERAL EXECUTIVE

The Headquarters Division of the W.I.A. has endorsed the co-option to the Federal Executive of two new members, Mr. David Rankin, VK3QV, and Mr. Tom Straughair, VK3ZIT.

Mr. Rankin was formerly holder of the Limited A.O.C.P. and although his chief interest is in the v.h.f. field, he recently passed his morse code to gain the full transmitting license. As an experienced v.h.f. Amateur he will represent the v.h.f. groups on the Federal Executive and this representation will be the means by which matters raised by v.h.f. licensees all over the Commonwealth will be dealt with. V.h.f. licensees are therefore invited to raise any queries through their Division's Federal Councillor and Mr. Rankin will be pleased to present the problems to the Federal Executive and advise of any decisions reached.

The Institute has grown considerably over the past five years or so, and with its growth comes more work. To cope with this and catch up with work which of necessity has had to be left "undone," the Federal Executive is being re-organised so that the work is more equitably distributed. This may take a little time, but it is envisaged that the results will eventually be well worthwhile. In this re-arrangement Mr. Tom Straughair will be undertaking various outstanding projects and these will be notified to Federal Council and within these columns from time to time.

COMPOSITION OF FEDERAL EXECUTIVE

Federal Executive is composed of the under-mentioned members who carry out the various appointments within the Executive:

President Max Hull, VK3ZS
Vice-President George Glover, VK3AG
Asst. Sec./Bus. Officer, Bill Mitchell, VK3UM
Treasurer Bob Boase, VK3NB
Publicity Officer Len Burston, VK3ZB
V.H.F. Officer David Rankin, VK3QV
Project Officer Tom Straughair, VK3ZIT

George Glover also holds the appointment of emergency co-ordinator in addition to that of Vice-President.

CANCELLATION OF PRIVILEGES

In June last, A.R.R.L. received information that the Government of Ethiopia had cancelled all Amateur Radio licenses with the exception of one which is held by a member of the Royal Family.

JAPAN AMATEUR RADIO LEAGUE

This Society now has a membership of some 7,000, and became an incorporated society at its annual general meeting held in June. Ken-ichi Kajii was elected chairman of the Board of Directors.

The meeting was addressed by the President of the Japanese Red Cross who praised the role played by JAs in rescue work in disasters and citations were given to those who made outstanding contributions to Amateur activities.

MARITIME MOBILE

Liberian Radio Service has granted Maritime Mobile privileges to Amateurs aboard Liberian ships. This concession was obtained by the Union Schweiz Kurzwellen-Amateur.

FEDERAL AWARDS

KEERMADEC ISLAND

Credit will now be given for contacts with ZL1ABZ on Keermadec Island. Cross-band contacts will not be considered for credit purposes.

G. Weynton, VK3XU, Manager.

NEW SOUTH WALES

The September general meeting of the N.S.W. Division was held at Science House, Gloucester St., Sydney, on 25th Sept. The meeting

V.H.F. NOTES

At the time of going to press the v.h.f. notes from Frank O'Dwyer, VK30F, had not arrived.

opened at 8 p.m., the President, Dave 2EO, presiding. Three overseas visitors were present, namely, OH2MT, DL1SJ and Ted KJen. They were presented with a Call Book in commemoration of their visit to our meeting. Apologies for non-attendance were received from 2HT, 2APQ and 2WS. Following the usual formalities, 20 new members were admitted to the Division, making a total membership of 1,169.

A letter from the P.M.G. Department was read, regarding the severe interference being experienced on 28 Mc. The Department requested the co-operation of our members in identifying and locating the signal causing the QRM. Reports on this matter will be appreciated.

A report on the Slow Morse Transmissions was made. These transmissions are conducted on 3535 kc. each evening at 7.30 p.m. under the call VK2AWI. We are pleased to have a roster of operators from all over the State to operate this service to our members, and by all reports received members are most pleased with the efforts of those taking part. Undoubtedly this will assist many of our Associates and Limited ticket holders to the full call.

The lecture for the evening was delivered in a very workmanlike manner by Bob 2ZAR and dealt with v.h.f. and u.h.f. techniques. The material of his lecture and the apparently never ending supply of v.h.f. equipment held the interest of the gathering and a goodly number of questions were posed at the lecturer. The vote of thanks was passed by acclamation on the motion of 2ZR, who claimed that the v.h.f. bug had bitten after many years of activity, and we feel that as a result of such a lecture that many will follow in his path.

The Convention Minutes were then discussed and all were ratified with the exception of the item dealing with the proposed Convention at Easter 1960, which had been suggested to deal with the report on the Geneva Convention.

The meeting finally closed to allow the usual adjournment for coffee and the ragchew which continued until lights out at 11 p.m.

We hear that Crief 2XO, of Coff's Harbour, is ill in hospital and we hope that he will be much recovered by the time this issue reaches members. No doubt at a time like this, Crief would like to see or hear from his many friends made over many years of activity. The best to you, old man, from all.

We are sorry to report the loss suffered by Fred 2BM of his wife, who passed away on 5/10/59. Mrs. Treharne will be remembered by many of the older chaps as being an inspiration to all, and we would, by this means, like to convey to Fred, a Past President of this Division, our deepest sympathy in his great loss.

7th SOUTH WEST ZONE CONVENTION AT NARBANDERA

The Six Hour Day holiday week-end, Oct. 3-5, was the date of a very enjoyable Convention organised by members and their wives of the Narrandera Radio Club. Registrations exceeded the 100 mark. Readers may not be aware that the Narrandera Radio Club is composed of a number of Radio Amateurs, resident in the town, who are members of this Division.

The function was attended by Amateurs from all parts of the zone, Bob 3ML, Eric 2DY and Peg, and others from Sydney made the trip.

Following registration in the afternoon, the Convention commenced with a dinner held in the C.W.A. Hall which was attended by the whole gathering including the wives and children, who were amply catered for. An enjoyable programme followed consisting of an amateur hour and films, including one on the 1856 Olympic Games. Supper was served—the ladies officiating.

Sunday was devoted to a field day and despite the threatening conditions, the programme was run to time. The all band scramble was won by Ross 2PN, second prize was a draw between Stewart 2PL and Fred 2AJI. Hidden Tx Hunts were won by Bob 2ZH and Lindsay 2ZLS, both of Wagga; the second hunt by Eddie 1VP, of Canberra; Bob 2ZHW being second. Blind Fold Tx Hunt was won by Neil 2ZCN, and the XYL of 2RS won the ladies' section of the hunt.

HUNTER BRANCH

The September monthly meeting was well attended and a varied and interesting lecture was given by Frank 2FX, on various Television subjects on the rx side. Stuart 2ZDF was welcomed back after his long stay in Melbourne and two new members Ian Fyfe and Doug Dickson were welcomed into the fold as associates. Frank promised to continue his lecture at a later date, a statement which was received with enthusiasm.

A couple of pars for the red face department: Who was the guy, south of here, who spoke into a dead mike for five minutes before he woke up to the fact that all meters registered zero. Anyone visiting his shack will now see a 40-watt amber bulb shining brightly. Also we wonder who was it who for many months tried desperately to charge his battery until he discovered that a wire had come loose inside his charger.

Dieting is the latest craze with 2ZL, 2AKX and 2AQR, of course the latter doesn't really need it.

Next general meeting of the Branch will be on Friday, Nov. 9, at the usual place, but I doubt if there will be social meeting at 2XT's as Bill should be on the high seas by then.

Annual Dinner and Field Day

The second post-war Dinner and Eighth Annual Field Day were held on Oct. 3-4, and despite the continual rain there was an excellent roll-up and a good time was had by all. Again it was gentlemen only and 83 were seated before a sumptuous repast. President Lionel 2CS welcomed the visitors.

Whilst there were quite a few old-timers there who were reared by the Old Man and did their teething on the Wouff Hong, the accentuation was in the four old-timer guests, namely, 2HC, 2AXH, 2ZL and 2FF.

...VK2HC.—Ray received his license in 1926 and was quickly amongst the DX, receiving the second certificate ever issued for W.A.C. phone. This was in 1930. Ray was beaten by one month by ON4UU. In 1931, Ray established the first VK2-3 28 Mc. two-way phone with VK3BQ and in the same year received the W.I.A. Certificate of Merit for being the first Amateur in the British Empire to W.A.C. on phone. During 1930-31 Ray acted as official W.I.A. broadcast station.

VK2ZL.—Bill's first license was in 1912 when as ODX using a Siemen-Holtz 2-inch spark coil, he made such a mess of the ether that I believe the Russian jamming stations took over his gear. Due to many reasons, Bill was off the air until 1954, but has been active ever since. Bill was Vice-President of the I.R.E. and in 1952 received Life Membership from that Institution. At present he is retired and is kept busy mowing lawns, mending clocks, etc.

VK2AXH.—Wal, the grand-daddy of them all, found a license from somewhere or other in 1908 and in 1911 Wal went to the Antarctic with the late Sir Douglas Mawson as radio operator. Boy can Wal tell some tales of that expedition. In 1910 he was Foundation Secretary of the Wireless Institute of Australia and at one time was Federal Secretary and President. For a while he had the call sign of 2YH, and about five years ago, like all true Amateurs, the urge returned and he disturbed the ether under the call sign of 2AXH. Now retired, he spends most of his time on the air. One of the things I admire about Wal is that he is an Amateur in the strictest sense and if there is anything that he can make he will make it—not buy it. In fact he does more experimenting than any other six chaps I know.

VK2FF.—Unfortunately, I understood that Ernie would not be at the Dinner and have very little to relate except the fact that he is now exclusively on 10 mx. God bless our wheel-chair warriors.

In proposing the toast to Amateur Radio and the W.I.A., Ray 2HC congratulated the Secretary, Gordon Sutherland, for the sterling work he did in connection with the Convention and hoped that the Hunter Branch would keep on with the good work. In response, Dave 2EO said it was one of his proudest moments to be able to be here and to thank Ray for all the things he said about the Institute which is the oldest in the world. What had been done by Executive can only be done by all members assisting and we could only progress if we assist in promoting interest of the younger generation—the school-boy. Dave also

Alan Fairhall, M.B.R. (VK2KB), guest speaker at the Hunter Branch Dinner, discussing Amateur Radio matters with Lionel Swain, VK2CB (left), and Dave Duff, VK2EO (right).



thanked Alan Fairhall and his colleagues for what they have done for Amateur Radio over the last few months.

The guest speaker, Alan Fairhall, VK2KB, spoke at length re the I.T.U., and congratulated 2WI and 2AWX in the manner in which they broadcast their opposition to the cuts in frequency. When he raised the matter in Parliament he quickly had support on both sides of the house, including Messrs. Griffiths and Jones who were present at the Dinner. At present there is a clear indication that local option will not be exercised to make further reductions. Alan said that in his opinion the time has arrived when the control of Telecommunications should be taken from the F.M.C. and vested in a commission as in the United States, where the Amateur is at least represented.

The field day on Sunday at Blackall's Park was well suited to the blokes with webbed feet. The 7 Mc. scramble was won by Jim 2PM with Ken 2ANU runner-up; these same two won the 144 Mc. hunt in the afternoon. The morning hunt was won by Bob 2ASZ with 2PM in second position. On the social side, Helen Cowan and Betty Hall won the ladies' pitch-copper, the younger girls went to Helen Sparkes while Jimmy Hall carried off the boys' prize. The lucky numbers went to Mrs. Barty and Norm 2ALJ. We must not forget to mention that the quiz was won by Secretary Gordon Sutherland which was a fitting gesture on the part of lady luck.

Did anyone see Les 2RJ and Stan 2ZDL put up a Gibson-girl balloon for the scramble only to have it blown away in the gale? They then put up the kite, but the wind dropped and so did the kite!

HISTORY OF GRIFFITH RADIO CLUB

The first meeting was held on 21st October, 1952, when it was decided to form the Griffith Radio Club. The main function was to be, and still is, that assistance be given to prospective Radio Amateurs to obtain the A.O.C.F. license.

The lectures were for several years, given almost entirely by 2PL and it is to him that most appreciation must go from the number of members who have obtained their tickets. Recently 2PL has been ably supported by 2AXD and 2ACS, and to others to a lesser extent.

It has been found that the lecturing programme has thrown a heavy burden on the few, and this year we have been able to obtain a course of papers prepared to assist prospective Amateurs, from the N.S.W. Division of the W.I.A. The club is appreciative of this action as it is of great help to lecturers, enabling less experienced members to assist in this regard.

The club has its own club rooms and has available two transmitters and two receivers, and works under the call sign of VK2AGJ. The meetings are held every Tuesday and as a variation to lectures, occasional film evenings are held when members' families can attend. The President, 2ZEC, has been very helpful in lending his projector for these film evenings. He is supported by 2ZCN, the present Secretary.

The club is proud of its record of being instrumental in obtaining for members so many A.O.C.F. licenses. The complete list of Griffith Hams, five of whom have left Griffith during the last two years, is: VKs 2PL, 2ACS, 2AXD, 2FS, 2AVJ, 2ADZ, 2NV, 2HJ, 2AEB, 2AQX, 2ADM, 2AYZ, 2ZEC, 2ZCN, 2ZJL.

ALBURY RADIO CLUB

At the time of going to press the Albury Radio Club is really getting organised on the job of training new Amateurs, a team of lads who compose a large part of the total membership. The W.I.A. course is being used and the enthusiasm of the senior members will be rewarded in the end by quite a few of these chaps attaining their ticket.

The club has applied for a call sign, and as practical exercises the students are being taught how to build their gear by building the club transmitter under the supervision of the instructors. This certainly is an excellent way to maintain interest in the younger members.

VICTORIA

STATE CONVENTION

The Tenth Annual State Convention was held at Stawell on Saturday and Sunday, 3rd and 4th October. As the visitors arrived they were welcomed with refreshments in the "Dungeon," at Bill 3AKW's building. Our thanks go to the ladies who assisted in the provision of afternoon tea which was very welcome to those who had travelled long distances to Stawell.

The Convention Dinner was held at the Commercial Hotel and we were honoured by the

presence of the Mayor of Stawell, also the Town Clerk, Shire President, Past Mayor and Past Shire President.

After the speeches were over the Mayor, Cr. Hallam, presented the Kinnear Trophy to Jim 3ABT, who accepted it on behalf of the winners—the South Western Zone.

During the business session of the Convention, the following topics were discussed: Commercial Interference in the 40 metre Amateur band, Federation of the W.I.A., Disposals, and W.I.C.E.N.

It was reported that there is very little chance of a defence organisation being set up in Victoria and so the possibility of official government authorisation cards for W.I.C.E.N. operators is remote.

On Sunday morning a large group of Amateurs gathered at 3HL's shack to put on the 3WI broadcast, but unfortunately conditions on the 40 metre band were very poor and the coverage was limited.

An enjoyable picnic lunch was held in delightful surroundings at Hall's Gap; after lunch some disposals items were disposed of.

In the afternoon a tx hunt was held on 80 mx, the mountainous country producing some unusual effects on the signal. The winner was John 3AD.

NATIONAL FIELD DAY CONTEST

The Divisional Council has decided to award a perpetual trophy for competing on between the zones and affiliated clubs of the Victorian Division in the N.F.D. Contest.

Each competing zone or club to enter a team in the N.F.D. must forward the claimed score, being the sum of both the c.w. and phone scores, to the Divisional Secretary by the same date as entries are due with the Contest Committee. These scores will be confirmed with the Contest Committee.

The winner will hold the trophy for a period of one year.

NORTH EASTERN ZONE

Radio Australia seems to be the home of Hams or potential Hams. Besides the regulars that you and I know, there are others who remain in obscurity. There are at present two Hams who have held G calls who are out here for further experience in radio transmission. They have VK call signs now, being Ted 3AFU and Dick 3APZ, so if and when you hear them, give them a shout and make them feel welcome to this zone. I hope that these two boys will be available to attend the Convention this month so that we will be able to welcome them in person. So what about it, Ted and Dick.

Another new call sign (to me, anyway) is 3AEU (Alan), who is in the process of building a dual wave car radio which I suspect will be used eventually for mobile work as I hear space has been left for a tx. Bill 3AHO heard on 20 mx calling GS and on my frequency, too! Shame on you, Bill, I thought you were an exclusive "Donald Duck" station by now.

Bruce 3AGG not very active these days, even missed by Ws on the band, but since Bruce has a building programme lined up, I can't see him bettering his appearances on the band very much. (Holy smoke, I forgot I had a sked with you Bruce). Not there, but a beaut. W signal was, how I get diverted. Bruce has also taken to pounding brass again with new country results.

The salt mines of Benalla have mail out only twice a year so nothing from that quarter.

If space allows, and the Editor permits, I am about to embark on a policy speech why I should NOT be the new zone correspondent. I'll be brief. QRL and QRU.

See you at the Convention. Remember, ATTEND TO DEFEND! 73.

MOORABBIN & DISTRICT RADIO CLUB

At the general meeting held in September it was decided to take advantage of Morrie 3AMA's offer to put on a film night, and a film depicting present day China will be shown at our October meeting. It was also decided to conduct a "White Elephant" night instead of our practical evening on Friday 6th November. So any members who have surplus gear, bring it along that night for sale. A small percentage of the proceeds will go to club funds.

As was anticipated, the gala opening night was a huge success, thanks to members bringing guests, and mainly to Max 3DF's generosity in supplying the excellent supper, and to the liquid refreshments—without which there would not have been nearly as much good cheer.

Lack of notes for last month's magazine was caused by a holiday for three weeks through N.S.V. as Surlers' Paradise and return. A Type 3 Mk. II, was taken and some fine contacts from various places were enjoyed.—SLC.

QUEENSLAND

BRISBANE AND DISTRICT

Sorry for the lack of notes over the last few months and we will try to make up for it in the future. The Divisional Council had quite an unexpected resignation at the September Council meeting. Stan 4SA had to resign from all jobs on Council due to the ill-health of his XYL who is to have an operation in the near future. A little bird told us that Dave 4DP will be doing the job, so there isn't anything to worry about. The President's job went to the Vice-President, Bruce 4BZ. We are very sorry to lose you, Stan, but we know you will still support us to the fullest. Mrs. 4SA is well known to the Brisbane gang and all the chaps who did Stan's course have a soft spot in their hearts for her. By the way, Stan's resignation also includes the class managership and there is quite a few blokes in Brisbane who became Hams as a result of Stan's class. By gosh, we're going to have a heck of a job getting a replacement for the Class Manager!!

As you have no doubt heard, Council has given the "go-ahead" for the formation of branches throughout the Division and, at the October meeting, a committee will be formed to handle everything concerned with this important business.

My old pal, Bob 4RW, asked, in his September Townsville notes, if the "one-eyed monster" was the reason for the absence of the Southern Queensland gang from the bands. Well, Bob, the T.v.i. Committee assures us that they haven't had any business as yet and I think the absence of Brisbane Hams from the bands is caused by t.v. and not t.v.i. The stations put out such tremendous signals and our 100 to 150 watt rigs only put out microvolts and can't compete with millivolts. I checked my rig on all bands from 80 through to 10 with a monster in my own home and didn't see or hear any t.v.i. When the t.v. stations were off the air, I did put some nice modulation bars on the screen on Channel 2. This station was only on 25 kw. at the time with test patterns and when it came on the air the modulation bars were nowhere to be seen.

Do you know, my electric face scraper caused more trouble than my rig and when the three stations are on as much as they are in VK2 and VK3, I'll either have to go back to a safety razor or grow a beard again. 4EL will tell you how gashly 4PR looks with a beard. No, Bob, the blokes down here are probably spending their evenings curled up in front of a t.v. receiver watching the continuous extermination of cowboys by guns (only in the hands of the "goodies") which fire 40 or 50 shots without reloading. (Our experience down under is that you have to sweep out all the dead cowboys and Indians from behind the t.v. set each night before retiring.—Editor.)

Frank 4ZM told me about a t.v. salesman who was demonstrating t.v. to a family who live near his QTH. Dad, Mum and all seven kids were at the front gate to help the salesman carry the receiver into the house. The youngest kid, a little chap of about four, piped up: "Let me carry the antenna; I always carry the antenna!"

You 40 metre inhabitants have probably heard Frank 4FN back in his old territory and it's mighty nice to see him at general meetings. We also have had some of the Ipswich boys attending lately and I, personally, have often wondered why they haven't been regular in the past. After all, it's only 25 miles and Mick 4ZAA comes almost that distance to every meeting.

Well, it's good to be back on the job and I'll keep my note book handy to jot down notes. Cheers from 4PR.

TOWNSVILLE

The monthly meeting held on Sept. 24 at the usual place was greatly attended, in fact a couple who have been missing lately rolled along. The chairman, 4PS, went to great trouble to explain the circular he had sent to all Amateurs for a radius of 300 miles, inviting them to a get-together hamfest of the local club and asking for replies. Lo and behold, only one Amateur replied by letter, thanking for the invitation and apologising that he would not be present. While it was hashed with the industries "Fair" station to be held in Cairns no word was received from the far northern boys.

Claude 4UX brought along two new associate members from Ayr and mentioned the fact that his classes were on the way with nine hopefuls, and the XYL Jess, I hope so. Claude will get used to the can opener when the coveted ticket arrives. Frank 4FF spoke of the local class of which 12 attend, including

three XYLs. He is certain all will stay the distance and hopes all will gain the coveted A.O.C.P. As Frank will be going on holidays next month, Bill 4ZBE will take over class manager responsibilities and in the New Year others will be appointed. The club wish both classes 100 per cent. passes.

Band openings are beginning and 10 metres has a few callers now. 15 and 20 metre bands are good while they last, and now summer is arriving, great things are expected. On 50 Mc. the nightly openings to Japan are continuing, also a night to KH6 each week. Japan has been heard calling 9M2DQ, so we are all poised for the break through from Townsville when the telephones will ring madly to inform all.

Eric 4EL can be heard in the wee small hours working the DX while all good people are asleep. John 4DD busy painting the tower before erection; going to slay 'em with new tower and s.s.b. Mike 4OM in trouble on reference shift modulation; swears by all things that Claude 4UX tampered with the circuit drawings. Ken 4ZAK on holidays and still maintains sked with Vern 4LK on 144 Mc.

Speaking of holidays, I will be away from QTH from 14th October to 14th December, visiting Perth (Oct. 21-31), Adelaide (Nov. 2-8), Melbourne (Nov. 9-13), Sydney (Nov. 14-22) and arrive in Brisbane on Nov. 23. Hope to see as many of the gang as possible.

SOUTH AUSTRALIA

The monthly general meeting of the leading Division of the W.I.A., to wit, VK5, was held in the clubrooms to a capacity gathering of members, all of whom had come only for the privilege of hearing the convention items read out. Rex 5DO read out the items and all were ratified in the record time of 30 minutes, and the audible sighs of relief from the members at its conclusion bore ample proof of their intense interest in all the items.

A technical lecture was scheduled as next on the programme, and in view of some uncertainty as to who was the lecturer, Gordon 5UX stepped into the breach and gave a very interesting and instructive talk on the modifications of the Command tx for double sideband. Gordon's ability as a lecturer is so well known that any words of mine in commendation would be superfluous—well, any way, they would be unnecessary. Les 5UX, on a visit from Hawker, proposed the vote of thanks and added the fact that with all the new improvements such as single sideband, double sideband, etc., it was about time that something was done to improve his middle band. Whilst I would be the first to agree with him, only my modesty prevents me from telling him that if he exercised like me, it is possible that he might some day have a figure like mine. They don't call me the Rose Park Apollo for nothing!

However, let's not digress, general business brought up the matter of the policy of the Housing Trust and the erection of aeriels by members of the W.I.A., and it was decided that Council should make the necessary enquiries.

John 5JC spoke on the matter of W.I.C.E.N. and the fact that although some 23 mobile tx's and rx's have been released to members for the purpose of using them in W.I.C.E.N., it is only with difficulty that five or so active members can be coaxed on the air for the Sunday night roll-call, etc.

The meeting closed at the witching hour of 10.30 p.m., officially, but it goes without saying that unofficially it never closed at all. Now I hope that this summary of the meeting is at least somewhere near accurate because I have an awful confession to make. I was not present at the meeting and I secured my information secondhand. To tell the truth, my son-in-law twisted my arm until in sheer pain I agreed to go fishing with him all day, and when I returned my XYL lifted me up and kissed me on the forehead, and said how tired I looked and perhaps I had better not go to the meeting. I sternly said that it was my duty to go, and I can honestly say that I meant it, but whilst waiting for the fourteenth course at dinner, I fell asleep and she carried me up to bed, tucked me in, put out the hurricane lamp, and crept out of the tent. I was very, very cross when I woke up the next morning, but what can one say when the rolling pin is so handy? (Remember the old proverb, Fanny, "DX Before Dishes!"—Editor.)

Heard Joe 5JO and David 5DS in contact one Sunday recently and, boy, oh boy, has that David got a Scotch accent. If John 5UV ever contacts him they will never separate them. I was that taken up with the accent that I could not switch off. I wish that I had one like it, I would get me a job on this new fangled idea t.v. and I bet I would get all the

fan mail in the world. Nice to hear you Dave, hope we contact someday. Thanks for the beam, Joe, it's a beauty. All the local peasants are green with envy, especially Norm Coltman.

Jim 5JB is a new one from Leigh Creek, which to the uninitiated is a low-cut coal mine to the North of Adelaide. He was using a Command tx-modulator, feeding a random length aerial on 7 Mc. when I heard him. Welcome OM, good to hear you on the air. Speaking of Leigh Creek reminds me that Tom 5AQ is still overseas but is expected back very soon. This will be two stations from up there, and although it will not be the Northern Territory, it is still a long way toward the North.

Looking idly through the new Call Book this week I got quite a shock to see the call of 5BY jump out at me. I checked up to see just what it meant and find that it is a misprint and should read 5ZBY (Lance). I feel sure that good old Dougal would have been the first to wise-crack about this error in no uncertain fashion.

Jim 5FO is at the moment engaged in a mighty struggle for supremacy with the one-eyed monster—no not you, Rae, sit down. He is trying his hand at building a t.v. set and obviously enjoying it. Naturally, this mighty effort leaves little time for his first love, Amateur Radio, but we have not lost hope as yet.

Charlie 5ON heard on 40 with a good signal each Sunday morning. When heard here was in QSO with Joe 5JO, but as Joe was surrounded by welders, sparking insulators, pole transformers blowing up and other sundry noises, the contact appeared to be a little one-sided. If the operator of the welding machine could have only heard Joe's description of those people that used welding machines on a Sunday morning, he would have gone immediately to his parents and asked several pertinent questions!

Hurtle 5HW apparently is well satisfied with 14 Mc. because he sticks to it like glue. In view of the fact that on the two occasions he was heard at my QTH he was in contact with UI8 and K8 respectively, I can't say I blame him. Doc 5MD is still flourishing and active in Amateur Radio with his 3.5 Mc. code classes on Sunday nights, his disposal duties, his Council duties and also still bears the grand sounding title of custodian of the instruments. He still tries to lure me into becoming a boarder at his guest house, but with more luck than judgment I am managing to elude the clutches of his minions! Only just, however.

Johnny ex-5KO is back in VK5 from VK3 and if rumours can be believed he is Postmaster-General, Premier, Leader of the Opposition, or possibly Governor-General. Your scribe, with his usual perspicaciousness—prespecas—well, with his usual ability to nose out the facts, is pleased to announce that Johnny has retired from the P.M.G. and is now the Production Engineer for ADS7. He has reserved the call 5KO; he expects to be in a house before long and it goes without saying that he has been listening on his beloved 80 mx. Now that he is no longer an R.I., it will permit me to join the select few who can write "Now it can be told." Space does not permit me to tell the full story now, but be sure to secure your copy of "A.R." next month and read the true story of how a courageous and gallant member of the VK5 fraternity once succeeded in pulling the lion's tail, and got away with it.

There was a ring on the nuclear atomic carbon pile doorbell of the b.b.s.s. the other night (nothing but the best equipment at the best broadcasting station in the state) and when I pressed the talk-back button and said in my usual polite manner, "What do you want, mug?" a quiet well spoken voice said, "It's a carrier pigeon from the S.E." Grabbing a handful of wheat from the announcer's pocket, I rushed out to the door, and I have never seen a carrier pigeon look so much like Claude 5CH. Boy, was I glad to see him. Taking off his carrier pigeon disguise he came into the control room and we had a long chat, during which I extracted enough information about the S.E. gang to satisfy even me. Claude himself is down in the city on behalf of the Electricity Trust seeing how the big wheels go round and will be here for about a fortnight. He naturally has not been too active but manages to keep 40 alive; is in the throes of the re-build that will end all re-builds (famous last words), and has also managed to see all of his mates in the city whilst here.

Erg 5KU is still keen on 14 Mc. and his c.w. signals can be heard calling the DX at all odd times. John 5JA is keen on the one-eyed monster than on Amateur Radio at the moment, but as he is interested from a business angle, we can possibly pardon this lapse from grace. Let's hope it won't last too long. Leo 5JG is chasing the DX on 14 Mc. and is fast

assuming the mantle of Stuart 5MS with regard to DX. 5MS has switched his allegiance from 14 to 21 Mc. and can be heard calling the rare ones at odd times. Have a listen for my signal Stuart, quite a number of the local peasants keep on telling me that my signal is exceptionally rare!

Col 5CJ has a casual contact on 40 now and again, but is by no means as active as he used to be. He came along to the meeting the last time he was down here and renewed his acquaintance with the gang. Tom 5TW bobbed up on 7 Mc. now and again, but he is another one that has slowed down a little on the air. He was going at top speed, however, when heard here in the R.D. Contest. How did you go Tom? Don 5ZBG is in the process of getting up steam to come on the air at the moment of writing, but if he doesn't hurry up we will have to alter his call to 8NBG. Oh, I can be witty when I like! The South East gang appear to be pretty keen, if the attendance at their monthly meetings can be taken as a guide. A recent meeting took the form of an inspection of the new Mount Gambler auto-telephone exchange, and under the guidance of 5JG the inspection was appreciated by all.

No news from the West Coast boys this month. Heard Wally 5DF on the 5WI call-back last Sunday, but as he simply said, "Hello and goodbye," that was not much good, was it? Ken 5AL heard on 7 Mc. this month with a good signal. He has not been on the air for some time, probably not since he left the North, but I have heard him occasionally on 3.5 Mc. He is now living in one of the Adelaide suburbs and should be heard consistently now that the bug has bitten again. John 5KX, the chairman of the VK5 W.I.C.E.N., has been heard on 40 and 80 at odd times over the month, but any other activity on the air remains his secret.

John 5JC, assisted by his XYL Betty, is the father of a bonny bouncing daughter this month, and all are doing well. Some doubt existed for a while as to whether or not John would recover, but as the medico said in an interview this week, "He had never lost a father yet, and whilst John gave him a little anxiety at the time, he was never really worried!" We Amateurs are made of stern stuff.

Earlier I made mention that Tom 5AQ was still overseas. As soon as he heard this he made a lightning dash by sea, land and air, and bobbed up on 40 at the call-back by 5WI after the session. I have made the necessary alteration to my spy staff, and the only thing that worries me is that my palsy-walsy editor will possibly get the idea that this explanation is only another dodge to get more space in his excellent magazine. However, I think he knows me better than that!

There are old-timers and real old-timers in Amateur Radio, and I bumped into a real old-timer this month in the person of Lance Jones (5BQ). He was one of the original half a dozen or so pioneers in VK5 of our grand old hobby, and incidentally was one of the builders of the First and Best Broadcasting Station in VK, none other than 5DN, which I have the honour of being on the pay-sheet. Starting as an Amateur Station it has grown to be the power that it is in VK5 because of the enthusiasm of its technical staff, all Radio Amateurs and proud of it, although other factors have possibly been of some assistance, ahem! Lance is looking fit and well and wishes to be remembered to all who may remember him, although not active and naturally lost his call sign, he still leans toward Amateur Radio as a hobby.

Comps 5EF is heard occasionally on 40 at my location, but is apparently busy grinding grain. His brother lets busy grinding his brains in an attempt to get his ticket at the next exam, and as this is being read probably now know whether it was worth while or not. Best of luck OM.

VK5 has always been called the "City of Culture," it has sometimes been called the "City of Churches," and once it was called by a disgruntled VK3 sub-editor named Pin-cott, the "City of Pubs." We in VK5 have our simple code of ethics and standards of behaviour, and it sometimes seems strange to us when others do not come up to our accepted standards. Bearing this in mind, imagine my horror and disgust the other night when I heard with my own ears a certain VK3 announce to all and sundry on 40 that he had allowed some s.w.l.'s to take away a pile of chassis and junk, thus saving him the trouble and expense of squaring off the dustman when he called. Now how low can one get, the jeering chuckle that ended his confession so unnerved me, that I have not yet brought myself to look for his name in the call book in order to unmask him to the world. I think that I am strong enough to check up now, so just a second whilst I turn the pages, VK3R—VK3RN—R. W. Higginbot—

OBITUARY

ATHOL W. JOHNSON, VK7AJ

It is with the deepest regret that we record the passing of Athol W. Johnson, VK7AJ, on September 8, 1958, after a long illness.

Athol, who was one of Tasmania's most progressive Amateurs, was first licensed in September 1947 and quickly gained recognition by his outstanding skill and technical knowledge. He was keenly interested in v.h.f. work and was one of the few Tasmanian Amateurs who worked consistently on 2 and 8 mx. His car, which was originally equipped to work mobile on 40 mx was soon re-fitted with 2 mx gear complete with a halo antenna and the many contacts he had with this equipment gave him much satisfaction. His main station comprised an all-band tx and rx which worked in conjunction with rotary beams on 20, 10, 6 and 2 mx, a ground plane on 20 mx, a zepp type and a long wire which extended for approx. 1,000 ft. across the valley close to his home in Romilly St., South Hobart.

He was an exceptionally versatile man with many and varied interests. He was a highly skilled craftsman and his exceptionally well equipped workshop contained many machines and test equipment of his own design and construction.

Although confined to his bed for much of his time in recent years, he managed to keep in close touch with Amateur Radio via a bedside set. His vigilance on frequencies outside the Amateur bands brought its reward when he was instrumental on Jan. 8, 1958, in bringing about the rescue of the luxury motor cruiser "Corasir III," which was in difficulties off Beecroft Head, N.S.W. with engine trouble and was in danger of drifting onto the rocks. Its distress signals were first heard by Athol who immediately alerted the O.T.C. staff at Hobart with the result that the vessel and its crew were all saved.

He was an enthusiastic member of the Tasmanian Division of the Wireless Institute of Australia and took an active part in all its activities. He was a member of the Connell for four years and was also v.h.f. officer and Federal Councillor. He gave many lectures at the Institute's meetings and all were characterised by a thoroughness of preparation and were given in a clear and concise manner. The many practical tips given as a result of his own experience were an outstanding feature.

As a man, Athol possessed a most likeable disposition with an infectious cheery sense of humour. He never failed to help those who turned to him for assistance with their technical problems. One of his most outstanding qualities was the courageous fight which he put up during his long illness. His fortitude in this regard was one of those rare and wonderful examples of a dogged determination in the face of a relentless malady. His untimely passing was a severe blow to all who knew him. To his widow and daughter we extend our heartfelt sympathy in their sad bereavement.

R. W. Hig—R. W. Hig—BLIME! Oh well, I suppose that there is always two sides in every question, and I don't think that any dustman should be given radio parts. Ethics and standards can be stressed too much, and after all, Editors must have some privileges not granted to us lesser mortals. Personally, I think it was a wonderful thought to give the s.w.l.'s a gift and probably saved the dustman some hard work, and without doubt such a fine, generous, kind-hearted, upstanding chap like this 3RN would only do the right thing as a natural reaction. PHEW!

TASMANIA

We extend our best wishes to Alex 7AX, Chairman of the Federal Contest Committee, who has been on the sick list for some time now; a speedy recovery, Alex. The Contest Committee, together with a band of helpers, has been very busily engaged in checking Remembrance Day logs, since about the middle of September. Their task in this particular Contest should soon be over, and our thanks are due to them for their considerable efforts on behalf of Amateurs generally. Incidentally, this Division has grounds for satisfaction because of the return of 87 contest logs out of the 68 stations which took part. Never before has the return of logs been such a high proportion of the number of stations taking part.

At the time of writing, the phone section of the VK/ZL Contest is over, and I would say that conditions were as bad as they have ever been during a contest. Most of the 24 hours passed without the semblance of a DX signal. For only about two hours were signals audible and then only with considerable QSB and QRN.

Charlie 7KS is now v.f.o. controlled and has a modulator in service. Snowy 7CH and yours truly must now be about the only c.w. men left now. Jim 7JO will soon be domiciled in Hobart, so our gain will certainly be Devonport's loss. Welcome to the big smoke, Jim.

Bob 7OM has been resident in ZL for most of September and the first half of October. We hope that all was not work, Bob. Jack 7JB is again active on all bands, since the removal of the power noise about the end of September. Keith 7RX has a 122 set in operation and would appreciate any reports on its operation, particularly from a distance.

Stereo is now all the rage with the record connoisseur. Well, Myles 7JF will be able to show you how cabinets to house such fine equipment should be made, good work Myles. The time and weather for trying out your portable gear will soon be upon us, and the W.I.C.E.N. net hopes to have such an exercise either in November or December, so get your portable rigs ready chaps.

NORTH WESTERN ZONE

Time marches on. The most important item of interest to report this month is that about half a dozen of our associate members had a shot for the A.O.C.P., and I feel sure that everyone will wish them the best of luck. More QRM I suppose in the not too distant future. More participants for the R.D. Contest next year.

Our October meeting was held on the 6th and I regret to say was very poorly attended indeed. With exam. over for associates we look forward to a much better attendance next month. We hope an eventual member in the person of Athol Burk was welcomed and he made the number up to thirteen. The meeting's business was disposed of, interspersed with several interesting and enlightening discussions which I think ironed out several matters whilst others were left in abeyance pending further natural development. Some useful pieces of equipment were disposed of by auction.

I do believe we are losing Jim 7JO to the Southern end of the island. Myles 7MF sneaked down South from up this way a short while back and Peter 7TF took himself off to the Launceston area. I sincerely hope no more of our members decide to leave us for a while at least, not until we have patched up our ranks once more.

Frank 7FH has got himself a really big power transformer and is at present working out means by which he can get himself some really high high-tension from it with the minimum outlay in db. Yours truly still hasn't done any more to the new rig; still deriving great enjoyment having quiet QSOs with 10 watts.

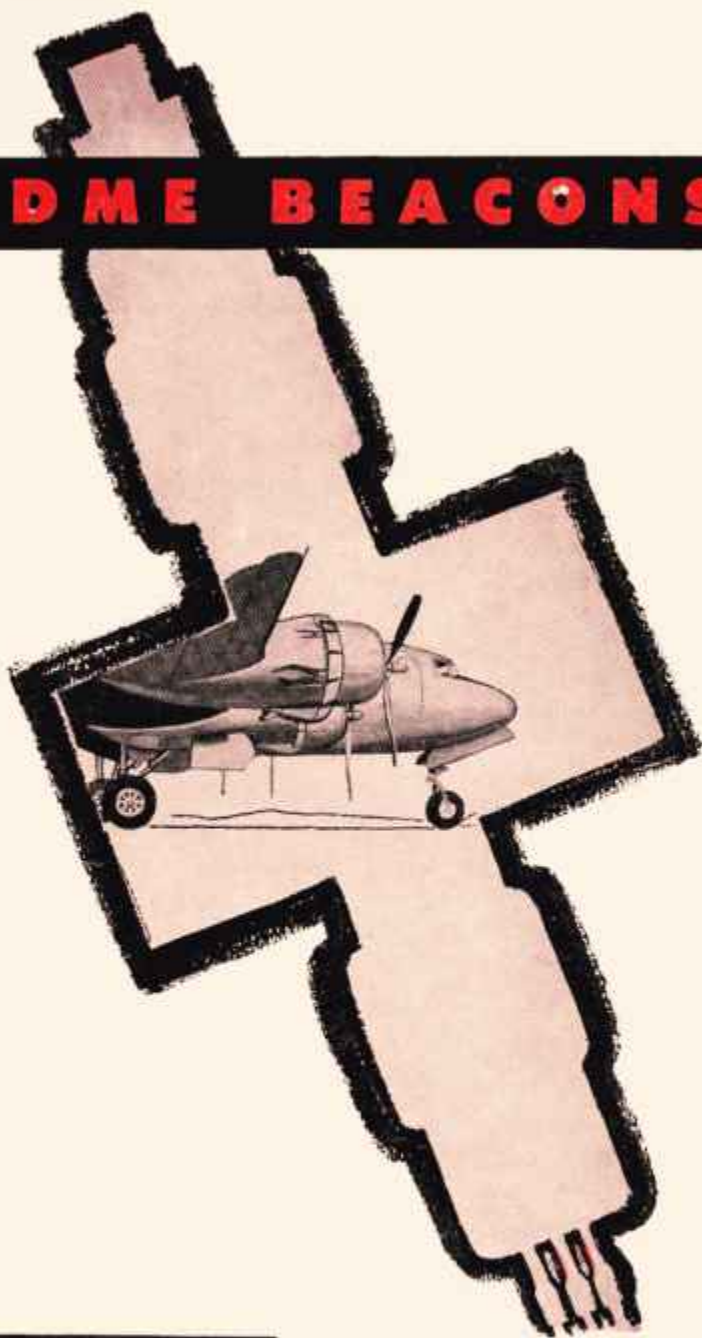
The zone net each Tuesday and the W.I.C.E.N. net are still functioning OK with the regular few holding the fort. How about a few more joining in, especially on the Tuesday night rally. It won't be long now before we start tx hunts again chaps, so it wouldn't be a bad idea if you sorted out the d.f. gear once more.

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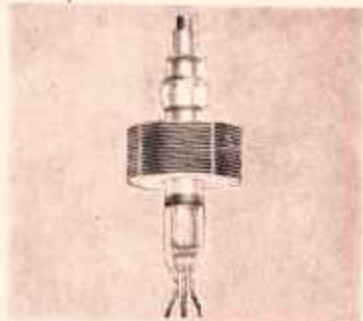
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EDITORIAL



Christmas Greetings To You All

On behalf of the Federal Executive and Federal Council of the Wireless Institute of Australia, I extend to all Amateurs, Short Wave Listeners and all those interested in Amateur Radio, hearty good wishes for the Christmas Season.

Unlike most countries, Christmas in Australia is a time of warm weather and gay, carefree holiday spirit spent in the open air; a break from the past year's work and problems when many Amateurs give their spare time to finishing off those projects which it wasn't possible to complete during all those working weeks now behind them; a holiday period before commencing a new year.

Whatever you may be doing, wherever you may be, I wish you a happy festive season from my colleagues and myself, and I trust you will find those spare hours off from your other activities to devote to your hobby of Amateur Radio.

1959 has witnessed the conclusion of a milestone in the history of Amateur Radio in Australia . . . the International Telecommunications Union Administrative Radio Conference in Geneva for which you, as Amateurs, subscribed your donation to send your own representative with the official Australian Delegation. The final outcome of this mammoth conference will not be known for

some time yet, although by the time this issue of "Amateur Radio" goes to press you will probably have had a final report from John Moyle, VK2JU, and in the new year you will have the opportunity of hearing him personally address you at your Divisional meeting. You will be advised of the date as soon as practicable and I would ask each and every one of you to set that date aside as a "must".

In the years ahead, we must all actively plan to use the bands we have allocated expressly for our use. If we don't we shall have a hard fight to retain them for the demand on frequencies in the ever widening sphere of communications and the jet age into which we are now moving is difficult to appreciate. But it is huge and a growing danger to our very existence and a matter to which we must on no account turn a deaf ear and a blind eye.

I also extend, on behalf of the Federal Council and Federal Executive, festive greetings to our advertisers, without whose support "Amateur Radio" could not be published. As our Institute membership grows, so will the Institute grow; and as the Institute grows, so, I trust, will the support of our advertisers.

A Very Happy Christmas to you all.

G. MAXWELL HULL,
Federal President, W.I.A.

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A Multiband Antenna System for the Newcomer*

COMBINATION ANTENNA COUPLER AND MATCHING INDICATOR

LEWIS G. McCOY, W1ICP

If you have been searching for a multiband antenna system, this article should be of considerable interest to you. We will describe an antenna coupler for the 3.5 through 28 Mc. bands that has a built-in standing-wave ratio bridge. The s.w.r. bridge can be used for matching and as an output indicator. Also included in the article is the description of a multiband antenna. Whether you are a newcomer or an old-hand, this may be exactly what you have been looking for.

You may have read or heard that an antenna coupler is an unnecessary item in the ham station. Before going any further let's see what a coupler is and what it can do for you.

WHY AN ANTENNA COUPLER?

Many newcomers to Amateur Radio elect to use antenna systems that do not require antenna couplers. Such systems as multiple dipoles, trap-type antennae, and the off-centre-fed type have become quite popular. The reason for the popularity of these systems is that they can normally be attached directly to the transmitter (with a feed line, of course), and be made to work. When an antenna system is used that requires a coupler, the coupler must be adjusted in order for the system to work. As the systems mentioned above do not require couplers, it can be said that they offer "operating convenience." However, to mix a metaphor, you cannot have your cake and get it for nothing! There are many excellent reasons why a coupler should be used and they far outweigh any operating conveniences of the non-coupler type installation.

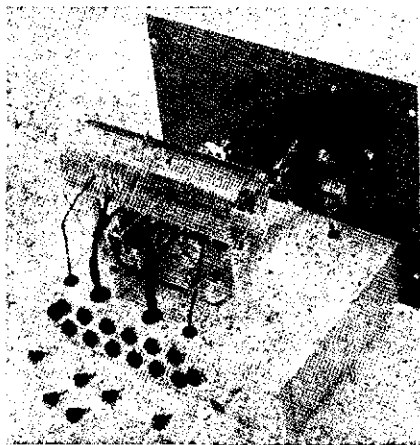
First, an antenna coupler usually eliminates the harmonic problem. We are speaking now of the common problem of second-harmonic radiation (7.4 Mc.) from 3.7 Mc. operation.

In many instances the use of a coupler will eliminate the harmonic t.v.i. problem. If sufficient harmonic attenuation is not achieved with the coupler, a low-pass filter must be used; here again a coupler plays a very important role.

A low-pass filter is designed for a particular impedance of coaxial line, usually 50 or 75 ohms. This line must be reasonably flat (have a low standing wave ratio), in order to prevent damage to the filter components. It is difficult to keep the s.w.r. low on feed lines used with the types of antennae mentioned earlier, at least on all the Amateur bands and frequencies. However, it is a very simple matter to take care of this problem when using a coupler. The normal procedure is to connect the transmitter to the coupler via a short length of coax line. By adjusting the coupler the coax line can be kept perfectly flat on any frequency within the Amateur bands. The ideal place to install the filter is in this length of line.

In many instances, it may become difficult or impossible to couple power from the transmitter to the antenna because the coupling circuit doesn't have enough range. This deficiency can be eliminated by the use of an antenna coupler. With the system described here it is possible to adjust the coupler so that the transmitter is always working into the best load for its coupling circuits.

The antenna system we will describe uses open-wire feeders and here is another advantage in using a coupler. Of all the types of lines used by Amateurs, open-wire feeders have by far the least loss. Also, many other types of lines can be affected by moisture so that their characteristics change. Open wire feeders are not affected by moisture, at least not as much as some other lines.



Two steatite pillars are used to support the coil on the chassis. The bottom of the coil is high enough to clear the rotor of C2 when it is open. Sensitivity control R2 is mounted on the panel below MA1.

All too many Amateurs think of an antenna coupler only in terms of transmitting. By installing the antenna change-over relay or switch between the transmitter and coupler, the latter can be used on the receiver. If you don't think this can be a big help just ask any Amateur who uses such a setup. The coupler provides, in many cases, additional selectivity for the receiver. Strong commercial signals outside the Ham bands have a nasty habit of getting into the receiver, causing image troubles or cross modulation. A coupler helps to reduce this problem.

Before getting into the actual construction of the coupler, let's take up one more point that the newcomer may not be familiar with—series or parallel tuned feed lines. The main purpose of a coupler is just what the name implies, to couple the power from the transmitter to the antenna feed line. The end of the feed line that is attached to the coupler presents a load to the

coupler. With a high s.w.r. whether this load is high or low impedance depends on the electrical length of the feed line and antenna. If it is low it is easy to couple power from the transmitter if a series-tuned circuit is used in the coupler. When the load is a high impedance, parallel tuning should be used. We'll show you how to design your antenna and tell you what type of tuning is required in a moment, but first let's take a look at the coupler.

THE ANTENNA COUPLER

At first glance, Fig. 1, the circuit of the antenna coupler, may appear complicated. However, don't be scared away; it is actually quite simple. The method of changing from series to parallel tuning while maintaining coupling at the centre of the antenna coil is a novel one cooked up by W1DX. As you will find when you read the section of the article on the antenna, the use of series or parallel tuning will depend on the antenna and feeder lengths.

In order to show how the coupler is used for series or parallel connections, we have drawn two simple circuits in Fig. 1, B and C. For series tuning, the feed line is attached to terminals 1 and 2. This splits the antenna coil into two equal parts and puts them in series with the line. When parallel tuning is required terminals 1 and 2 are shorted with a jumper and the feed line is connected to 13 and 14.

Band-changing the coupler is accomplished by shorting out portions of the coils L2 and L3. The taps and leads from the coil are wired to pin packs that can be connected together with shorting jumpers. Normally, the unused portion of the coil should be jumped with the shortest possible line. However, no ill effects were apparent in testing and using the coupler as shown. We had considered a switch for making the coil changes but a suitable switch, one that would fit the requirements of voltage breakdown and mechanical layout, was impossible to find—at least, at prices we were willing to pay. The pin jacks and plugs cost only a few cents each.

The coupler as described will easily handle the Novice 75-watt power limit. Any readers using transmitters in the popular 150-watt class can alter the coupler for this power level by using a variable capacitor with adequate voltage rating for C2. The coil stock used for L1, L2 and L3 should safely handle about 300 watts without overheating so the controlling factor is the r.f. voltage rating of C2.

The s.w.r. bridge utilises a length of RG-58/U to house the pickup wire of the bridge.¹ A double-pole switch is required to switch the pickup lead ends so that either forward or reflected power can be fed to the indicating circuit.

¹ Bounce, "The 'Mickey-Match'," "QST," Nov. 1958; "A.R.," July 1959.

CONSTRUCTION

The unit shown here was built on a 2 x 7 x 9 inch aluminium chassis which is housed in a cabinet. If the reader elects to use a bigger capacitor (greater plate spacing) for C2 a larger chassis than the one specified would be more suitable. Layout of the components is not critical but it is a good idea to use the photographs as a guide.

Use nonmagnetic hardware for mechanical connections wherever possible.

Two steatite standoff insulators, 1/2 x 1/2 inch are used to support the coil. Soldering lugs should be soldered to the first turn on each of the two outside coils. The lugs are then mounted on the standoffs (see Fig. 2).

Steatite standoffs, 3/8 inch high should be used to mount C1 and C2 on the

material can be peeled off. A 14-inch length of No. 20 solid tinned wire, plastic insulation is used for the bridge pickup wire. Mark the braid on the coax 6 inches from one end and 4 inches from the other. Next, bunch the cable together and with a sharp pointed tool make a small opening in the braid at the marked points. Feed the pickup wire under the braid, in one opening and out the other. Stretch the braid out along the cable until about one inch of the pickup wire projects from each opening. Look at the bottom view of the coupler and you will see how the coax is coiled up so that the two pickup wire ends are close to switch contacts. Once we found the correct configuration, a short length of tinned wire was wrapped around the braid and soldered. This holds the assembly in place and makes it easier to handle.

The terminating resistor of the bridge, (R7) is a half-watt carbon 33-ohm unit. Be sure to use a carbon resistor, not wire-wound. A rubber grommet should be installed in the chassis top directly over the switch. This opening is for the lead from the 1N34A diode that goes to R2. When soldering the diode leads hold the wire with a pair of long-nose pliers between the body of the diode and the point being soldered. This will conduct the heat away from the diode, thereby preventing damage to the unit. The sensitivity control, R2, should be mounted below the meter.

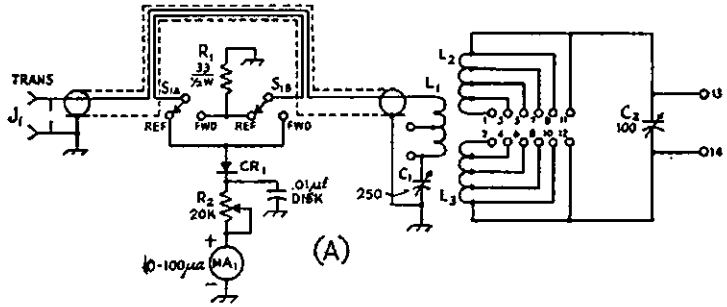


Fig. 1.—(A) Circuit diagram of the antenna coupler and s.w.r. bridge. (B) Series tuning. (C) Parallel tuning.
 C1—250 pF. variable capacitor.
 C2—100 pF. variable capacitor.
 CR1—1N34A germanium diode.
 J1 Coaxial chassis receptacle.
 L1, L2, L3—See Fig. 2 and text.
 MA1—0-100 microammeter.
 R1—33 ohms, 1/2 watt, carbon.
 R2—20,000 ohm potentiometer.
 S1—D.P.D.T. "tone control type" switch.

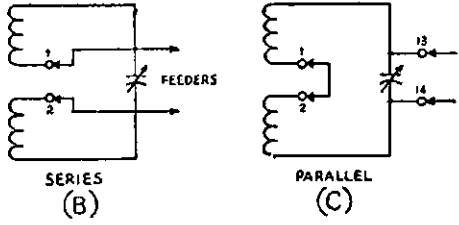


Fig. 2 is a drawing of the three coils—L1, L2 and L3. These three coils are all part of a single length of B. & W. 3907-1 coil stock. This material is 2 inches in diameter, 10 turns per inch, No. 16 tinned wire. Before attempting to make the coils for the coupler, study Fig. 2 so that you are completely familiar with the drawing. With a ruler measure off 68 turns (6-13/16 inches) and cut this piece from the original stock. A hacksaw is a good tool for cutting the stock support bars. Unwind one turn from each end of the piece.

chassis. Both the rotor and stator of C2 must be insulated from the chassis and cabinet panel. An insulated coupling should be used on the rotor shaft. A steatite through-chassis insulator is used for the input connection to bring the lead up to C1.

The coil taps and ends (terminals 1 through 14) are brought below chassis top through four rubber grommets, two 1/2 and two 1/4 inch. Sockets for terminals mount in 3/8 inch holes and are held in place by retaining rings. A simple method for mounting a socket is to place it in the hole, slip the retaining ring over the end and then use a short piece of 1/4 inch diameter pipe to force the retaining ring over the socket. Six plugs are needed for the shorting plugs. The wires for the two longer shorting lines are 3 inches long and the short one is 2 inches long.

THE ANTENNA SYSTEM

Before discussing adjustment procedures let's take a look at the antenna system. There are a few simple rules that should be followed (if possible) when installing an antenna. Try and get the antenna as high as possible. Also, keep it clear of nearby objects. In other words, don't run it alongside rain gutters or through branches. Dress the feed line away from the antenna at right angles, or as near so as possible. Many Amateurs bring their feed line straight down from the antenna to a post or support and then into the shack.

However, if you cannot follow the above rules, it doesn't mean an antenna won't work. For example, if you are cramped for space you can drop the ends of the antenna down in order to increase the length. If the antenna must run near metal objects don't scrap your plans. Put the antenna up and try it; you may be pleasantly surprised.

How long should the antenna be? The answer to this question depends primarily on the lowest frequency band

MATCHING INDICATOR DETAILS

A 24 inch length of RG-58/U is needed for the s.w.r. bridge circuit. The first step is to remove the vinyl covering from the cable. If you score the covering with a knife blade the

This will leave a 66-turn coil. Count in from the end of the coil and cut the wire at the 26 1/2 turn. Do this at each side. We used a pair of side cutters to make the cuts and slightly bent the adjoining turns away from the cutting point in order to get at the wire. Unwind a half turn from these points and this will leave you with three separate coils, all on the same support bars. Refer to Fig. 2 for the tap points. You will find that if you bend the wires adjacent to the tap points in toward the axis of the coil you'll have plenty of room to solder the tap leads onto the coil.

The link, L1, is too large for 14, 21 and 28 Mc., so part of it must be shorted out when using these bands. Two soldering lugs should be soldered to the 1st and 6th turns of the link counting from the C1 end. The lugs are mounted at the top of the coil and bent so their ends are close together. An alligator clip can be used to short the two lugs. Use a copper clip as iron tends to heat up when used in r.f. power circuits. Incidentally, this is an important point to remember when doing any transmitter construction work involving r.f. circuits. Iron or steel will heat up and actually steal power from the circuits.

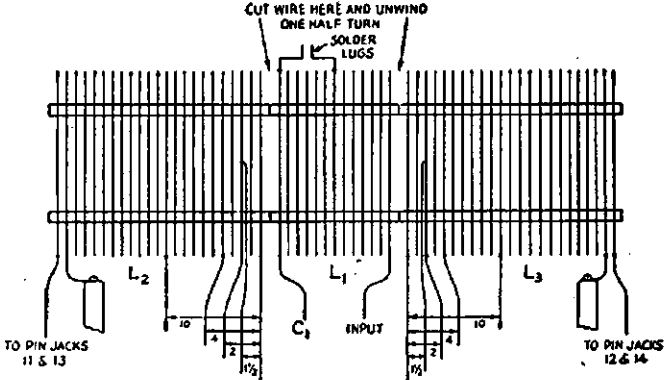
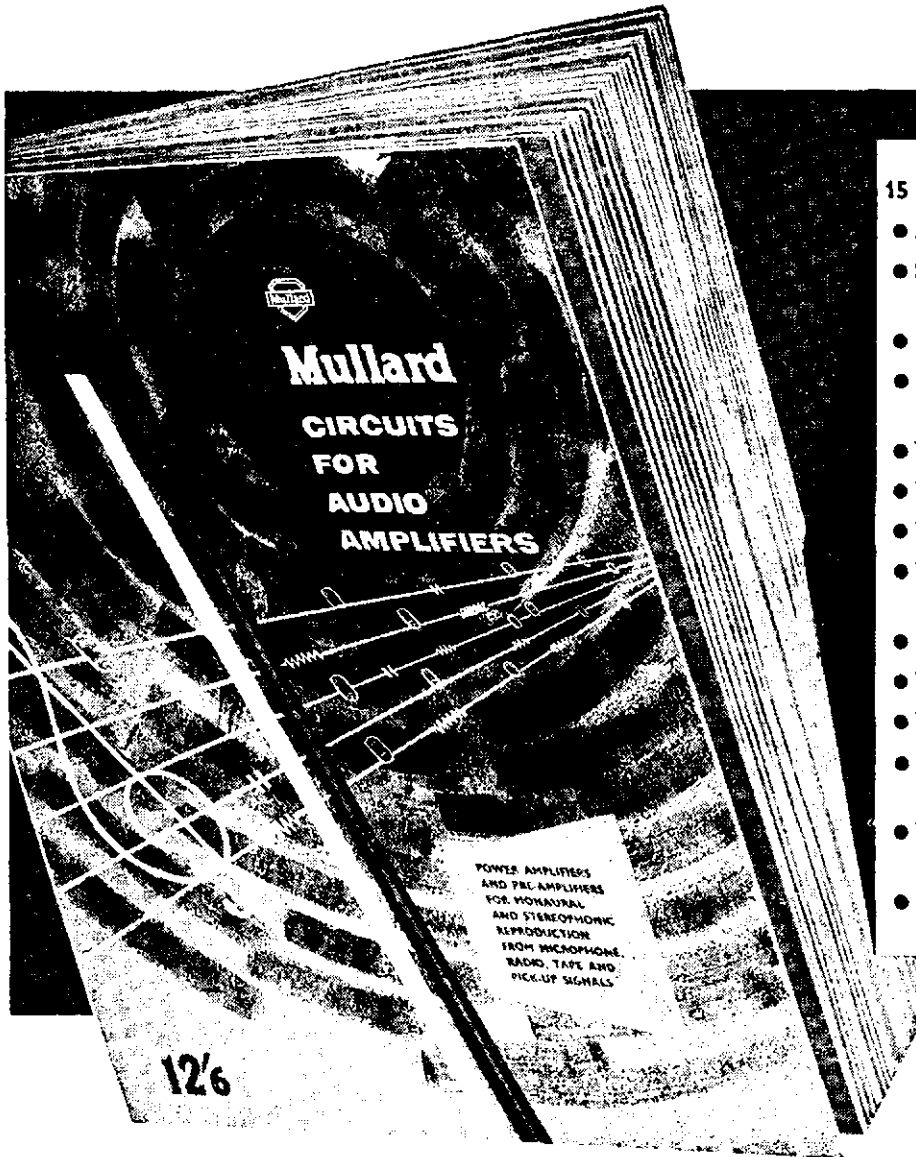


Fig. 2.—Drawing of the antenna and link coils. L1, L2 and L3. The numbers indicate the terminals to which the coil taps and leads are connected.

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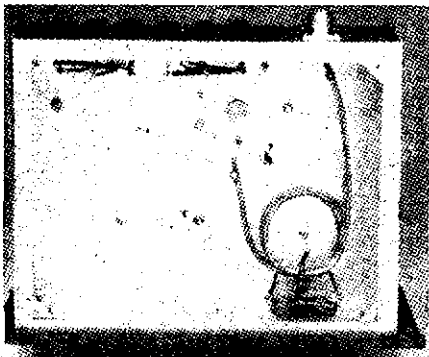
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you plan on using and, of course, how much space is available. We will assume that you want the antenna for 3.5 Mc. as the lowest band. If it is long enough for this band it will be adequate for the higher bands.

Fig. 3 gives the information you'll need to find the antenna and feeder lengths. The length of the antenna, A, should be at least a quarter wavelength long at the lowest frequency band. Otherwise, the effectiveness of the antenna will suffer. When you make the system according to the formula $(A \div 2) + B$ equals a quarter wavelength, or multiple thereof, you will simplify the coupling problems. For an odd number of quarter wavelengths you will use series tuning at the coupler, and for an even number, parallel tuning.

A common problem is finding enough space for the antenna, the average city lot being too small for a half-wavelength antenna on 3.5 Mc. As mentioned earlier, the antenna can be shorter than a half wave and still work. The feed line can be lengthened or shortened to make the system fit the formula.



This view shows the method for connecting the coax input line and pickup wire. The terminal jacks for the coil leads and taps are mounted along the rear chassis wall.

You can make your own open-wire feeders or use the t.v.-type open-wire line. Don't use solid-dielectric twin-lead for the feeders; this type of line is satisfactory for some types of feeders but not in tuned lines. You can use a short run of the transmitting type twin-lead to go from the coupler to the feed-through insulators on the wall of the shack. The insulated twin-lead will simplify your installation problems, but don't use any more than you have to. For the antenna, you can use No. 14 Copperweld or a similar type. (Electric fence wire makes good antenna material.) Use soft-drawn wire in a home-made feed line.

GETTING THE SYSTEM WORKING

Connect the coupler to the transmitter with a length of 52-ohm coax, either RG-58/U or RG-8/U. If you are using a low-pass filter it should be installed in this length of line. Also, the antenna relay should be inserted at this point. Attach the feed line to the coupler and make the connections for series or parallel as required. (See Table 1.) Set R2 in the indicator circuit at maximum resistance and switch S1 to re-

lected power. Tune up the transmitter and resonate the final amplifier for plate meter dip. If you have an output drive control it is a good idea to tune up with reduced output. Next, adjust C1 and C2 in the coupler for minimum reading on the s.w.r. indicator. You will probably have to decrease the resistance of the potentiometer, R2, in order to get a reading. When C1 and C2 are adjusted for minimum reading (this is usually zero or close to it), switch S1 for forward power and set R2 for about half-scale meter reading. Now you can tune up the transmitter for full loading as indicated by your plate meter and the bridge meter. You may have to reduce the setting of R2 to keep the needle on scale. Incidentally, once your coupler is adjusted for the minimum reading or matched condition you don't have to change the coupler adjustments for that particular frequency. All loading adjustments are made at the transmitter.

TUNING INFORMATION			
Parallel		Series	
Connect feeders to 13 and 14, jumper 1 and 2.		Connect feeders to 1 and 2.	
Short the following terminals with jumpers:—			
3.5 Mc.	—	—	—
7.0 Mc.	11 and 9	—	12 and 10
14.0 Mc.	11 and 7	—	12 and 8
21.0 Mc.	11 and 5	—	12 and 6
28.0 Mc.	11 and 3	—	12 and 4

Table 1.

Mark down the control settings of the coupler for this particular frequency and then proceed to the next higher band. Keep a record of the settings and it will be a simple matter to set the coupler up in a hurry.

If you should find that you cannot get a matched condition on some band, you may have to try different tap points. However, be sure to try both series and parallel tuning first.

If you are looking for additional information on antenna masts, how to support the antenna, construction of feed lines, and so forth, we suggest you study "The Radio Amateur's Handbook" and "The A.R.R.L. Antenna Book."

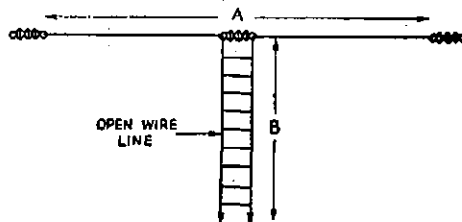


Fig. 3.—The length A should be more than a quarter wavelength at the lowest operating frequency. When you determine the length of A to half the distance, add a sufficient length of feed line (B) to equal a quarter wavelength or multiple thereof. For example, let's assume you can put up an antenna 80 feet long and you plan to operate on the 3.7 Mc. Novice band as the lowest frequency. From the formula:

$$246 \text{ divided by } 3.7 \text{ equals } 66.5 \text{ ft.}$$

$$66.5 \text{ minus } 40 \text{ equals } 26.5 \text{ ft.}$$

$$\text{the feeder length, or}$$

$$2 \text{ multiplied by } 66.5 \text{ equals } 133$$

$$133 \text{ minus } 40 \text{ equals } 93 \text{ ft.}$$

This can be carried out for greater feeder lengths, depending on the requirements of the installation.

A SIMPLE SQUELCH CIRCUIT

V. KERR,* VK4LK

A QUICK glance at the accompanying circuit diagram will soon recognize the "evergreen" clamp tube, so popular with pentode class C transmitter stages. For those who wish to try a squelch circuit in the output of an existing receiver, and not wishing to go to the complication of some squelch circuits, this particular layout will be the answer.

It has good sensitivity and works without complication. No claim is made for the originality of the idea, having been used in commercial equipment for many years. For the most satisfactory result a pentode first audio in your receiver is necessary, although it is possible to use the plate circuit of a triode first audio in a like manner with passable results.

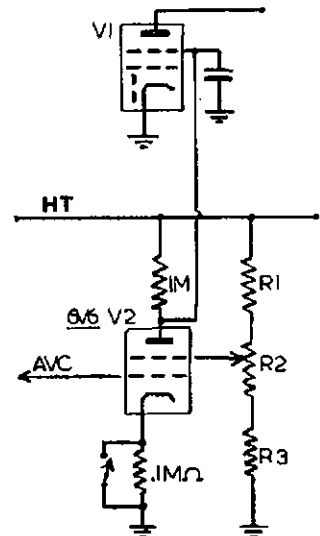


Fig. 1.—Squelch Circuit.

The use of a 6M5, 6AG7 or other similar tubes may be even better as bias requirements are lower and a.v.c. will cause squelch to open on a weaker signal.

- V1—Pentode 2nd detector.
- V2—6V6, 6AQ5, etc.
- R1—Two 47K ohm 1 watt resistors paralleled.
- R2—10K ohm wire wound pot.
- R3—Two 7K ohm 1 watt resistors paralleled.

The only adjustments necessary to set the squelch in operation after having wired it into the circuit, are to close the switch, shorting out or grounding the cathode circuit of the 6V6 (6AQ5, etc.) and adjust the 10,000 ohm potentiometer until the output of the receiver cuts off without any signal being received, that is, anything passing through the receiver from the front-end to generate an a.v.c. voltage.

As soon as a signal is tuned, a.v.c. voltage generated, the bias generated on the grid of the 6V6 will allow normal voltage on the screen of the second detector, with the audio output of the receiver as usual.

Opening the switch in the cathode circuit of the 6V6 will render the squelch inoperative, allowing normal audio stage function.

* Dalrymple Road, Charters Towers, Qld.

ELECTRICAL SHOCK: FACT AND FICTION*

BY DANIEL P. PETERS

DO YOU BELIEVE THAT . . .

Electricity kills by burning its victims to death?

Small currents are less harmful than large ones?

Low voltages are not lethal?

There are no harmful after-effects if you survive?

If so, here is the shocking truth!

ANY man on the street can probably supply you with the information that an electrical shock can be lethal. However, surprisingly few people actually know how or why. For those who work in the presence of voltages and currents that may be harmful, ignorance of the true nature of shock is dangerous. Knowing what actually happens is the first step toward taking the proper precautions and, in the case of electrical shock, there are all too many misconceptions. For example:

FICTION: Electricity kills by burning its victims to death or "shorting" them out.

FACT: Medical records prove that electrical currents great enough to cause actual burning kill less often than do currents of much lower magnitude. The notion that an electrical current "shorts out" its victim in the way that lightning can short out an electrical circuit, while closer to the truth than the "burn" theory, is still misleading. Actually, electricity kills by overriding the control that the nervous system exercises over the body.

The human body has sometimes been compared to an automatic factory. Muscles are its motors. Master-minding the operation of these motors is that fabulously complicated calculator—the brain. This message centre sends instructions to the controlled parts of the body via an intricate electrochemical network we know as the nervous system. Doctors take advantage of the electrical nature of the nervous system with electrocardiographic and electroencephalographic equipment, which measure the small impulses associated with heart and brain, respectively.

If overridden by an outside current, the electrical impulses of the nervous system lose control of body functions. During brain surgery, for example, doctors have applied small potentials to various sections of the brain that have caused movements of limbs and induced mental images. Through such electrical prodding, much is being learned about the mysteries of the mind.

Not so helpful, however, are the uncontrolled currents that flow during electrical shock—currents that swamp out the signals going to various parts of the body. Particularly dangerous are such currents that enter the heart and respiratory centres. Thus, a key factor in death by electrical shock is

the path of the undesired current within the human body, as well as its magnitude.

Death following shock is generally caused by one of two direct effects: ventricular fibrillation or respiratory-centre paralysis.

To understand ventricular fibrillation, we should know a little about how the heart operates. Basically, it is a pump forcing blood through the body. Controlling the heart muscles is a minute, electric current occurring periodically in the right auricle of that organ. If the conduction system of the heart is disturbed, say by an outside electric current, the muscles respond in a haphazard fashion, rendering the organ useless as a pump. Known as centricular fibrillation, this phenomenon generally causes death since the vital body organs are not supplied with fresh blood.

Respiratory-centre paralysis is the second most lethal effect of electrical shock. Normal breathing is controlled by a stimulus from a section of the hindbrain known as the *medulla oblongata*. The electrical stimulus travels through a complex nerve network to the breathing muscles and lungs. An outside current can easily paralyse the network and cause breathing to stop. Actually death from shock can be caused by respiratory-centre paralysis, by ventricular fibrillation, or by both.

FICTION: Small currents are less harmful than large ones.

FACT: For obvious reasons, the exact intensity of current that will cause death in a human being is not easy to determine. However, much research has been conducted in this direction. One careful study in this area was undertaken by researcher L. Alexander and published by medical organisations on the American continent about two decades ago. Table 1 presents key information extracted from his report. There are other complications showing somewhat different tabulations—such factors as whether males or females are involved, whether the current is a.c. or d.c., and the methods used in research may affect the data—but the table will serve as an illustrative guide.

Current in Amperes	Effect
0.0002-0.0003	Tap.
0.00075	Pinch.
0.001	Grip.
0.005-0.015	Unpleasant stimulation.
0.015-0.019	Paralysis of muscles through which current flows.
0.025	Possible permanent damage to tissues and blood vessels.
0.07 and higher	May be lethal.

Table 1.—Shock current intensities and their effects.

Currents of 0.07 to 0.09 ampere generally cause death by ventricular fibrillation, if they pass through the chest. However, much lower currents can also prove fatal. A current of only 0.015 ampere passing directly through the chest can render the victim incapable of releasing himself from the circuit, while simultaneously paralyzing the muscles of the diaphragm needed in breathing. Unless he is released from the circuit with outside help, he will die from asphyxia even though the heart and respiratory centres are not affected directly.

From the chart we can also see why people say that a charged conductor "holds" its victim. Once muscle paralysis occurs, he can do nothing to free himself. However, in some cases, muscles contract with enough violence to "throw" the victim. This, of course, may cause secondary injuries if he hits something in his flight, but also may be the means of saving his life. A larger current would be more likely to do this than a smaller one. More will be said on this score later.

FICTION: Low voltages are not lethal.

FACT: Thus far we have considered only the effects of a current passing through the body. However, voltage is the force that determines current magnitude. The amount of current for a given applied voltage, of course, depends on resistance—and the resistance of the human body varies widely. It depends, among other things, upon the path of current; the health of the individual; the duration of the current flow; the condition of the skin (wet, dry, etc.); and the area of contact. Measure the resistance of your body from arm-to-arm under various conditions; you will find that, while perspiring freely on a warm day, the resistance is so low that 25 volts could produce sufficient current to cause death. Confirming this, there are cases on record of deaths caused by 32-volt farm lighting systems. Yet, under more favourable conditions, the 120-volt house lighting system would cause only a tingle!

FICTION: High voltages are always more dangerous than low ones.

FACT: Strangely enough, shock from potentials greater than 1,000 volts may be less dangerous than those from lower voltages. The reason for this is that the high currents associated with high voltages may cause all muscles—including those of the heart—to contract suddenly and violently. The heart muscles may contract to such an extent that fibrillation cannot occur. In such cases, the heart may resume normal action if the victim is released in three or four minutes. A recovery rate of 62% among cases where persons were knocked out by potentials above 1,000 volts was observed during a study made in 1933. The corresponding rate at much lower voltages was only 39%.

(Continued on Page 7)

* Reprinted from "Electronics World," May '58.

**ELECTRICAL SHOCK:
FACT AND FICTION**

(Continued from Page 6)



During Apprenticeship Week, September, 1959, the Grafton Group of the N.S.W. Division of the W.I.A. conducted a Radio Exhibition and operated a station using the Division's call sign, VK2AW1, at the Grafton Technical College. The photograph shows the Grafton Amateurs, left to right: seated, Geoff, VK2SR; Roy, VK2NY; Terry, VK2JS; Peter, VK2TB, and Bill, VK2OE.

Not only the voltage and current magnitudes but also the current body paths are important. Any route involving the heart or brain is dangerous, as pointed out earlier. The "Journal of Industrial Hygiene" reported in 1925 that, of a number of cases involving fatal shock at voltages below 250, 90% of the victims had marks on their left hands. This indicates that shocks through the left hand—hence, nearer the left side and heart—are much more dangerous than those through the right hand. Thus, if you tend to keep one hand in your pocket while near live circuits, make it the left.

FICTION: There are no harmful after-effects if you survive a shock.

FACT: If you suffer a shock and have sustained no apparent injury, it may not mean that your troubles are over. Electrical shock sometimes damages nerve tissue. This may cause a wasting away of muscle—a slow, progressive disturbance that may not become evident for weeks or even months. Other delayed effects may produce personality changes, amnesia, mental inertia, blood-vessel diseases, cataracts, destruction of the pancreatic tissues, and heart conditions.

So much for the effects of electric shock. What should be done if you see someone rendered unconscious by electricity?

Every person who works near electrical equipment should acquaint himself with rescue techniques.

The first step is to break the connection between the victim and the power source. If possible, do this by turning off the power. The next best thing is to remove the victim from the voltage source—without endangering yourself. Use a wood board or other non-conducting object. As soon as you can touch the victim safely, apply artificial respiration.

Speed is essential. Any delay at all greatly reduces the chances of recovery. Of some 600 cases studied, over 70% of those receiving artificial respiration within three minutes recovered. Just one more minute of delay dropped the figure to 58%. If there is no heart or respiratory action and treatment is delayed five minutes, death is virtually certain.

If you are alone, do not take time to go for help. Start artificial respiration immediately. If the person can be saved, you can do it as well as anyone. And don't stop even if the victim appears dead. Eight hours have elapsed, in some cases, before the victim responded. The only sure sign of death is rigor mortis—and only a physician should judge whether that condition exists.

Above all, don't let the victim be you!

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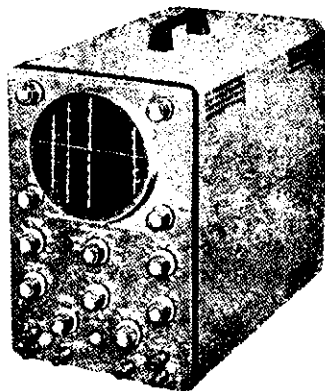
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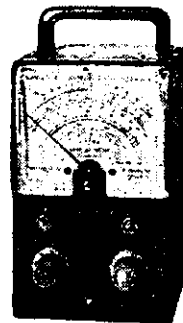
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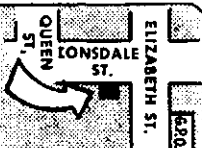
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AUTOMATIC CHANGE-OVER AND RECEIVER MUTING

RALPH ROSENBAUM, W5ECP

NO BETTER endurance and practicability tests can be given to a piece of electronic equipment than during Field Day. On Field Day different operators will often find electrical faults in equipment, faults which go unnoticed by the owners. Sometimes, unfortunately, these defects are not discovered until the equipment breaks down under field conditions.

For example, I remember the disaster which occurred during the last two operating hours of the 1958 Field Day Contest. The Field Day operators at W5EKK were working over forty stations per hour until, to their horror, they saw a small cloud of smoke rise from my de luxe break-in system and fill the operating tent with the pungent odor of a burnt carbon resistor. The receivers immediately went dead, and it was obvious that the t.r. switch in my break-in system had failed.

● In the break-in system described here, W5ECP combines the features of earlier individual units in a single package. No alterations in transmitter or receiver are required.

break-in system. Keying the transmitter directly would eliminate the keying relay problem, and using r.f. energy as the triggering agent would enable the new system to function automatically on c.w., phone, and s.s.b.

T.R. SWITCH

The break-in system is composed of two sections—the t.r. switch (Fig. 1A) and the audio-muting and keying-monitor circuits (Fig. 1B). The latter circuits include an audio-muting switch, a side-tone generator for c.w. monitoring, and an audio amplifier to drive a speaker.

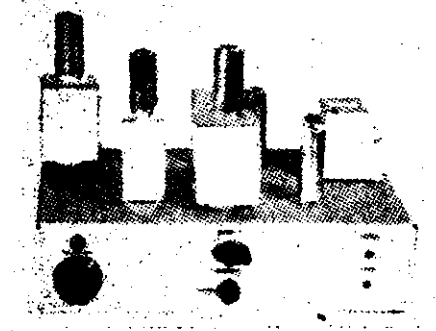
Although I had a choice of several t.r. switching circuits, I selected W3LYP's arrangement¹ for several reasons. First, he had tested the switch with a kw. of s.s.b. power. This would tend to indicate that a higher s.w.r. could be tolerated at lower power levels. A t.r. switch for Field Day use should meet this requirement since the

s.w.r. on the feed lines is often very high. The gain offered by his circuit meant that my present preamplifier could be discarded. Last, W3LYP's circuit works automatically when r.f. is applied to its input.

In W3LYP's circuit (Fig. 1A), one triode section of a 6BZ7 is used as a grounded-grid amplifier coupled to the transmitting antenna. The second triode section is used as a cathode follower feeding the receiver. The two stages are coupled using a multiband tuner, C2L3L4, which covers 10 through 80 metres without switching. The tuning is set once for each band. Normal bias for VIA is provided by the d.c. drop across the resistance of RFC1. When the transmitter is keyed, a high bias is developed across the grid leak R1, cutting the stage off almost completely. A few months ago W8EJ came out with a t.r. switch² which would make an ideal substitute for the builder who would like to eliminate W3LYP's grid tank circuit.

MUTER AND MONITOR

The audio portion (Fig. 1B) in this system is a modification of W6ICB's "Monoclipper."³ Although this circuit has many fine qualities, I found that the clipper circuit he employed was an inconvenience. Since many of the



The complete t.r. monitoring unit is built on a 7 x 12 x 3 inch aluminium chassis. The plug-in turret-socket units are a convenience in construction and adjustment. The one at the left contains the 6BZ7 and associated components. The 6C4 audio oscillator unit is next to the right, while the one at the centre houses the 12AX7 muter/amplifier. The shielded tube the 8AQ5 output tube.

Nevertheless, there existed a very good reason why the failure had taken place. The break-in system had to be keyed both on c.w. and phone if the muting and t.r. switching units were to function properly. This caused the failure since, during rapid band changes to phone operation, the operators would forget to key the break-in system. The disastrous result was that the t.r. tube and its components had burned out. In addition to this main electrical weakness, I received several complaints that the break-in relay used to key the transmitter was unable to follow the high speeds of the bug.

After Field Day I was so disappointed with my break-in system that I decided to make a different approach to the keying problem. In contrast to the custom of keying a transmitter by a break-in system, I decided that the r.f. power output from the transmitter must be the triggering agent for the

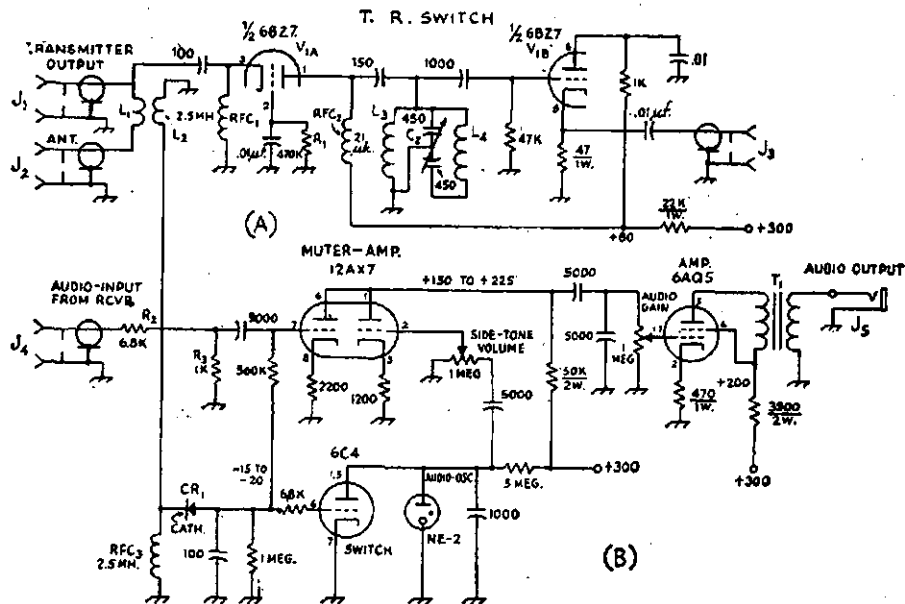


Fig. 1.—Circuit of W5ECP's break-in system. Capacitances less than 0.01 μ F. are in pF. Resistances are in ohms and resistors are $\frac{1}{2}$ watt unless marked otherwise.

C1—Dual 450 pF. variable (b.c. type).
 CR1—1N34 crystal diode.
 J1, J2, J3—Coax receptacle or phono jack.
 J4, J5—Open-circuit jack or phono connector.
 L1, L2—See text.
 L3—23 turns $\frac{1}{2}$ inch diam., 16 turns per inch.
 L4—19 turns 1 inch diam., 32 turns per inch.

R1—Blocking-bias resistor.
 R2, R3—Signal voltage divider (see text).
 RFC1, RFC3—2.5 mH., 125 mA. r.f. choke.
 RFC2—21 μ H. r.f. choke.
 T1—Audio output transformer, 5,000 ohms to 3.2 ohms, 5 watts or more (500 ohm tap if headphone operation is desired).

* Reprinted from "QST," September, 1959.

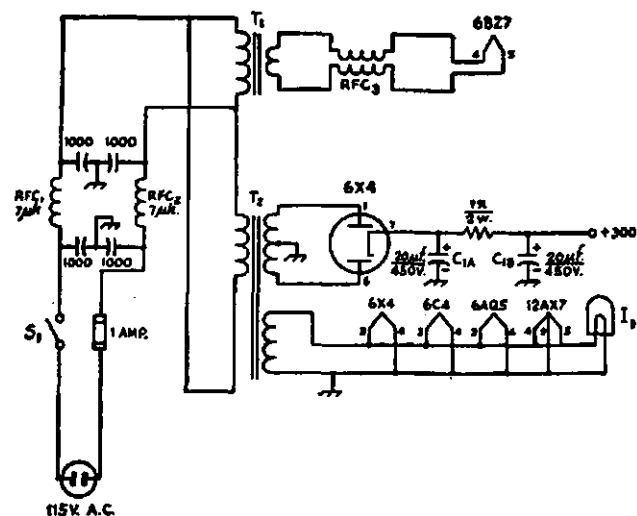


Fig. 2.—Circuit of the power supply section of the break-in system of Fig. 1. Unless otherwise indicated, capacitances are in pF. Capacitors marked with polarity are electrolytic. Resistance is in ohms.

- C1—Dual 20/20 μ F. 450 volt electrolytic.
- I1—6.3 volt panel lamp.
- RFC1, RFC2—7 μ H. r.f. choke
- RFC3—See text.
- S1—S.p.s.t. switch attached to 6AQ5 audio gain control.
- T1—6.3 volt, 1 amp. filament transformer.
- T2—Power transformer, 700 volts r.m.s., c.t., 70 mA. with 6.3v. 2a. winding.

present receivers have well-developed a.v.c. and noise-limiting circuits, I converted the clipper circuit into an audio-amplifier circuit. W6ICB's audio circuit is triggered by negative bias which is obtained by rectifying r.f. energy coupled from the hot "inner" conductor of the coax line. This bias cuts off both the triode muting section of the 12AX7 and the 6C4 which is conducting so heavily that the voltage on its plate is not great enough to trigger the neon oscillator. When the neon oscillator is fired the side tone is amplified by the other triode section of the 12AX7 before it reaches audio amplifier. I found that the keying of the side tone is sharp and pleasant.

Depending on the signal voltage level at the input of the 12AX7, the audio output from the receiver can be either muted completely through the receiver's audio gain-control range, or muted over only a portion of its range. In my set-up, if the signal is taken from the receiver's speaker voice-coil terminals, the input to the 12AX7 is so low at all settings of the receiver's audio gain control that the output from the muter is completely cut off. However, if the signal is taken from the high impedance headphone jack of the receiver, output from the muter will be cut off completely over only about half of the receiver's audio gain-control range. When the gain is increased, the signal input to the 12AX7 overrides the bias, and output from the muter is not completely cut off. This permits direct monitoring of the transmitter signal when the receiver audio gain control is advanced. The point at which muting starts and stops is governed by the values used in the voltage divider consisting of R2 and R3. If the output from the receiver's headphone jack is not sufficient to overcome the 12AX7 bias, R2 should be decreased and R3 increased, keeping the total resistance the same. In some cases, it may be possible to eliminate these two resistors entirely, connecting the input coupling capacitor directly to the input terminal.

CONSTRUCTION

I used plug-in turret sockets. Although the cost is high, the sockets are certainly worth the money when experimental work is being done. Repair time is kept to a minimum since all

components are easily accessible. The sockets not only look neat on a chassis, but also make wiring and lacing under the chassis very easy. I would suggest that the builder use either these plug-in turret sockets or standard turret sockets in the construction of this system.

Although any construction practices may be followed, I suggest that the builder observe the following:

- (1) The t.r. switch circuit should be isolated from the other unit, and its components should be placed as close

ied from unity to three db on the different bands.

I found that a 12 x 7 x 3 inch chassis gave ample room to mount all parts. Since the potentiometer provides the necessary attenuation of the side tone during phone and s.s.b. operations, I did not include a switch in the 6C4 circuit.

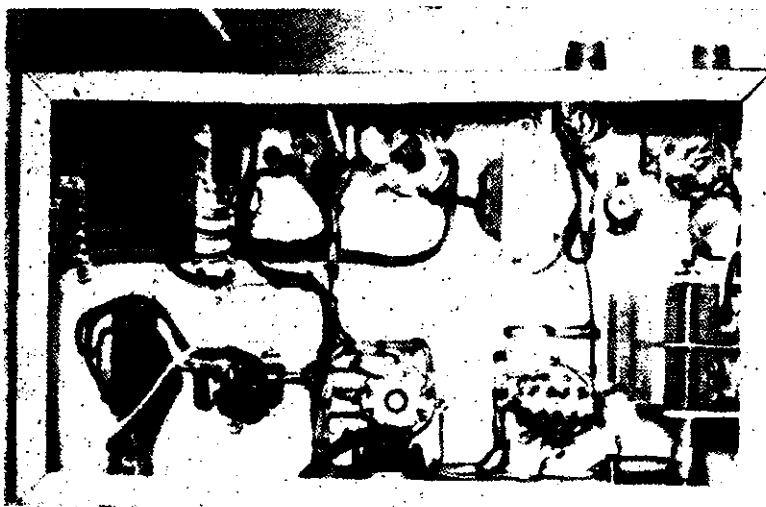
Fig. 2 shows the circuit diagram of the power supply section. The heater of the 6BZ7 should be isolated from ground so it is fed through a bifilar choke, RFC3, from a separate 6.3 volt transformer. RFC3 is made by winding two strands of No. 26 enamelled wire simultaneously on a $\frac{1}{2}$ inch diameter form to a length of 1 $\frac{1}{2}$ inches.

TESTING AND TUNING

The output power from the transmitter and the s.w.r. on the antenna feedline will determine the negative triggering bias for the audio circuit. Since r.f. coupling yielding more than 60 volts will damage the 1N34 diode, the amount of coupling from the inner coax wire should be carefully adjusted to obtain between -15 and -20 volts.

The first step in adjusting for proper negative voltage is to couple the break-in system at some point in the antenna feed system where the s.w.r. is less than 5 to 1. If an antenna coupler is employed, the unit should be placed between the coupler and the transmitter.

When the power output from the transmitter is between 50 and 100 watts, the bus wire joining the two female



In this under-chassis view, the power transformer and speaker output transformer are at the left, and the separate filament transformer for the 6BZ7 and the multi-band tuner are at the right. The monitor pick-up, L1, L2, is at the coax connector nearest to the filament transformer.

to the antenna coax connectors as possible. Also, the lead from the coupling coil L2 to the input of the 1N34 diode should be short.

(2) Another ground wire should be run from the grid tank circuit of the t.r. switch to a common ground connection in the 6BZ7 circuit.

(3) The leads connecting the tank-circuit components should be kept short, and the tank-circuit coils should be placed in the open.

(4) Low voltage should be maintained on the plates of the 6BZ7 to prevent high frequency oscillations. Gains var-

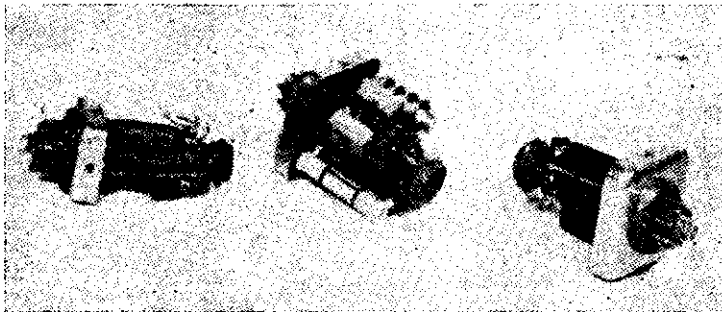
antenna coax connectors should have a three-turn coil L1 at its centre. The diameter of the coil should be less than $\frac{1}{2}$ inch. The bias coupling coil, L2, fits over L1. The diameter of L2, which consists of twelve turns, should be large enough to allow a clearance of $\frac{1}{4}$ inch between the two coils. Both coils are wound with No. 18 wire. The coils are then soldered in place along with the 100 pF. capacitor.

If the negative bias is too high, the builder should lift the end of L2 from ground. There should be a drop of about 5 volts. With power outputs be-

tween 100 and 500 volts, L1 should be eliminated and a straight wire should join the two female connectors. The proper number of turns on L2 should be determined experimentally.

With power outputs greater than 500 watts, a straight wire supported on the stand-off insulators and running parallel to the first wire will probably pick up sufficient r.f. energy.

Remember that if the s.w.r. on the line to which the unit is coupled has not been previously checked, the turret socket housing the 1N34 should be pulled from its octal socket to prevent damage to the diode.



Interior views of the three plug-in assemblies. Left to right, they are for the audio oscillator, t.r. switch and the muter/amplifier.

Where the unit may be used in Field Day installations, or frequently changed from one antenna system to another, it might be a good idea to shunt RFC3 with a variable resistor (pot.) which should first be turned so as to short out the choke, and then gradually advanced until the signal input to the 1N34 is just enough to trigger the muter and side-tone generator. A more expensive diode with a higher inverse voltage rating would be another solution.

I sincerely hope that the builder will have as many enjoyable hours of operating with this system as I have had!

TRANSFER OF P.M.G. RADIO BRANCH HQ. ADMINISTRATION

Members are asked to note that as from Monday, 2nd November, 1959, the offices of the Radio Branch, Headquarters Administration, are now located on the First Floor, Electrolytic Zinc Building, 390 Lonsdale Street, Melbourne, C.I. (On the northern side of Lonsdale Street on the corner of Hardware St., about midway between Queen and Elizabeth Streets.) The telephone for general enquiries will be MF 5551.

Correspondence or enquiries calling for attention by the Victorian Administration of the Radio Branch, should continue to be directed to the Superintendent, Radio Branch, Postmaster-General's Department, 425 St. Kilda Road, Melbourne, S.C.2 (Telephone: BM 2873).

Technical Correspondence

GATED SCREEN MODULATOR

Editor "A.R.," Dear Sir,

Having been interested in "cheap" methods of modulation for some years, I noted with special interest the article in "A.R." Jan. 1956 by VK2AYB and made a mental note to "have a go at it sometime." However, I did not get round to it.

About a month ago I mentioned the matter to another VK6 who was having trouble with his grid modulation. Later I sent him the circuit and when he experienced some bother, I made one up to find out why he was having trouble. It quickly became evident that the trouble he was having was not the fault of the "Gated Screen".

I have since had numerous QSO's during which I have changed from the generally used plate and screen modulation, using 807s in AB2, to the "Gated Screen" modulator which is almost identical to the published circuit. On very few occasions has the party at the other end been able to notice the difference. When they have been informed of the change and given another comparison, some of them have commented, "Well, perhaps the 'Gated Screen' does not sound as full-bodied"—and normally I modulate fairly heavily.

I would recommend to all those having bother with control, or screen grid modulation, and to those desiring—for any reason—a "cheap" modulator, to read again the above mentioned article and "give it a go"; I feel sure they will not be disappointed, thanks are due to VK2AYB.

—L. G. Wilson, VK6LG.

EDWARD AND HIS BEAM

You've heard all about Young Albert
Who got et up by lion too Zoo.
Well this is about our Edward
How he got mucked up, too.

You remember 'twas lion named Wallace
Who swallowed our Albert at Zoo
Well, 'twas a VK5 down at Lincoln
Who got our Edward in poo.

When Eddie went to work DX
He found himself in mess
So he went up to drawing room
And he had word with Bess.

"Tomorrow I'm buildin' ZL Spech."
Said Edward to his spouse,
"Not with your blinkin' form, you won't
You'll wreck the flamin' house!"

So Edward dreamt of his ZL
How he worked a hundred countries at will,
How he worked the Abominable Snowman,
An' was hail'd as the ace from Townsville.

Next day he gathered conduit,
Wire an' rusty nails,
And went to work with vigor
Amidst the neighbours' wails.

He worked and he worked for a fortnight,
Till array spread all over the sky.
Then pressed little switch on transmitter
And his feed line started to fry.

Not daunted by disappointment and failure
As such must surely seem,
He took grid dip and field glasses
And hid himself to his beam.

Whilst watching P.A. through field glasses,
From a perch all studded with nails,
Some clot looked up and shouted,
"Say, mate, what 'orse 'as drawn rails?"

Now our Edward is slow to anger
But now he grew livid with rage,
Said: "Go talk to your clobber at Five Dock,
You both should be in a cage."

Three months to the day of erection,
Weak sigs were heard from the north.
All the Hams in VK were alerted
And swung their beams backward and forth.

'Twas a VK2 down at Five Dock,
Who first heard the call of distress.
Appears our Edward had some kind of trouble
And was really doing his block.

He swore and he swore like a trooper
Till air was considerable blue,
And said here stick your beaut. ZL Special,
I'll build me a G4ZU.

Low Drift Crystals

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ACCURACY 0.02% OF STATED FREQUENCY

3.5 Mc. and 7 Mc.

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REMEMBRANCE DAY CONTEST, 1959, RESULTS

COMFORTABLE WIN BY TASMANIA

HONOURS this year go to Tasmania for winning the Trophy with a comfortably margin from Western Australia, the present holders of the Trophy. The participation percentage was the greatest factor in determining the results and in this regard credit must be given to Tasmania and Western Australia for their organisation which was clearly apparent from the small number of logs not submitted from those States. While no accurate figures are possible for the number of missing logs on account of the possibility of mistaken calls, the approximate number is as follows: VK2 53 (43% of the total starters), VK3 36 (30%), VK4 17 (30%), VK5 23 (26%), VK6 2 (2%), VK7 1 (1.5%).

An award has been made to South Australia for gaining the Highest Log Average.

A number of logs were received which, although accurate, were poorly set out and made the task of the checkers more arduous. A sudden drop in accuracy in one log caused the Committee some concern until it was realised that the young hopeful (?), who had copied the log out, had got the call signs and the serial numbers out

of phase for a complete page! Another log became famous for being compiled on a sheet of paper nearly as large as a sheet of newspaper. Still others thought it would be easier for the Committee if the phone and c.w. contacts were shown separately, but of course this only made it more difficult to locate a particular contact from the serial number.

In the Receiving Section, some excellent listeners' logs were received. It was pleasing to note the interest shown by three Scout groups who submitted lengthy logs. However, there is no provision in the present rules for a group effort; consideration could well be given to incorporating a group section in next year's contest. Two of these logs did not comply with Rule 3 of the Receiving Section, but the third log (from the Second Wilston Senior Scout Group) was accurately compiled and the lads deserve special commendation for their efforts.

In order to make the results in the transmitting sections more interesting and informative, the number of contacts is shown in addition to the score for each competitor.

REMEMBRANCE DAY CONTEST 1959 RESULTS

State	Total State Score	Average Top Six	Licenses	Log Entry	Percentage	State Log Average	Total State Points
New South Wales	14513	813	1279	69	5.39	210	1595
Victoria	19317	836	1228	84	6.84	230	2157
Queensland	6975	596	417	39	9.35	179	1248
South Australia	15563	845	445	61	13.71	255	2979
Western Australia	13067	849	253	85	33.6	154	5239
Tasmania	11669	705	130	65	50.0	180	6540
Papua/New Guinea	2174	—	61	3			

STATE TROPHY

Tasmania	6540
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HIGHEST STATE LOG AVERAGE

South Australia	255
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SECTION LEADERS

Phone—	Points
VK2AHH—N. A. Hanson	1015
3AIT—G. C. Traill	853
4PQ—N. L. Martin	940
5EN—A. R. Nitschke	1038
6CL—I. H. Clinch	921
7RX—K. A. Johnston	806

Open—	Points
VK2BO—E. L. Andrews	960
3ALZ—I. F. Berwick	975
4RH—A. L. Hoey	530
5WO—A. S. Condon	1085
6RU—J. E. Rumble	1072
7KA—K. E. Millin	771
9RO—R. S. Gurr	1082

C.w.—	Points
VK2QL—F. T. Hine	526
3ZO—N. L. Storck	380
4JF—J. C. Files	205
5XK—A. J. Hewitt	361
6VK—V. J. Kitney	168
7CH—C. Harrison	388
9AU—R. A. Taylor	121

NEW SOUTH WALES

Top Six Logs—	Points
VK2AHH	1015
2BO	980
2ASZ	787
2DO	709
2AHH	703
2YN	703

Phone—	Cont. Pts.	Points
VK2AHH	345	1015
2YN	229	703
2AEB	164	508
2JA	163	448
2ACD	147	400
2BB	135	349
2ABE	135	346
2APP	126	334
2ALL	120	308
2ALA	109	306
2AJL	94	280
2XP	86	252
2ADL	60	222
2EU	60	195
1FM	60	182
2IV	60	181
2FM	56	157
2AVW	51	152
2AXT	53	145
2AEY	42	124
2QV	49	117
2ACO	48	113
2AEC	51	108
2ACC	54	104

Open—	Cont. Pts.	Points
VK2BO	315	960
2ASZ	286	787
2DO	258	709
2AHH	213	703
2PN	235	690
2HC	84	282

New South Wales (Continued)

C.w.—	Points
VK2QL	526
2GW	320
2HV	139
2ANU	86
2OW	71
2RJ	22
2JM	20
2HZ	21
2ZO	8

VICTORIA

Top Six Logs—	Points
VK3ALZ	975
3AIT	853
3ADW	845
3APJ	814
3OM	803
3HG	723

Phone—	Cont. Pts.	Points
VK3AIT	287	853
3ADW	289	845
3APJ	287	814
3OM	285	803
3DQ	218	643
3LW	190	555
3ASB	163	537
3ATM	181	507
3ABT	150	457
3KC	163	418
3AKF	142	377
3RN	147	356
3DF	100	341
3OT	134	339
3TG	108	338
3ADD	103	334
3AUG	116	334
3ATN	86	332
3NN	111	325
3AMT	99	302
3ALP	85	287
3AJG	107	282
3AN	77	256
3SM	87	234
3AUL	90	229
3HE	81	226
3ZU	62	173
3AEL	50	173
3EF	74	170
3NX	65	167
3PE	57	184

Open—	Cont. Pts.	Points
VK3ALZ	298	975
3HG	174	723
3APV	110	326
3XU	84	253
3ATR	52	194

C.w.—	Points
VK3ZO	380
3AKN	230
3ZA	214
3CX	92
3RJ	84
3ARV	77
3KS	21
3CN	17
3JI	14
3UM	9
3YS	11
3KB	6

QUEENSLAND

Top Six Logs—	Points
VK4PQ	940
4DJ	878
4FH	535
4RH	530
4SN	364
4LB	329

Phone—	Cont. Pts.	Points
VK4PQ	318	940
4DJ	318	878
4FH	171	535
4LB	118	329
4WJ	114	307
4PU	82	286
4PS	96	255
4XR	64	148
4LN	53	143
4ER	58	140
4PT	50	117
4WO	66	116
4ZW	33	85
4TW	41	79
4NG	20	61

Open—	Cont. Pts.	Points
VK4RH	192	530
4SN	116	364

C.w.—	Points
VK4JF	205
4KE	196
4XW	187
VK4BG	45
4CJ	21
4AW	6

SOUTH AUSTRALIA

Top Six Logs—

	Points
VKSWO	1085
5EN	1038
5FT	945
5MG	784
5XM	671
5KK	569

Phone—

	Cont. Pts.		Cont. Pts.
VKS5EN	308 1038	5TM	65 175
5FT	332 945	5MK	78 174
5MG	271 784	5KY	48 168
5XM	239 671	5WH	44 149
5KK	234 569	5LC	54 144
5XY	213 541	5KX	45 130
5EM	173 512	5PS	22 90
5JC	157 463	5SS	44 89
5GM	157 406	5JO	25 83
5EF	122 399	5ZL	30 70
5UA	146 365	5UF	23 57
5AO	156 353	5JM	13 56
5XV	129 303	5XA	9 44
5MS	78 301	5EQ	7 35
5OK	91 301	5CJ	25 33
5QW	90 296	5RI	20 29
5IM	100 273	5PM	13 27
5AX	99 272	5CO	9 24
5HW	90 267	5WI	15 19
5OC	100 262	5XU	14 16
5RR	87 251	5DO	10 11
5BG	90 246	5XL	5 6
5DF	74 183		

Open—

VKSWO	344 1085	VKS5HM	50 114
5LQ	127 415	5FY	35 104
5EU	110 402	5JG	41 85
5KU	51 129	5TW	27 52
5FM	30 115		

C.w.—

VKSXK	117 361	VKS5BP	42 123
5MY	104 319	5RK	29 67
5BS	100 305	5DS	28 67
5TL	59 169		

WESTERN AUSTRALIA

Top Six Logs—

	Points
VK6RU	1072
6CL	921
6KW	843
6SM	823
6WD	784
6BE	653

Phone—

	Cont. Pts.		Cont. Pts.
VK6CL	353 921	6RH	23 62
6KW	314 843	6WI	23 57
6WD	281 784	6TR	20 51
6DX	237 651	6FW	15 48
6LG	169 445	6WT	20 47
6EW	122 342	6NF	15 44
6AD	123 341	6TL	14 41
6WL	121 317	6VF	12 38
6RW	106 301	6AP	14 38
6XO	85 240	6KE	11 35
6ZZ	91 237	6FB	10 31
6XG	84 227	6LL	13 31
6BU	81 226	6MO	10 30
6XR	78 204	6TY	14 29
6PH	71 199	6HK	13 29
6CS	78 194	6GM	10 26
6AG	70 184	6LS	11 28
6CP	67 178	6VM	8 26
6GB	61 166	6AL	10 25
6GU	71 156	6WM	8 23
6JG	59 151	6EF	7 21
6MM	53 139	6MB	7 21
6TK	50 137	6HS	8 31
6LM	48 130	6TX	7 20
6CC	50 127	6FM	7 15
6OR	48 122	6HR	8 19
6CW	37 105	6RO	7 16
6TB	46 101	6SJ	8 16
6GH	33 97	6SR	7 15
6BO	32 93	6TP	7 15
6JH	31 88	6FD	6 14
6KJ	31 86	6BC	5 12
6BN	26 83		

Open—

VK6RU	400 1072	VK6GW	46 123
6SM	305 823	6JM	46 119
6BE	244 653	6WU	12 32

C.w.—

VK6VK	60 168	VK6MK	12 40
6AJ	26 80	6EJ	14 38
6BA	16 50	6RS	10 31
6TH	17 50	6WK	13 31
6WW	13 50	6DF	6 22
6WG	19 48	6RP	6 16
6UF	14 42	6IG	5 12

TASMANIA

Top Six Logs—

	Points
VK7RX	806
7KA	771
7AI	728
7AB	669
7RL	649
7SF	611

Phone—

	Cont. Pts.		Cont. Pts.
VK7RX	317 806	7TL	27 82
7AI	274 726	7IL	60 81
7AB	264 669	7LZ	33 68
7RL	229 649	7MF	41 66
7SF	238 611	7FM	32 66
7PM	214 557	7KC	14 65
7WA	174 491	7MY	23 59
7TT	151 327	7GA	13 55
7DW	112 319	7RM	30 51
7MX	134 306	7PF	20 48
7XL	117 294	7DR	9 43
7JO	77 241	7JD	10 42
7CK	48 210	7KX	21 40
7FJ	100 182	7PJ	19 37
7BT	83 164	7MH	19 34
7FH	88 151	7TR	11 32
7CT	49 122	7AL	18 31
7AX	27 82	7CF	18 28
7IL	60 81	7LE	16 20
7LZ	33 68	7LR	17 19
7MF	41 66	7TE	12 19
7FM	32 66	7JP	14 18
7KC	14 65	7DZ	6 16
7MY	23 59	7SJ	7 15
7GA	13 55	7AF	8 12
7RM	30 51	7WI	7 11
7PF	20 48	7DK	7 11
7DR	9 43	7CA	6 9
7JD	10 42	7EJ	6 8
7KX	21 40	7SR	7 7
7PJ	19 37		
7MH	19 34		
7TR	11 32		
7AL	18 31		
7CF	18 28		
7LE	16 20		
7LR	17 19		
7TE	12 19		
7JP	14 18		
7DZ	6 16		
7SJ	7 15		
7AF	8 12		
7WI	7 11		
7DK	7 11		
7CA	6 9		
7EJ	6 8		
7SR	7 7		

Open—

VK7KA	259 771	VK7JB	67 174
7YY	202 554	7RY	55 115
7SM	178 403	7YL	21 46
7OM	81 203	7GB	18 28
7MZ	100 202	7NC	7 24

C.w.—

VK7CH	141 388	VK7DS	35 89
7LJ	138 373	7RK	16 43
7KS	58 150	7AG	14 26
7ZZ	64 141	7RT	7 16

PAPUA/NEW GUINEA

Open—

VK9RO	354 1082	VK9XK	295 971
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C.w.—

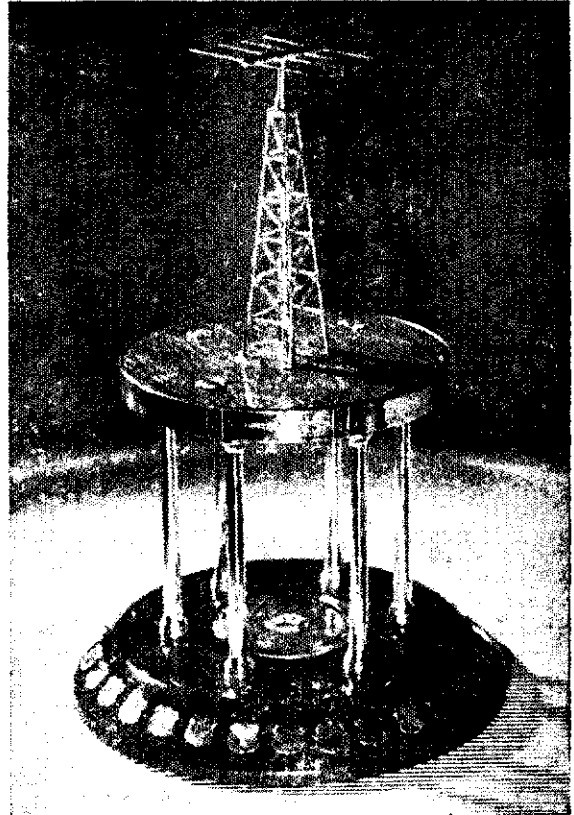
VK9AU	48 121
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RECEIVING SECTION

New South Wales—

	Points	
WIA-L2022	D. Grantley	770
L2052	T. I. Muller	755
L2064	A. T. Muller	609
L2033	D. W. Shephard	551
	R. Thompson	539
L2057	R. Wood	475
	R. L. McHugh	468
L2074	B. P. Carroll	421
L2001	B. J. Smyth	404
L2024	N. L. Dash	399
	P. J. Vernon	380
	P. J. Carter	380
L2014	K. Dunham	294
L2069	D. Richardson	263
L2047	S. Nelson	197
L2096	J. E. Douglas	173
L2012	D. C. Hayes	110
L2028	J. M. Clode	104
L2120	R. Bent	64
L2078	P. Miles	66

REMEMBRANCE DAY TROPHY



The Remembrance Day Trophy is held by the Tasmanian Division of the W.I.A. for 12 months.

Victoria—

WIA-L3061	B. R. Wilson	936
	P. A. Barclay	778
L3055	M. R. Cox	692
L3065	I. D. Thomas	323
BERS195	E. W. Trebilcock	274
	M. Cadzow	260
	J. M. Hilliard	247
	F. Seeber	200
WIA-L3039	D. H. Jenkin	152

Queensland—

E. C. A. Scott	1017
D. King	646

South Australia—

WIA-L5015	G. H. Herden	1184
L5088	W. J. Clayson	671
L5031	R. J. Simmonds	648
L5020	C. M. Hutchesson	610
	F. W. Aslin	586
	Miss O. J. Martin	556
	K. T. Minchin	67

Western Australia—

WIA-L6003	F. H. Price	711
	L. W. Cloud	71

Tasmania—

R. H. de Balfour	1061
M. Jenner	407
G. C. D'Emden	157
G. Ranft	81

Papua/New Guinea—

WIA-L9004	G. A. Greville	164
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Ineligible Logs—

First Brighton Senior Troop.
First Maryborough Sea Scouts Senior Troop.
Second Wilston Senior Scout Group.

BOOKS OF THE YEAR FOR RADIO & T.V. ENTHUSIASTS

★ A.R.R.L. HANDBOOK, 1959 Edition	46/3 plus 2/- post.
★ RADIO HANDBOOK, 15th Edition	85/6 „ 2/- „
★ BASIC TELEVISION, by Grob, 2nd Edition	66/9 „ 2/- „
★ RADIO DATA CHARTS, by Beatty & Sowerby, 5th Edition	12/6 „ 1/- „
★ HAM RADIO HANDBOOK, by Hertzberg	8/6 „ 1/- „
★ BEAM ANTENNA HANDBOOK, by Orr	32/6 „ 6d. „
★ CARE AND REPAIR OF HI-FI, by Feldman	31/- „ 1/- „
★ RADIOTRON DESIGNER'S HANDBOOK, by Langford Smith	55/- „ 2/6 „
★ T.V. SERVICING GUIDE, by Deane & Young	20/9 „ 1/- „
★ G.E. TRANSISTOR MANUAL	20/3 „ 1/- „
★ RADIO VALVE DATA—WIRELESS WORLD	8/6 „ 9d. „

McGILL'S AUTHORISED NEWSAGENCY

Est. 1860

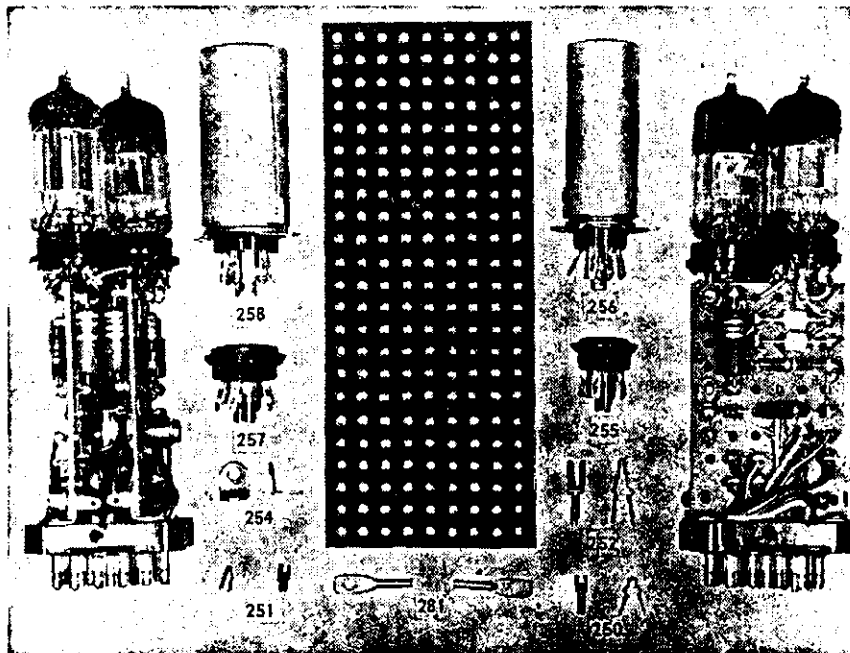
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A CONFERENCE OF COMPROMISE

IN GENEVA, 1959

One of the most fascinating things about this conference has been to observe the way in which it has worked. In many ways it is unique, not only because of its enormous complexity and size, but because its chief aim is to make everyone happy by producing a result in which everybody's wants are satisfied, and every little requirement which can't be talked away must be met.

IN most conferences, the participants expect to lose out on quite major matters which others will dispute, and are prepared to accept a vote on some basis or another should it be called upon to decide an issue.

But at I.T.U. a vote is one thing everybody tries to avoid. All kinds of conference devices, postponements and compromises are exploited should the possibility arise. Often matters just can't be simplified enough to produce a proposition on which a vote can be taken. Very rarely does any chairman decide to call for it, certainly in the smaller working groups, for these groups are specifically set up to provide an answer which will make it unnecessary to vote.

Naturally there is provision made for voting on the highest conference level which is the Plenary session, and sometimes, when a complete deadlock is reached on a clear issue, it must be taken.

There is even a procedure set down for a secret ballot if five or more countries ask for it.

This has happened more than once in a Plenary session over a dispute such as whether Communist China should be admitted or recognised by the I.T.U. Obviously that was a point which had to be decided one way or another, but few matters break down to such a simple proposition.

The principle is clearest in the evolution of the frequency table which is the most important subject from my point of view. Even here there are one or two matters which show every sign of reaching a deadlock, and might make voting necessary. But a great deal of work will have gone on beforehand in an endeavour to avoid this, and it is highly likely that such matters, now in committee, will be pursued all the way to a Plenary session before the final showdown.

The reason for this reluctance to vote at the conference is not hard to find. This is essentially a conference of sovereign nations who, by general agreement, are meeting as members of the I.T.U., which they have joined by voluntary application because they realise that the ether must be administered by common agreement for the common good.

Such agreements are honoured merely because the accredited representatives sign the final document on behalf of their Governments, thus indicating that they will abide by its provisions, a fact which amply justifies the existence of the Credentials Committee which examines the right of all representatives to sign.

But there can be no compulsion involved. If, as time goes on, a member country finds that it is having difficulty in keeping its contract, no one can stop it from breaking the agreement if it decides to do so.

The I.T.U. has not, and cannot have, any means by which it can over-ride the sovereign rights of its members to ignore their obligations if they so choose.

Violations of the Atlantic City agreement have taken place by some countries operating h.f. broadcasting stations in exclusive Amateur bands in recent years, as we all know to our sorrow. Faced with their need to set



JOHN MOYLE, VK2JU
W.I.A. Representative at Geneva.

up stations, and being unable to obtain suitable channels in the official and over-crowded lists kept by the International Frequency Registration Board, the I.T.U. agency for this purpose, some have set up other types of stations out of band, and the vulnerable Amateur frequencies, particularly at 7 and 14 Mc., have been among the sufferers.

Behind every decision to alter the table, or to prohibit certain services from operating in a given band, there is always involved a problem of convenience and finance. Changes are inevitable with time, but it is of no use to make decisions which require exist-

ing services to change frequencies forthwith, for instance, with no consideration for the practicability of such a move.

Even if there is only one country concerned, with big investments in equipment, or without resources to commence a replacement programme, it would be useless to demand that it follow the decision of an arbitrary vote.

Multiply this simple example hundreds of times and you have the reason why this is a conference of compromise. There are nearly always some exceptions which have to be made to the rule.

From the view-point of the frequency table, therefore, every effort must be made to write the general requirements of the world into a classified form which is the table itself, and then to annotate it with all kinds of footnotes which say which countries are exempt from its provisions, or which are permitted to modify or to add to them.

And always this process involves careful consideration to avoid interference with those services which legitimately operate within the confines of the table, or of other footnotes thereto. Yes, it can become most complicated, and as a result takes months of effort, during which everybody is on the alert.

At the beginning of the conference the desirability of limiting these footnotes, and of wording them in such a way that they can be easily understood, was recognised by detailing a special committee to study and advise on the subject.

But as the conference progressed it became clear that we will end up with more footnotes than ever.

Even today, a report came into committee from a working group with 16 footnotes attached to one section of the table, and had to go back to the group for reconsideration on exactly the lines I describe here.

I have even observed a case where there were so many footnotes that the table itself was re-written to accommodate them, and the material in the table became eventually the subject of the footnotes!

One device used to ease the position is, of course, the division of the world up into three Regions. It would be an ideal solution to have every section of the table agreed to on a world-wide basis. Some bands because of their wide propagation characteristics can only be determined in this way, as, for instance, the 14 and 28 Mc. Amateur bands.

But there are others in which it is practical to allocate requirements on more localised geographical divisions such as Europe, Asia and Oceania, and North and South America, a very rough kind of approximation of the three Regions. Broadly speaking their needs can be grouped, although there are quite a few anomalies to be found in this imperfect arrangement.

Without the Regions, the footnote position would become even more confusing than it is today.

It is probably true to say that many footnotes come into existence as the result of second and third thoughts on the part of some countries.

(Continued on Page 16)

When the conference began there were two big volumes of nicely printed proposals which purported to be the agenda. But because there were many who had not sent in proposals, it was obvious that there were more to come. There were.

AMENDMENTS TO PROPOSALS

On the first day delegates were presented with a pile of amendments as big as one of the original volumes. Since then so many more proposals have been received, many of them emerging from the course of events, that as far as the tables are concerned the original volumes are almost useless, and it has been necessary to publish the entire set of proposals in grouped and indexed form on roneoed sheets for the convenience of the working groups.

When tackling his section of the spectrum, the chairman of each working group or sub-working group first attempts to classify all those proposals which seem to indicate a certain trend, and to commence discussions on the remainder to see whether some can be withdrawn, combined, or otherwise fitted into a plan.

In the course of events, some countries, seeing that a concession is likely to be granted to another in the form of a footnote, decide that they too would like to be included in it. Before one can turn a hair, what was initially a small item has blown up into a big one, and we start all over again!

This has happened many times, when an apparently minor suggestion involving an Amateur band has suddenly gained support and expanded into a major threat about which drastic action has to be organised.

These are the occasions upon which the presence of many Amateur-minded people at the conference has been invaluable, for some of the attacks which have developed can only be described as vicious on the part of one or two countries, who have no love for Amateurs if their delegates are to be believed.

The menace of the footnote has caused me as much worry and headache as many straight proposals which can be met in the open and thrashed out for better or for worse. Even as I write, there are three or four which we are all watching very carefully in case they should get out of hand.

The same thing can, of course, be said of many proposals, particularly the lone proposal. Sometimes it is so removed from the general picture that the innocent could be pardoned for ignoring it as likely to be voted out. After he discovers that voting out is a last resort, he wakes up to the fact that many countries who rather lean towards the lone proposal's provisions are quite happy to leave it there to see what happens, jumping joyfully and rapidly on the bandwagon at the appropriate moment so that the lone proposal suddenly finds itself surrounded by friends.

When that happens there is a real scurry, other countries reserve their positions right and left, and usually the matter is held over until the next meet-

TECHNICAL TOPICS

ANTENNAE FOR FIELD DAY OR PORTABLE OPERATION

THE first requirements of an antenna for portable work are: (1) That it should be easy to transport and erect, and (2) That it should efficiently radiate the limited power available from portable transmitters.

The first type of antenna which comes to mind for portable work is the whip type as used in various Army transceivers, but, while this type meets requirement (1) perfectly, it is not an efficient radiator unless its length approaches a quarter wave, which makes it an impossible size on 7 Mc. and 3.5 Mc. For mobile work, the whip is the only practical antenna and it is possible to considerably improve its efficiency by centre loading with high Q coils, but even so, it is still much less effective than a half wave antenna.

If for increased efficiency, we decide to use a half or quarter wave wire, then supports are needed and these can be found in trees. It will be necessary to select a site for field day operation which as well as good propagation characteristics, has suitable trees spaced the right distance for the bands to be used. In erecting the wires, it is not necessary to climb the trees but proceed as follows:

Use a fishing line of length more than twice the height of the tree and tie a weight such as a large nut on one end. Swing this weight around like a sling shot or fisherman casting and let it go over the top of the tree. This requires a little practice.

If the line is checked before the weight reaches the ground, it will swing like a pendulum, wrap itself round a high bough and take no further part

ing, by which time some heart-to-heart talks take place among all concerned.

The man who thinks his special propositions are completely safe at this conference, particularly where there has been some difference of opinion and an uneasy truce, can never be certain when the whole thing is likely to blow up again in his face, with a totally unexpected result.

And it can happen right up to the moment when the final articles are signed.

For, as I said at the start, this is a conference of compromise as far as frequency allocations are concerned, in which everybody's voice has a right to be heard, and in which every nation has an equal standing and can demand that its wants be met.

The art is to do it without ending up with a table which means nothing at all.

The danger that exactly this will happen is well recognised, and at this moment a special study group is examining certain sections of the spectrum in the hope of future planning to restore some kind of long term order.

Because if this is not done, the policy of compromise will lead to complete chaos, which many consider isn't very far away.

in the operation, so it is best to have a spare weight and line available.

When the line is across the tree, the aerial can be tied to one end and the line used as a halyard.

An alternative method to the sling is to use a bow and arrow but in any case don't let the weight or the arrow fall back on your head or your car.

Suitable types of wire antennae are:

(1) **The folded dipole.** This is one of the most efficient half wave radiators. It can be coupled direct to the tank coil link and does not require an aerial tuning unit. If made of 300 ohm ribbon throughout, it is easy to handle and does not tangle like wire. It has the disadvantage of being strictly a one-band antenna and it would be expensive to have a 300 ohm ribbon folded dipole for each band.

(2) **The vertical quarter wave.** The length is approximately 66 feet for 3.5 Mc., 33 feet for 7 Mc., and 16 feet for 14 Mc. This antenna requires a good ground and for portable operation in open spaces it is probably easier to provide four quarter wave radials and make it a ground plane antenna which concentrates the signal into low angles. The vertical radiator could be hauled up to an overhanging tree and the four radials run out at a small downward angle with long extension cords and tied to pegs in the ground or other trees. With downward radials a 50 ohm feeder would be an approximate match and in any case would be very short.

(3) **The all-band antenna.**—130 feet centre fed with 66 ft. open wire tuned feeders. This requires an aerial tuning unit which is an additional piece of gear to set up. The feeders and the spacers can get into tangles and be awkward to sort out. Once up, however, this antenna allows band changing without alteration to the antenna.

(4) **The all-band antenna with dipoles cut for each band and all fed by the same 70 ohm feeder.** This would be very good for quick band changing but unless the dipoles are made of insulated wire, it might be difficult to keep them separated in antenna required for quick erection.

If the antenna is required for Field Day operation and the Contest is held in daylight only, as in recent years, then probably operation would be most profitable in two bands—7 and 14 Mc. For these two bands it is suggested that two antennae be used, the choice being the folded dipole for 7 Mc. and the ground plane for 14 Mc.

If the Contest is to run for 24 hours, then an additional antenna for 3.5 Mc. or an all-band antenna would be required.

—J.A.G.

RESULTS OF VK9 3.5 Mc. CONTEST

The 3.5 Mc. Contest conducted by the Papua/New Guinea Division of the W.I.A. during July was won by VK9XK with VK9RO filling second place.

Despite periods of very high noise level, contacts were obtained with U.S.A. and Japan, and many VK and ZL stations took the opportunity of gaining a contact with VK9 on this band.

The Division wishes to thank all those who participated and helped make the Contest a success.

An Economical Receiver for S.W. Listening

D. M. GRANTLEY,* WIA-L2022

SINCE publication of my article on Short Wave Listening in "Amateur Radio" of April 1959, I have had quite a number of letters seeking information on the conversion of the Number 19 Receiver. In view of this, here is the information as already supplied to the chaps who enquired from me, hoping that it may be of interest to some of the other s.w.l.'s.

Let me point out at this stage that the original receiver which I used for many months was not converted by myself, but by VK2RS. The v.h.f. communicator and main transmitter in this case were removed, and I built a power supply in its place. But there is a far easier way to get this remarkable receiver working, and it does not involve the removal of any part of the transmitter, thus enabling the listener to have his first rig when he gets his ticket.

There are two plugs on the front panel of the set; one is a 6-pin, the other a 12-pin. The output is taken from pin 4 of the 12-pin plug and the

* "Spring Valley," Holbrook, N.S.W.

other connections we worry about are on the 6-pin. Pin 4 is the 500v. point, and pin 6 is the 275v. point. (I use only one supply of about 300v.)

The only other task remaining is to alter the filament wiring from 12v. to 6v., and like most things there is an easy way of doing it. Simply locate an easily accessible valve socket (and you will find that the 807, being lower than the rest, and more or less in the clear, is the logical choice), earth the filament pin which is connected to the 12v. supply and connect the 6v. lead to the other filament pin. This being completed, you should have 6v. on all the filaments; if not, a quick inspection of the filament circuit will no doubt enable one to locate the fault and rectify it. I have converted several by this method, and it seems to do the trick successfully. Pin 3 on the 6-pin plug is the supply point for the 1.t.+.

Having completed these few adjustments, all that remains to do is to fire the gear up and unless there is something radically wrong, it will go.

If it is decided to remove the transmitter from the transceiver, there will

then be plenty of room to build a power supply and thus have a self-contained unit. Any conventional supply delivering 6v. 1.t. and about 300v. h.t. will suffice.

Two adjectives, "remarkable" and "inexpensive" have been used in the course of this article, the latter cannot be disputed, as a perusal of the various dealers' advertisements reveal an average price of less than £5, which in view of the little work to be done on it, is most reasonable. For its size and age, it is a most remarkable little set. I have had considerable success with it, both on its own range and with a converter for the higher frequencies. There is plenty of power at the output and although designed for headphone operation, it operates a speaker at good strength.

A certain measure of bandsread can be given by removing all moving plates except one in each section of the gang, and soldering a 50 pF. silver mica capacitor across each of the four trimmers beneath the chassis on the i.f. band. I have not tried it, as my converter has full bandsread on all bands, but according to G3IDM in the R.S.G.B. "Bulletin," Feb. '59, it gives a spread on 80 metres to over three-quarters of the dial, and extending 40 metres to over half an inch—which is over three times the coverage in the original form.

Care is needed in the selection of the actual machine, as some of them are heavily tropic-proofed, and it is advisable to inspect the "works" of the set before purchasing. It may be just a co-incidence, but of the ones I have worked on, the ones in good clean condition were the ones which have the various controls labelled in Russian. Circuits are included in some of the cases, but in case they are not, one can be obtained for a nominal charge through the VK2 Division.

Now go to it you s.w.l.'s, and if you cannot win an R.D. Contest on this gear, then you want to give the game away.

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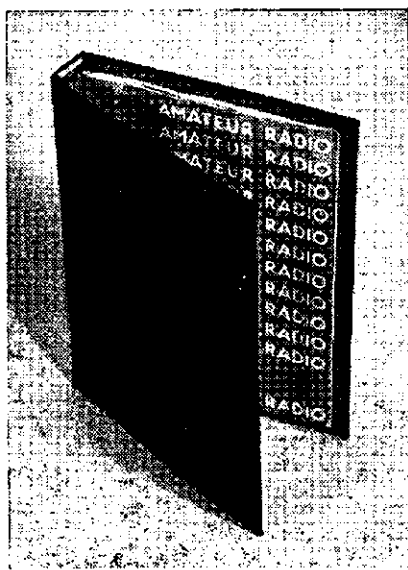
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ANNOUNCEMENTS

N.S.W. Divisional Convention will be held on 30th January, 1960, at VK2W1, Quarry Road, Dural. Good prizes, 2 mx blindfold tx hunt, excellent entertainment, and some disposals gear are some of the features. A real get-together for all at reasonable cost. Full details in your Bulletin and Broadcasts, so join us at Dural for another enjoyable Convention.

Victorian Zones and Clubs.—Secretaries of zones and affiliated clubs are reminded of the trophy, presented by the Victorian Divisional Council of the W.I.A., for the best score returned by a zone or club in the National Field Day Contest. Further details will be found in the Victorian notes in this issue.

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ROSS HULL MEMORIAL V.H.F. CONTEST 1959-60

The Federal Contest Committee of the Wireless Institute of Australia invites all Australian and Overseas Amateurs and Short Wave Listeners to participate in this annual contest which is held to perpetuate the memory of the late Ross Hull whose interest in v.h.f. did much to advance the art.

A handsome Perpetual Trophy is awarded annually for competition between members of the W.I.A. in Australia and its Territories, inscribed with the name and life work of the man whom it honours. The name of the winning member of the W.I.A. each year is also inscribed on the Trophy. In addition, this member will receive a suitably inscribed, framed photograph of the Trophy.

Objects: Amateurs in each call area (this includes those in Australian Mandated Territories and Antarctica) will endeavour to contact Amateurs in all other call areas and overseas. (VK1 and VK2 will be considered to be one call area.)

Date of Contest: 1st December, 1959, to 31st January, 1960.

Duration: From 0001 hours E.A.S.T. 1st Dec., 1959, to 2359 hours E.A.S.T. 31st Jan., 1960.

RULES

1. There shall be three main sections to the contest:

- (a) Transmitting phone.
- (b) Transmitting open.
- (c) Receiving phone and c.w.

2. All Australian and Overseas Amateurs may enter for the Contest whether their stations are fixed, portable or mobile.

3. All Amateur v.h.f. bands may be used, but no cross-band operating is permitted, with the exception that 50-54 Mc. and 56-60 Mc. will be considered to be the same v.h.f. band for overseas contacts.

4. Amateurs may enter for one of the above sections listed in Rule 1. An "open" log will be one containing both phone and c.w. contacts.

5. Only one contact per station per band is allowed each calendar day and arranging schedules for contacts on other bands is not permitted.

6. Only one licensed Amateur is permitted to operate any one station under the owner's call sign. Should two or more operate any particular station, each will be considered a contestant and must submit a separate log under his own call sign.

7. Entrants must operate within the terms of their licenses.

8. Cyphers: Before points may be claimed for a contact serial numbers must be exchanged and acknowledged: The serial number of five or six figures will be made up of the RS (telephony) or RST (c.w.) report plus three figures

which may begin with any number between 001 and 100 for the first contact and which will increase in value by one for each successive contact, e.g. if the number chosen for the first contact is 053, then for the second contact the number will be 054, for the third 055, and so on. If any contestant reaches 999 he will start again with 001.

9. **Entries:** Entries must be set out as shown in the example, using only one side of the paper. Entries must be postmarked not later than Saturday, 1st March, 1960, and addressed to the **Federal Contest Committee, W.I.A., Box 371B, G.P.O., Hobart, Tasmania.**

10. **Scoring:** Scoring will be based on the table shown herewith.

11. **Logs:** All logs shall be set out as in the example shown and in addition will carry a front sheet showing the following information:

Name..... Section.....
Address..... Call Sign.....
Claimed Score.....

Declaration: I hereby certify that I have operated in accordance with the rules and spirit of the contest.

Signed.....
Date.....

12. The right is reserved to disqualify any entrant who, during the Contest, has not observed regulations or who has consistently departed from the accepted code of operating ethics.

13. The ruling of the Federal Contest Committee of the W.I.A. will be final. No dispute will be entered into.

SCORING TABLE

		To												Overseas other than ZL
		VK1	VK3	VK4	VK5	VK6	VK7	N.T.	VK9	ZL1	ZL2	ZL3	ZL4	
From	VK1-VK2	-	5	4	2	10	4	6	10	7	7	7	7	10
	VK3	5	-	4	4	9	10	6	10	7	7	7	7	10
	VK4	4	4	-	5	10	7	3	7	7	8	8	8	10
	VK5	2	4	5	-	7	5	3	10	8	8	8	8	10
	VK6	10	9	10	7	-	10	10	10	10	10	10	10	10
	VK7	4	10	7	5	10	-	7	10	7	7	7	7	10
	N.T.	6	6	3	3	10	7	-	3	10	10	10	10	10
	VK9	10	10	7	10	10	10	3	-	10	10	10	10	10
	ZL1	7	7	7	8	10	7	10	10	-	-	-	-	-
	ZL2	7	7	8	8	10	7	10	10	-	-	-	-	-
	ZL3	7	7	8	8	10	7	10	10	-	-	-	-	-
	ZL4	7	7	8	8	10	7	10	10	-	-	-	-	-
	Overseas other than ZL	10	10	10	10	10	10	10	10	-	-	-	-	-

The score for the first contact with any particular call area on each band will be that shown in the above table. For each subsequent contact with the same call area on the same band the score will reduce by one point until the contact value reaches 1, when all further contacts with that call area on that band will retain this value.

In addition a bonus of 20 points may be claimed for each new call area worked on each band.

EXAMPLE OF TRANSMITTING LOG

Date/Time E.A.S.T.	Band	Emission	Call Sign	RST/NR. Sent	RST/NR. Rcvd.	Call Area Bonus	Points Claim.	Blank

NOTE.—The standard W.I.A. Log Sheet follows the above form.

EXAMPLE OF RECEIVING LOG

Date/Time E.A.S.T.	Band	Call Sign Heard	RST/NR. Sent	Station Called	Call Area Bonus	Points Claim.	Blank

NOTE.—The standard W.I.A. Log Sheet follows the above form.

S W L

Maurice Cox, WIA-L3055
Flat 1, 37 Boyd Crescent,
Olympic Village, Heidelberg,
N.23, Victoria.

Hi fellow short wave listeners. How are you receiving these days? Are the bands improving? I would like to hear from any of you chaps, how about it?

Now to the news of this month. Had a letter from Ian Thomas, L3085. He says: "Over the week-end while I was listening in on the 'CQ' world-wide DX contest a thought occurred to me (well how about that, hi). Why not use this contest as the means of a contest among short wave listeners in this country. As you are probably aware, there is no receiving section in this contest. I feel this may be a way of helping to stimulate interest in s.w.l'ing. They follow closely the format of the rules for the tx section." Ian says that following the rules he would have scored 10,000 points. Thanks, Ian for the letter and we will go into the rules next meeting. Okay on your five new countries, keep up the listening. This is the only letter I have had this month. I haven't heard from VK8 for some months. They came in with a burst, but soon fizzled out. How about it, VK67? Drop us a line or two.

Tim Mills L2052 and myself want to make s.w.l'ing in this country very big, so come and join the gang. That goes for the rest of the States who have inquired. If you want help, we will help you all we can.

VK3 GROUP NEWS

Our last meeting was held with the presence of seven members, but we had a good time. Mac Hilliard played us a tape recording of 50 to 70 Mc. signals heard by an Amateur in Salisbury, South Rhodesia. They consisted of t.v. and some Amateur sigs. from Europe. Then he played a tape of the JA opening last year to VK3. Thanks very much Mac, most interesting.

Very shortly I hope to send to all VK3 members a list of doings and lectures of interest for the next 12 months.

We have been given approval to send to High and Technical School Headmasters a letter to try and gain more young members for the Group. They will be forwarded shortly. Also a letter will be forwarded to all the associate members in VK3, so chaps, look forward to bigger membership with more and more events.

Now some notes from Don Grantley, L2022.

QSL LADDER

This is the first month for our new innovation, and owing to the limited time for preparation, he regrets that very little is to hand for our first issue.

For new contributors, if you want to be in future lists, please send your scores to D. Grantley, Holbrook, N.S.W., or to Maurice Cox by the 17th of the month. Scores wanted are countries heard, confirmed, zones confirmed, these scores being your all-time results, not the ones pertaining to the present year.

Name	Confirmed	Heard	Countrs.	Zones
Eric Trebilcock	250	247	40	
Don Grantley	186	43	25	
Mac Hilliard	152	48		
Maurie Cox	181	18		
Ian Thomas	73	12		

ALBURY RADIO CLUB

Look for some s.w.l. activity amongst the associate members in the near future. Don Grantley has just sat for the A.O.C.P. and has every reason to believe that he will be out of the s.w.l. ranks by the time this reaches you. However, there are several new members coming along, one of them being Rod Bent, of the staff of a local newspaper. Rod is around the 19 mark, interested in radio only as a hobby, and is the newest member of the club.

Under the wing of L2022 for a couple of years now, Rod has become a good operator, and was one of the entrants in this year's R.D. Contest. A keen builder, he is at present undertaking the task of building himself an all band rx to further his listening.

CONTESTS

No Contests this month, the next for the VK s.w.l.'s, being the National Field Day in January. Not a large number of entries in the VK/ZL Contest, which is to be regretted. L2022 sends his apologies to the s.w.l.'s for his absence from the Contest, due to circumstances beyond his control.

[There is the Ross Hull Memorial Contest. See details elsewhere in this issue.—Editor.]

DX NEWS FOR S.W.L.'s

Any listeners awaiting cards from ST2KO need not despair, they will get them late 1960 when he returns to G land.

VP8CC's outstanding s.w.l. report now being answered.

FR7ZD, G. Hoaray, Tampon, Reunion Is., and EA0AF, Box 195 Fernando Poo., are two new QTHs of interest.

THE VILLAGE IDIOT

He is at it again, according to Monitor, the I.S.W.L. official magazine. This time calling himself MM2A, giving his QTH as La Luna, and transmits weird noises to prove it. He was up to his tricks on 80 metres, and apparently hails from over in the European sphere some place, as he was heard in England. I put him in the same category as the v.f.o. flicker who repeatedly crosses 3WI at broadcast time.

LOCAL PIRATE ACTIVITY

Some time ago we had a chap having fun and games using the call signs of 3AKN and 2AXN, the former call being held by Don Baulch at Broadwater, the latter has not been issued. This pirate was going great guns here a while ago, but he has gone to earth of late. Got a bit windy, mate?

VK2 S.W. ZONE CONVENTION

Many of our s.w.l.'s, from N.S.W. were to be seen over at Narranderra for this get-together on October 4. Tim Mills and Don Grantley were seen in a huddle at one stage, whilst L2032, L2035, the Tumarumba gang complete with chief of staff, Leo 2ALQ; others from Hay, Albury, and Griffith added to the numbers. Fast listeners in Ted 2ACD and Don 2RS were sighted.

Thanks very much, Don, for your contribution again.

VK2 GROUP NEWS

Our membership has passed No. 170, being about 135 numbers in circulation.

One of our regular news suppliers, Barry L2020, has vanished from the meetings. How about a bit of news Barry?

An ex-member, Vol L2055, now has his full ticket with the call of 2V0V. Vol has in just over 12 months studied for the A.O.L.C.P. with our correspondence course. He spent three months on 2 mx with the call of 2ZDD and worked some 50 2 mx stations. Now he is on 40 with an AT5, running 136 watts. Rx is 115. Ant. a half wave and QTH Woollahra. Congrats. Vol.

September Lecture.—We went along to the v.h.f. meeting and heard two very good lectures by Bob 2ASZ on Command Rx's and their "hotting up" and Keith 2BK on a.s.b. and Command Rx's. Our thanks to them for a very interesting evening.

Our November meeting will be dealing with the awards and we hope to see as many as possible attending. We are disappointed with the roll up at the meetings, usually being about 10. Well the winter's over, we hope! Tim hopes that in the not too distant future things will improve.

Don't forget the December meeting. We will be attending the yearly auction of the v.h.f. boys, so here is your chance to get something for the shack or the door step.

Now the Amateur is progressive. He keeps his station ahead of science. It is built well and efficiently. His operating practice is clean and regular. This is one of the points of the Amateur Code and the same can be said for the s.w.l.'s. The State membership is growing more and more.

Many thanks to all who did so much for the Group at Chatswood Town Hall in the Youth Festival. Thanks to all who have supplied information to this page, for after all, it is for your use and it is for you to say what you want. I have a letter from VK4; the interest in s.w.l'ing is there and it is only a matter of time before they are in it.

Awards: This subject is now under way and if you look at July "A.R." page 25, you will note that F.E. have given us the job of recommending awards. This State has the task of formulating awards for the whole of VK. Please let us know your ideas on the subject, so put pen to paper and send them in. Think it over and do the best for VK.

Distress Frequencies: Shipping c.w. on 500 Kc.; R/T on 2182 Kc.; survival craft 8364 Kc.; aircraft 8540 Kc., or on their designated route frequency. This frequency is listed as being used by Radio Moscow 100kw., and Thailand 250 watts. If you want good code practice, try the weather reports on 500 Kc. at 10 p.m. at 1100 and 2300 hours.

Australian Call Signs: Letters assigned to Australia are AXA-AXZ, VHA-VNZ, VZA-VZZ.

Ragehew: Via the 600-ohm line, and other means.

On the v.h.f. field, the following has come to light: On 61 Mc., watch for ZL t.v. sound at 1830 E.A.S.T. for half an hour. On the Six Hour week-end, some of the Sydney v.h.f. boys are going "bush" to try some DX on 2 mx. 2WI will give more details.

Dick L2031 dropped a line to let the boys know he is still on deck. At the moment he is on long service leave and is in VK4. Using a BC312D, he has been raking in the DX. Ken L2030 in Shellharbour has been chasing the DX before the paper run in the mornings; thanks to a neighbour two doors away, in whose Norfolk Pine he has tied one end of his Wyndom. Hope you can get 2AKM on the bands and that you get the 20 mx quad up, and we hope you got rid of the i.f. problem.

Roy L2068—get on to Barney L2001 re QSL'ing. Thanks Rodney L2072 for the DX news. Radio Japan's DX programme, fourth Saturday of the month at 1935 E.A.S.T. on 11940 and 15235 Kc. in the VK/ZL transmissions at 1930 to 2030 hours. Swiss Broadcasting Corporation 15305, 11885 and 9535 Kc. at 1450 E.A.S.T. every Saturday during its second transmission to the U.S.A. between 1415 and 1500 in DX corner. Thanks Rod.

Don L2033 near Casino is using a home brew rx, five tube, battery superhet. with a 1 tube pre-selector switched 40 to 10. Aerial is 87 ft. end fed Zepp. I would like to welcome Afton Westcott to this Group. He comes from North Queensland. His number (at present) is WIA-L2136/VK4. Might be a Group in VK4 soon.

DX on the b.c. band, from Gerry L2011. Times are E.A.S.T. Programme of NHK Tokyo. The first programme can be heard on JOAK 580 Kc., JOBK 670 Kc., JOIK 570 Kc., and JOPK 880 Kc. From midnight to closing down at 0100, on 590 Kc. as early as 2330.

VOA on Ryukyu Islands, English on 1180 Kc., 0000-0030 hours. North Luzon, Manda, 1140 Kc., 0000-0030. North Luzon in English 0130-0200, close down.

Philippines: DZBB Manila, 580 Kc., 0000-0200, close down. DZAQ, 620 Kc., 0115-0200, close down.

Hawaii, PKOA, 630 Kc., sometimes 0130 to about 0230. KGU, 760 Kc., after 0100 till fade out about 0230.

Voice of America Amateur Programme

Sunday	1615-1630 hours:	15165, 15210, 11970, 11810, 11785, 9740, 9700, 9585, 9530 and 8140 Kc.
Sunday	1715-1730 hours:	17845, 15380, 15295, 11810 and 9700 Kc.
Sunday	2215-2230 hours:	25950, 25880, 21735, 21455, 17795, 15330, 11875, 11970, 11775, 9745, 9650, 9515, 7160, 7110, 6145, and 6020 Kc.
Monday	0315-0330 hours:	21610, 21500, 21455, 17740, 15210, 15200, 11875, 11780, 9615, 9520, 7110, 6140 and 3980 Kc.
Monday	0915-0930 hours:	25610, 21500, 17880, 17830, 17770, 15240, 15275, 15210, 15200, 15150, 11900, 11895, 11780 and 7160 Kc.

A special QSL card for this programme: Amateur Radio, Box 922, Washington 4, D.C., U.S.A.

Radio Sweden: New schedule for Far East from 2330 to 2345 hours, and to S.E. Asia from 0045 to 0200 hours on the 15240 and 17840 Kc. bands. Many thanks, Gerry. Good hunting.

Cards for the month include UA1KIR of the last Antarctic expedition. VK9AD (s.s.b.), F2SQ, also JAIACA in Tokyo, who wrote a long letter giving details of activity in JA.

Thanks very much Tim, keep the news coming in. Well chaps this is all for this month. So now on behalf of the VK3 Group I wish all you s.w.l.'ers, a very Merry Xmas and a Bright and Prosperous New Year. 73 Maurie, L3055.

★

NOVEL METHOD TO RAISE FUNDS

An s.w.l. from U.S.A. forwarded a report and request for a QSL to George VK3AOM. His printed form stated that the s.w.l. hoped to become a Ham very soon and that he raises rabbits to help pay for some of the gear he needs.

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PAPUA AND NEW GUINEA

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Leave: Three months after each 21 months in Territory and six months' furlough after 20 years. If permanent, additional three months' leave after each six years.

Further Information: An information handbook on the Territory and its Public Service is available from Department of Territories, Canberra or Sydney, or from any Commonwealth Public Service Inspector, Commonwealth Employment Office or official country Post Office. Other enquiries to Department of Territories, Canberra (phone 70411, Ext. 29A).

APPLICATIONS

SUBMIT on prescribed form available from above offices.

TO—The Secretary, Department of Territories, Canberra, by 18th December, 1959.

PREDICTION CHART, DEC. '59

Mc.	E. AUSTRALIA — W. EUROPE S.R.												Mc.	
	GMT													
45	0	2	4	6	8	10	12	14	16	18	20	22	24	45
28														28
21														21
14														14
7														7
Mc.	E. AUSTRALIA — W. EUROPE L.R.												Mc.	
45	0	2	4	6	8	10	12	14	16	18	20	22	24	45
28														28
21														21
14														14
7														7
Mc.	E. AUSTRALIA — MEDITERRANEAN												Mc.	
45	0	2	4	6	8	10	12	14	16	18	20	22	24	45
28														28
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14														14
7														7
Mc.	E. AUSTRALIA — N.W. U.S.A.												Mc.	
45	0	2	4	6	8	10	12	14	16	18	20	22	24	45
28														28
21														21
14														14
7														7
Mc.	B. AUSTRALIA — N.E. U.S.A. S.R.												Mc.	
45	0	2	4	6	8	10	12	14	16	18	20	22	24	45
28														28
21														21
14														14
7														7
Mc.	E. AUSTRALIA — N.E. U.S.A. L.R.												Mc.	
45	0	2	4	6	8	10	12	14	16	18	20	22	24	45
28														28
21														21
14														14
7														7
Mc.	E. AUSTRALIA — CENTRAL AMERICA												Mc.	
45	0	2	4	6	8	10	12	14	16	18	20	22	24	45
28														28
21														21
14														14
7														7
Mc.	E. AUSTRALIA — S. AFRICA												Mc.	
45	0	2	4	6	8	10	12	14	16	18	20	22	24	45
28														28
21														21
14														14
7														7
Mc.	E. AUSTRALIA — FAR EAST												Mc.	
45	0	2	4	6	8	10	12	14	16	18	20	22	24	45
28														28
21														21
14														14
7														7
Mc.	W. AUSTRALIA — W. EUROPE												Mc.	
45	0	2	4	6	8	10	12	14	16	18	20	22	24	45
28														28
21														21
14														14
7														7
Mc.	W. AUSTRALIA — N.W. U.S.A.												Mc.	
45	0	2	4	6	8	10	12	14	16	18	20	22	24	45
28														28
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Mc.	W. AUSTRALIA — N.E. U.S.A.												Mc.	
45	0	2	4	6	8	10	12	14	16	18	20	22	24	45
28														28
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Mc.	W. AUSTRALIA — S. AFRICA												Mc.	
45	0	2	4	6	8	10	12	14	16	18	20	22	24	45
28														28
21														21
14														14
7														7
Mc.	W. AUSTRALIA — FAR EAST												Mc.	
45	0	2	4	6	8	10	12	14	16	18	20	22	24	45
28														28
21														21
14														14
7														7

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Input capacity 250 pF. max., output capacity 1,500 pF. max. A single pole five-position switch is provided which can be used for switching in parallel capacities when required.

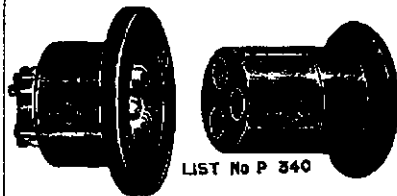
Recommended input capacitor: Eddystone Type 817. Recommended output capacitor: Standard miniature 3-gang EC condenser which is suitable in this position up to 1 kw.

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VHF

Frank P. O'Dwyer, VK3OF
190 Thomas Street,
Hampton, Vic.

Maybe the notes did miss last month. My apologies to those who forwarded theirs in time. The reason for lateness, the awaiting of further notes and a temporary breakdown of liaison between the printer and the v.h.f. Ed. The paucity of the notes this month reflects the normal late arrival. That is not a reflection on the Divisional scribes, but it is on the v.h.f. operator who leaves it to the scribes to dig up their own information. [Copy date will be strictly adhered to in future.—Editor.]

Highlights from the missing notes were the working of KH6 by 4HD and 4NG, and 9M2DQ breaking into a contact between 6BE and 6ZBG, sigs. S9. This is Jim's second contact with VK6. This 9M2 fellow said that he is working into V56 on an average of three nights a week. He would have the theorists explain what type of propagation he is using. What about it boys? Jim is situated on the geometric equator; the distance is 1,500 miles; there is no T.E. flutter. He also works DU and JA, but infrequently. He is on 50 Mc. every night at 0015 E.A.S.T. He also listens frequently towards VK around 1600 E.A.S.T., his lunch time. His two break-throughs have been around this hour.

Then there was the smattering of JA DX and a couple of Es openings, VK4/5, VK5/7, Brian 5ZDW, of Darwin, has location troubles, but despite that and local QRM, has mixed it with JA. The arrival of 5ZEL in that area has increased the number of 50 Mc. stations by 100 per cent., so keep an eye in that direction in case the opportunity for W.A.S. comes along.

DX during October was relatively poor, JA signals not reaching great strength and not near as frequent as this time last year. Nov. got away to a good start, the third providing the best ever opening, VK5/JA from 1200 to 1730 all the way, sigs. booming in. Only a couple were worked by the Melb. gang represented by two operators on the air at the time, one of whom was successful.

A counter attraction when the band did open was the deciding of a well known Melb. event held the first Tuesday of each Nov. Maybe all other ears were at the b.c. sets. Heard being called during the opening were VK2ZES and VK6, so other Divisions appeared to have their share. Es produced nothing that I know of, though Les 3XM has been frequently hearing smatches of talk, apparently from VK4 around 1700-1800. Jock 3ZDG claims more use should be made of early morning sessions (around 0630) because the absence of QRM makes for ideal listening conditions. He partially proved the point by hearing VK5 3ZEJ/3ZER portable at Mt. Lofty in VK5 on 50 Mc. and 144 Mc. on Nov. 8 at that time. Jock said that under normal Sunday QRM level he would have missed out. T.v.i. between Interstate Channel 2 stations is already evident, bad enough to make newspaper items, so maybe we are in for a good Es season.

To all the regular scribes and those others who have provided so many notes for this column throughout the year, my sincere thanks, and to all those who write and those who read, the Season's Greetings, a Holy Christmas and a Successful New Year.

—Frank O'Dwyer, VK3OF.

50 MEGACYCLES

NEW SOUTH WALES

November 3, during what was apparently a general opening to JA, VK2ABR worked into JA4 and 9. Others of the gang were heard calling.

VICTORIA

50 Mc. activity has been at an average for local activity, but DX has been conspicuous by its absence. On a few occasions, odd signals have been heard, but nothing was achieved in the way of two-way contact. However, hopes are still high, receivers are working overtime with beams turned towards DX localities.

Some new calls active for the Interstate gang to look for are: John 3ZJE, Neal 3ZJN and John 3ZJA. Old timer 3ACL at Red Hill

made a brief return to the band and is expected to be heard again frequently. Keith 3ZED is off to the Antarctic in 1960. He will be stationed at Davis, operating under the call of VK0ED. 50 Mc. gear will be in his kit and he hopes for some use for it way down yonder. We wish you the best of luck, Keith, while down there. You will have to anchor things firmly down there in those gales, otherwise you will be chasing it all over the place. He sails on Jan. 5 on the Magga Dan.

Bert 3ZGD back on the band after some "technical" trouble. He is building mobile for 6 and 2 mx and hopes to operate portable from Eden early next year, so look out the ZLs.

Of interest to the 50 Mc. gang. On Nov. 1 a viewer at Hamilton (western Vic.) reported that ABQZ replaced the picture from ABV2 for periods during the afternoon. 3ZGP (Melb.) found the signal from ABV2 was noticeably interfered with while listening with an RF26 converter.

Nov. 3, JAs were heard and worked in Melb. between 1400 and 1500, while next day 3ZEW portable at Alexandra (N.E. of Melb.) heard a ZL during the afternoon. Nov. 5 more JAs were reported heard. Anyone know where a teletype station on approx. 54 Mc., heard often around Melb., is located? 3ZGP has heard this station around quite often during the time of break throughs, it was heard again over the three days just mentioned.—3ZGP.

EXTENDED USE OF 50-54 Mc. BAND

PURSUANT to a request from the W.I.A. for the continued use of the band 50-54 Mc., the Postmaster-General's Department has authorised the use of the band until 31st December, 1960, conditional upon relinquishment thereof by Amateur station licensees before that date upon fourteen days' notice if the band is required by the Television Service.

QUEENSLAND

JA openings few and far between and very patchy. Best opening was on Oct. 16 from 1255 to 1425 with good strength sigs. JAs appeared to be around all the afternoon together with Scatter tx's and f.m. stations from Tokyo, also HLKA Korea. I got down to serious listening at 1900, going QRT at 2203. JAs still in. 4ZBI worked six, Dane 4ZAX was active also during the dinner hour. The Brisbane gang were represented during the evening session by 4ZAX and 4ZBZ. JA districts 0, 1, 2, 3, 6, 7 and 9 that day.

On the 19th, JA1 and 3 at lunch time, S4/5, again at 1800-1930. 20th, JA1, 2, and 4 from 1815 to 2034, to S5. 24th, HLKA peaking S8 at 1315, but no JA. 25th, JA0, 1, 2, 4, and 6, HLKA and JALIGY from 1145 to 1303, peaking S9. Heard no further DX until the 31st, when JA3CE came up calling at 1250 and Mick 4ZAA worked him. 4ZBZ also was around. Thought that I heard sigs from VK5 one dinner time, on the 20th at 1320; who was talking I wonder? Was it you, Hugh, 5 Beer Corks. Heard that Bob 4NG and Lance 4ZAZ were being mentioned in dispatches. Also heard from 4ZBI's QTH on the 8th was a KH6 for about two minutes at 1825, S3.

Welcome to 50 Mc., 4ZCX, at present up near IGY, QTH about 40 miles south-west of Brisbane. Running on battery power. Mick 4ZAA appears to have cleaned up his t.v.i. and is back on 50. Bill 4WD must have migrated, the JAs will think him a new call sign when he does re-appear. Arthur 4ZBA has a P. & S. mod. now so he may get out much better when Es start again, if it starts. 4ZBY has a 5 element on the job now I believe. Les 4ZZ has ideas of starting on 50 Mc., I hope so, Lea.

Never hear Bruce 4BZ now, he has forgotten about 5 mx I think. Quite a bit of mobile activity up in the Brisbane area now. Alan 4ZBF talking about building a "2 water" for his new Minor by Xmas. Doug 4ZDL using hot 6V6 and quad. Max 4HD boxing up his 100TH now or is it the 3C/150A, Max?—4ZBI.

WESTERN AUSTRALIA

Conditions, on the whole, have been quiet this last three or four weeks except for two exceptionally good openings when the band

was open into JA for at least six hours. The last of these was on Nov. 3 when apparently all States had JA DX. JAs could be heard calling VK5BC, VK5ZAX and many other stations.

At last I am sure I have a definite identification of that carrier "with hum on it" on 49.75 Mc. and with the other carriers alongside. I now have no doubt at all that it is a Russian Television Channel on their Channel 2. Enquiries I have made confirm the following points:

(a) A comparison with TVW7 on an a.m. rx proves it is t.v. The two sigs are identical. Remember, of course, that a comparison of that type has only been possible since TVW7 opened here in October!

(b) Frequency is right—49.75 Mc.
(c) Beam direction is right—there are at least two t.v. stations in Siberia. The most distant (Novosibirsk) is about 20 degrees W. of N. from Perth and about 6,000 miles away.

(d) 5,000-6,000 miles appears to be about normal skip here. Tokyo is about 5,000 miles. JA8 is 5,800 miles. The distance, then, is right. I have been unable to locate the second Siberian station, but I suspect it is near Vladivostok (a harmonic of a t.v. station located in Vladivostok has been heard here.)

Incidentally, checking through my log I find I have logged the signal 54 times since March '58. That figure could be nearly doubled, however, since I have not logged the sig. when it has been present during a sizeable JA opening.

Local activity on 50 Mc. remains at quite a high level. Mobile activity is increasing, with Frank 6CC joining in. 6ZBY is still an active country station—the only active one within 100 per cent. contact of Perth (70 miles). 6WGN, 6ZBF, 6ZBM, 6ZAH and 6JG are all active on 50 Mc.—6BE.

144 MEGACYCLES

VICTORIA

Two metre activity as heard from Ballarat has been quite high during October and estimates made from log book entries indicate an increase of over 100 per cent. in the number of stations operating compared to a similar period last year. No outstanding DX has been worked, but a number of new comers and not so new comers in Melbourne have worked Ballarat stations for the first time.

An interesting contact was made when Ron 3ZER and yours truly contacted Syd 3CI in Nagambie on Nov. 1 and then again on Nov. 2 when Syd worked five stations in the Ballarat area: 3PO, 3SE, 3ZBS, 3ZER and 3ZEJ. The Ballarat-Nagambie path had previously been regarded as very difficult but the signal levels indicated that this is not so. A series of skeds have been arranged to prove this point.

S.a.b. has made its appearance on 144 Mc. in Ballarat. Brian 3ZBS put on a signal on 144.8 from a base exciter on Nov. 1. Much work remains to be done, however, and Brian does not expect to be working DX on s.a.b. for a while yet. 3ZEJ is still a few nights work behind with the s.a.b. exciter.

VK3/VK5 skeds are continuing each night at the new times announced over the VK3 W.I.A. broadcast during October. For anyone who missed the times the sked starts at 1930 E.A.S.T. when VK3 calls, 1935 VK6 calls, 1940 VK3 calls, 1945 VK6 calls. The same schedule applies each and every night. The change was made because it was felt that there was more likelihood of achieving contact by Es reflection at this time and also because the earlier hour is more convenient to the more active participants at each end. There has been no positive signals identified by either end as yet. What about some VK2 and VK4 participation? These skeds may result in existing records being broken and even if nothing occurs, they do stimulate increased activity which can do nothing but good.—3ZEJ.

QUEENSLAND

Seems as if Ron 4ZBZ has acquired a 522 tx, have you a rx also, Ron? 4ZBI should have converter on by Xmas. Vic 4ZBT proposes 6AV6s, cascade final. Wonder if Bob 4NG got his converter on 2 mx during his holidays?—4ZBI.

WESTERN AUSTRALIA

Activity here is increasing with quite a few stations now operating. 6ZDS, 6BO, 6WG, 6ZAV, 6ZBW, 6GB are all regulars. The daily 6BO/6WG sked and VK3ZEJ skeds still continue. One unidentified sig on about 144.9 was heard in VK6 during the 3ZEJ sked. It was not breakthrough and no local station operates there as far as we know.

Fox hunts are still held each month, commencing from King's Park. Much fun is had by all.

(Continued on Page 24)

DX

John C. Pinnell, VK2ZR
15 Summit Avenue,
Earlwood, N.S.W.,
Phone: UW 4246.

Conditions this month have been fairly good and many reports have been sent in. On some days, in Sydney, DX was hampered by heavy storms, but on others, conditions were excellent.

NEWS AND NOTES

VU2JA operates on 28, 21 and 14 Mc. c.w. His other calls were VS8AA and MP4BAF. He has now retired from his MP4-land job and lives in India. Joe has been on the air for 27 years and is anxious to meet OTs as well as the newer ones.

Anyone working or hearing CR6LA will, on the receipt of a correct report, get a QSL card and a special certificate, the "Certificate of Luanda." CR6LA operated as the official station for the Exhibition of Luanda (Angola).

There is a possibility of a large scale DX-pedition to the Galapagos Islands which is tentatively scheduled to take place early in January next year. The operators lined up so far are W8MKS, OAGM, OA4CX, OAMIGY, and possibly one or two more from Peru.

One or two MP4 signals of recent weeks are from phonies, according to MP4QAO. At the time of writing, the only legal activity in Trucial Oman is MP4DAA on Das Island, MP4TAC at Sharjah, and MP4TAE from Tarif.

VR4BW, Solomon Islands, is now reported active from this rare spot. He has been worked on 21 Mc. phone.

Walt DL9PF is seriously planning an expedition to Turkey, in Istanbul, during June 1960. His earlier effort this year was turned down by Turkish licensing authorities, but it is now understood that the curtain against TA licensing has been lifted. If Walt's request for a call goes through, he will operate on s.s.b. and c.w.

CE8AH is active from Paradise Bay, Grahamland. His c.w. 14 Mc. signal is good, but very slow and halting due to the lack of the English language.

Lambert ZS6IF plans to operate as ZS6IF/8 from Basutoland from December 12 to 20, 1959. He will be on c.w. for sure and possibly s.s.b. Next year he plans a journey to ZS9, TG5HC, Brother Pat, and ex-YNACB, is now on the air from his new location in Guatemala. SV0WE has QRT from Rhodes last November and his place will be taken by SV0WT who hopes to be on the air early in the new year. SV0WT will be on Crete for the whole of the year 1960.

MP4BCN (ex-ZD3G) has moved to British Somaliland and should be active again very soon. Anyone who worked the legit MP4BCN and/or ZD3G can get a QSL through W2ZGB as soon as he gets the information (W2ZGB).

Herve VQ8BBB has been worked from St. Brandon Groupe on 14 Mc. His location was given as Carajas Island.

MP4BCC cards should be arriving any time now as WOMLY sent him a batch of 1,000 cards early in October.

HZIAB, Saudi Arabia, is now working on 10 metre phone, s.s.b. mostly, around 28550 Kc. When QSLing please mention the operator you work, since there are several operators and each takes care of cards addressed to him.

Gus Browning, W4BPD, is planning a very ambitious DX-pedition commencing March next year to Lisbon, Madrid; and Conakry, Guinea; then to Monrovia, Liberia; Accra, Ghana; possibly Uganda; and then to Nairobi, Kenya. VQ4GT and AQ will accompany him to Dar es Salaam, Tanganyika. They will continue on to Zanzibar, across to Aldabaras; Cosmoledo Is., St. Pierre; Providence; Farquhar Islands; the Isles Gloreuses; and if possible land on Tromelins. Other places will probably include Addis Ababa, Ethiopia, British Somaliland, Saudi Arabia, then into Yemen, then back through Egypt and Europe. The trip will take about three months.

Danny Weil has found his new boat, which will be called Yasme III. He expects to be on the air on his new world tour from the Galapagos early in the new year.

* Call signs and prefixes worked.
z zero time—GMT.

FK2AU will be using W4IKM's transmitter on Wallis Island, FW8, during January 1960.

There is a possibility that Cal YAIW will be on the air from Laccadive Islands as VU4 during November; from Andaman or Nicobar Islands about mid December (VU5); and from AC5, Bhutan, in January.

VS5GS, Brunel, is increasing his flea power rig to a 100 watt job and should be much easier to work.

UA0BD is located on Bolshevik Island in the Arctic Ocean, off Taimyr Peninsula, in Zone 18. Works c.w. 14 Mc.

VF4WD is located on Tobago Island, 20 miles north-east of Trinidad. His address is Hotel Carusoe, Tobago, B.W.I.

Bryan MP4QAO will operate on 14000 Kc. c.w. and 14300 Kc. a.m. from MP4TAE and MP4MAB for short periods during his weekly flights to those rare spots. He can only hear signals within 7 Kc. of those frequencies with his crystal-controlled receiver, and cannot copy s.s.b.

It is reported that a number of illegal stations are working from British Honduras. Some have been caught, but at least one is still active, signing different calls and using different names. VPIHA, VPIOLY, VPIGLG, VP-IEE, and VPIEK are all legitimate and each QSL 100 per cent, upon receipt of a card. They all work 7, 14, 21 or 28 Mc.

The first license issued to Korean nationals is HL9TA, which is the Korean Amateur Radio League station. There are five licensed operators for this club including a YL. They are permitted to use phone only, and run about 50 watts on 7050 Kc., 21150, 14100 and 28200 Kc.

There are five licensed Korean stations: HL-9KJ, KR, KS, KT and TA. HL9KJ is looking for VK contacts and is using 45 watts phone. QSLs via Korean Ministry of Communications Seoul, Korea. (5QX, via ZET).

VS90C is a new station in the Sultanate of Oman. It is a club station and all QSLs should go to VS90C, via the R.S.G.B. both ways.

Tokelau Island, ZM7, may possibly become active for three months of the year if gear can be made available. A government operator (not yet a Ham) is located at British Samoa. He has agreed to take out a license but can't afford to equip a station.

ZD8JP, Ascension Island, has a new transmitter that operates on all bands and should be much more active in the future, especially on 20 metres.

VU2NR, Raju, will accompany the VU2ANI DX-pedition to Andaman and Nicobar Islands in December. He reports that there have never been any VU4 or VU5 calls officially issued by the Government of India, and that any prior such calls were pirates.

Liberia.—If you need Liberia on any one of several bands, EL4A reports a schedule he will observe that should give you an excellent opportunity. Operating c.w. only.

Saturday at 0400 GMT, on 7006 Kc.
Every day but Saturdays at 0400 GMT on 14012 Kc.

On numerically even days of the month (2, 4, 6, etc.) he will be on 21030 Kc. at 1615 GMT.

On numerically odd days of the month on 28040 Kc. at 1615 GMT.

QSL to Ken EL4A, P.O. Box 80, Monrovia, Liberia.

VK3ARK will be on Lord Howe Island for three weeks starting November 15. (BERS195).

(ISWL-G-7176) JT1AA and 1YL are now OK1KW and 1KX respectively. OK1KX is handling QSLs for JT1AB. 9N1AC is active on s.s.b. OH2KK/O and OH2V/O were on Aaland Island from 17th Sept. to 22nd. YA-11W is planning an expedition to VU4, VU5 and AC5. MP4QAO is active on 14 Mc. c.w. every Thursday from 1700z to 2000z. He uses an aircraft 150 watt tx.

ACTIVITIES

7 Mc. C.w.—2AMB: HC4IE*, OA4FM, 2QL: V7RBA*, PY2BIS. 8YD: EA4FO*, F3NB*, G2BY*, G2CD*, G3B9*, G3DVF*, G3HQX*, G3JAG*, G3K2R*, G3LAG*, G3LET*, JAI to JA0*, KH6CFE*, OA4FM*, OK2BEK*, OQ5RU*, SM5BJO*, UA0CJ*, VQ2BK*, VQ2JG*, VQ-2GW*, VQ2RG*, CR7IZ*, VQ2W*, VQ2WR*, VQ3HD*, VQ4DT*, VR1B*, VR2DA*, W3*, VS*, VY4AS*, ZETJN*, ZEBJO*, ZEBJW*, ZEBJY*, ZS4RU*, ZSS5U*, ZSSYJ*, ZS6ASX*, BERS100: DL4YP, F2DS, G3JAG, HA5DH, HB9MC, JA-1YL, LZ1KBA, MP4TAF, OK3KE, SP9GT, UA3YI, UA0FC, UBSKBE, G8AW, UO3PK, UC20M, UR2KAE, VQ2CZ, UQ2JG, UQ2W, YO-3AC, YU3FOP, ZC4IP, ZEBJW, ZS6DH, 4X4KC, OZ4LF/MM.

7 Mc. Phone.—2AQ: W4PHL* s.s.b. L2001: VR2CC.

14 Mc. C.w.—2AMB: CN8BK*, CR7IZ*, GC-2FZC*, KM6BI*, I1BAR*, OQ6PS*, SU1MS*, VR3V*, VS4FC*, VS90C*, ZS6AIL*, DU1NL, DU2DL, FB8BE, FB8CE, FB8FY, FB8XK, FO-8AC, FO8AK, FK8AW, ET2US, HL0KQ, KZ5FK, LU8ZL, PY8YG, ST2AR, VE8CA, VU2SX, ZD-6FC, 9K2AN, 20W: CX5CO*, FG8XE*, CM-2YN*, KC6ZZ*, LU6SE*, LU4OI*, KV4BQ*, PY4AO*, UA0KDA*, KKD*, KIA*, VF*, KFG*, LK*, UA9VB*, UD6KAF*, UM6KAA*, KC6JA*, West Carolines, VS4FC*, XZ2AD* (VE8AY* and UA0IK in Arctic), 9M2EV*, GE*, FK*, 8J1AA*, 2QL: CP3CN*, CR7IZ*, F2CB/FC*, FB8CE*, FB8FY*, FB8XK*, VS5PM*, ZD2GUP*, FQ8HK, MP4BCV, TAC, TAF, VS90C, 2ZR: CO7NR*, DU1DR*, DM2AMG*, DL4KF*, EA-1BC*, G3DBZ*, HB9EU, HC2IU*, I1VB*, JZ-0DA*, LA8GZ*, LU2HBM, OH8QA*, OK3EA*, ON4FU*, PY4AO*, FY7AGY*, PA0LAU*, SP-6WM*, SL5AX*, SM5TK*, T1ZW*, UA1AS*, UA4KFC*, UB5EO*, UC2KAA*, UO5FP*, VP-8EP*, VR1B*, VS4FC*, XZ2AD*, YU2ZR*, ZE-8J*, 4DQ: DL1XZ*, DL9KZ*, FO8AC*, HA-5KFR*, LA3SG/P*, KV4AA*, OH1QE*, ON-4XK*, SM5L*, UA1KAG, UA0KZB, W/K*, JA/KA*, VE*, KH6*, DL2YU, I1L, LA2TG, OK1KFA, PY2AL, SM5CCCE, SPIJV, UD8IDB, VS4FC, 9M2EV, 9M2GE, 5BK, T1PZ*, XW-8AI*, FRUD*, 9M2GD*, VE1ON* (N.S.), BBR-195: BV1US, BV1UE, CN2BK, CR7AX, GC-2FMV, F2CB/FC, FO8AC, FB8FY, HC2IU, HL9KT, HR1VS, KC6JA, LASAD/P, LABGF/P, LU4DM, MP4BCU, OQ5JG, OQ5FS, PY4CB, T1-2PZ, UD6KAF, U18KAA, UM8KAA, VK0AF, RT, TF, VP7NS, VP9EO, VQ8BE, VR3V, VS-4FC, VS5PM, VS6BJ, VS90C, XW8AI, XZ2BB, YV3AN, YV3CD, YV4CI, YV5AFR, ZC4CS, 5A2TT, 8J1AA, 9G2BQ.

14 Mc. Phone.—2AMB: CN2BK*, EA3JO*, EA7ID*, OZ8KR, UR2BU, ZETJZ, ZS6ABD, ZS-6ANE (s.s.b.), OA4AW, ZL5AF, 2AQJ (all s.s.b.); DL4AS*, GW3EHN*, W6DMK*, YV-5AHE*, 3A0M: CE1AGJ, CE9AL*, CE9AM*, G3NNT*, TG9CP*, VE2AUH*, VE3DDI*, XE-2QA*, YV5AY*, VR2DA*, W/Ks*, 3BM: Long list of Europeans, E15P*, E19C*, G1J1M*, G14RY*, G4WCC*, GW3HXX*, PA0TWX*, OE-5NT*, CT2AI*, OH5SM (YL), UQ2AN*, UR-2BU*, YU3AB*, CN8JR*, CN8CS*, CX2AX*, KC4USK*, CO2ZS*, KZ5LC*, KZ5LT*, OA9B*, OD5AU*, OE3VP*, UB5A1*, F8CF*, VP9DK*, HK3LZ*, LU7BO*, T1ZOE*, YS1NS*, PI1J*, XE1CW*, 4DQ: W/K/VE*, KH6S*, CO2ZS*, EA3JE*, FO8AC*, I1SM*, LA3SG/P*, T1ZOE*, G2AMG, T1ZPI, VS90C, 5HW, HL9TA*, HL-9KJ*, OK1KFR*, TG9CP*, T1PZ*, UBSLV, VS9AZ* (Alden), VS90C* (Omen), VR2DP*, VQ2s, ZEs, ZSs*, L2001: CO2ZS, CT1EY, DJ-1BZ, DU1CJ, EA5JE, HK7LX, HL9KJ, I1SM, KM6BI, KX6AF, KZ5BC, LA8LF/MM, ON4OC, T1ZOE, VR2DA, VR2DT, VS90C, XE1CW, YV-5ANJ, ZC4CH, L3065 (s.s.b.): BV1UCC, HS1B, KC4USV, KR8DI, USA, GF, KX6BT; (a.m.) CO-2ZS, CT1PK, DU1GF, DU6PY, DU7SV, CN8IG, HL9KJ, HL9TA, I1ZFT, JA6BC, K86BH, KR-6CR, KR8HS, KH6s, OH5NQ, UA1DZ, VU2RG, VR2AZ, VR2DE, XE1SN, XK6CR, BBS196: CO2ZS, MP4DAA, T1ZOE, XE1RE.

21 Mc. C.w.—2AMB: XE1AX, 2QL: BV-1USB*, CE3AG*, KP4YT*, PY4AO*, T1ZCAH*, VR1B*, VQ2s*, ZSs*, XE1AX*, 457FJ*, KV4CG, ZBJJW, 2ZR: DL0HT*, BV1USB*, G6ZO*, GW3JL, F8VO, KR6MG*, LA4SG*, OH4TY*, ON4LX*, PAOPN*, PY4AO*, VU2MD*, UA4IF*, SM5AZU*, ZC5AF*, ZS1OU*, 5JK*, 6R*, 6NE*, 6MP*, 4DQ: W/K/VE/JA/KA/KH6S*, CE3AG, DUIDV*, DL7AQ*, F8PA*, JZ0HA*, G2BY*, G5NX*, GDF3FXN*, GM3ITN*, OA4AGI*, OE-1RZ*, OH3NE*, ON4QF*, PA0LU*, SM7ID*, SM5LL*, SM7BR*, SP7HX*, SP7SX*, T1ZCAH*, UA0CF*, UN1NA*, UA4KHA*, VR1B*, VQ3HD*, VS90M*, XZ2TH*, VSSGS*, VS6BJ*, PAOWH, XE1AX*, ZEBJY*, DL9RK, EA7LC, EL4A, HB-9KX, JZ0HA, I1ADW, I1CYE, OH7OI, LZ1WD, MP4QAO, UC20M, VU2RM, UP2KAC, YU3FS.

21 Mc. Phone.—3BM: SP8CK*, XE1KQ*, PJ-2CM, OA4KH* (YL), VS1GQ*, VU2NR*, 4DQ: EA2EL*, F8BC*, DJ2VZ*, DL3LL*, DJ3MH*, CN8DG*, CN8JK*, DJ4YH*, DU1GF*, DU1VQ*, G3AAM*, G3LDO*, G3IRD*, G3FPQ*, G3NMB*, G6XN*, G5TN*, G8P*, HB9NU*, MP4BCC*, JZ0HA*, I1RIF*, OA4JH*, OA4CS*, OA8B*, OQ5LL*, OZ4FA*, PA0HBO*, SM7BR*, T1-20E*, VS1FZ*, UQ2AN*, UR2BU*, VR2DF*, VS6GS*, VU2AZ*, VU2NR*, VS1BJ*, ZEBJY*, 4X4FF*, KR6QB*, KR6HS*, KR6BR*, YV5AGJ, JA/KA/W/K/VE/KH6*, KL7*, 9M2DW*, 9M-2DQ*, 9M2HC*, FT5Y, HB9JA, ON4BW, OH-5XM, T1ZVM, KX6BT, YN1WV, YV5HT, ZD-6BT, ZETJX, L2001: DL6WC, DL2UZ, CT1FY, F8AC, F2ES, G3NNT, G5TN, G8KS, I1FT, GM2DW, ON4GN, OZ4FA, KR6HS, UR2BU, VK9DB, VU2NR, 9M2DQ, L8065: DL3LL, DU-1GF, OH5NQ, VR2AZ, VR2DF, CN8IG, KR6CR, DNASZ, DU7SV, I1ZFT, 9M2DQ, 4X4BG.

28 Mc. C.w.—2QL: KZ5LC*, W/K/VE*, UA-0SK*, VR1B*, VR2DA*, 457FJ*.

ADDRESSES

XZ2AD—P.O. Box 1290, Rangoon, Burma.
ZDIPB—Army P.O., Freetown, Sierra Leone.
HP1AC—Cam, P.O. Box 354, Panama City, Republic of Panama.
OA2P—P.O. Box 235, Trujillo, Peru.
ZB1HB—H. Biltcliffe, 19 flat, N.A.T.O. Building, Floriana, Malta, G.C.
RC2ASL—Balerie, Box 88, Moscow.
PJ3AA—C/o. Government Radio Station, Aruba, N.W.I.
HV1CN—Via W2BIB (for current s.s.b. operation).
FN8AD—P.O. Box 534, New Delhi, India.
ZD3F—Frank Buckley, C/o. Cable Wireless Ltd., Bathurst, Gambia (P.O. Box 266).
FR7ZA—Louis Ferrier, Boite Postale 330, St. Denis, Reunion Island.
PX1EX—QSL via R.E.F.
VP8CV—Eric Ward, P.O. Box 182, Port Stanley, Falkland Island.
PX2XP—Is a pirate.
AP2BP—Via G2MI.
AP5B—Now G3HS.
PK6CS—Mr. Cor Stoop, C/o. Fed. Tel. and Tel. Co., Dept. of Govt., Neth. N.G.
TG9RO—Apartado Postal 288, Guatemala City, Guatemala.
YA1AO—P.O. Box 4044, Frankfurt, Germany.
YN1CI—P.O. Box 568, Managua, Nicaragua.
VS9OC and **MP4TAF**—QSL via R.S.G.B. (2QL and L2001).
PJ2ME—C/o. B. Swedloff, Box 82, Blackwood, New Jersey, U.S.A. (2QL).
Ex-VK0PK—Peter King, C/o. O.T.C., Port Moresby. (BERS195).

QSLs RECEIVED

2AMB: VT2AI, KB6BJ, OH1SY, MP4BBD, VP8EP, UZ2BK, XW8AI, 20W: BV1A, FB8XX, HC1HL, HH2LD, IT1TAI, JT1YL, KV4BO, OK3KMS, UAOKUV, UA3AN, UA9OI, UC2AD, UC5FK, UL7KKB, VP8CB, VP8Y, ZS6R, 9M2FK, 9M2GE. 2QL: GQ2EMV, J20HA, LA2E/P, T12WD, T19CW, VQ5EK, VQ3CF, VSPFM, EW8AI, Z2R: HK4JC, T12W, VQ2JM, ZCARP, ZS4IO, ZP5JP, 3AOM: VE8DD, VE8DX, BERS-195: CN8D, DU1OR, FK8AU, KM6BI, OD5LX, UC2BC, VK9RO, VK0PK, VQ2EW, VQ4FO, VQ6AB, 4X4I, 9M2GF, JA3ACT/MM, 2AQJ; DL4AS, G3FII, VE3BWY, VE3OL, VE7ZM, VK8AD, YV8AHE.

I wish to thank Don Chesser, W4KVK, for the use of his DX magazine, via 2QL, in compiling these notes. 2AMB, thanks for the list Laurie, 20W, it is good to hear from you again Gordon, and pleased to know four in the list are new countries for you. 2QL, your assistance is much appreciated. Frank, 3AOM, found DX pretty scarce from his location; partly due to excessive static, and partly to Aurora phenomena; on the other hand he has heard quite a deal of good DX being worked by other VK8s who seemed to hear 'em better than he could. (Suggestion to these latter: Why don't you send in your DX lists to A.R.?) George had QSLs of interest from VE8DD and VE8DX, who are connected with the "Dewline" station on the Beaufort Sea, in the extreme North of Canada. The address for these stations is: C/o. Federal Electric Corp., P.O. Box 2330, Edmonton, Alberta, Canada.

To SBM, good to know you have made a comeback after so many years; Bruce has been inactive since 1949. He was well known for his set of eleven 840 ft. long vee beams (12 W/L on 20) for all bands in all directions. Notes on your activities will be appreciated. 4DO, that new quad seems to be doing a good job on the 21 Mc. band, Hal, L2001, congratulations on your effort in the VK/ZL Contest, Barney, L3065, best luck with your exams., Ian, and f.b. getting those five new countries. 2AQJ: Bud says, "Time was taken up looking after broadcasts from Parliament House at Canberra." He has sent in some s.s.b. activities. 3YD: Your activities on the poor old 7 Mc. band should make some of the DX boys sit up and take notice. Your list of seventeen stations worked from Africa certainly brings this band to the fore. Reg was 2IG, at Albany, before the war and did the Southern Zone Notes. Will be looking for your notes next month, Reg.

BERS-195: Eric heard 9G1BQ and LA5AD/P this month to bring his total up to 247 countries with 247 confirmed. He has had QSLs from 105 countries so far this year. Guess some must answer s.w.l. reports. 15WL/G-1178: Thanks for the first information received direct from England. Roger has a QSL score of 117 countries in 38 Zones. He got up early one morning to try for Zone 30 and heard VK2OZ, YB, ZR, ZL3GU and 4AW. Best of luck with Zones 23 and 30. 5RK: Thanks Ray for the activities of yourself and SHW. Hope 5WP will be active again soon and that he finds the new QTH to his liking. 4HD: Your notes and list were received a few hours too late, Max, but will be included in next month's issue. 73, cuagn next month.

CORRESPONDENCE

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

AUSTRALIAN DXCC AWARD

C/o. Dept. of Inland Revenue, Johore Bahru, Johore, Federation of Malaya.

Editor "A.R." Dear Sir,

Your Awards Manager's letter on the Australian DXCC Award, published in the June 1959 issue of your magazine is a most interesting expression of views, interesting from the point of view that it is very largely a case of "the kettle calling the pot black."

I cannot really appreciate the use of such references as "glaring idiosyncrasies" — "utter nonsense" — "sheer nonsense," etc. Such expressions, genuine or otherwise, are not in keeping with the so-called Ham spirit. Perhaps, on the other hand, the object of the letter was to cause friction between the W.I.A. and the A.R.R.L. As far as I am aware, the individuals concerned in the A.R.R.L. Awards section are only Radio Amateurs and not Professors of Geography.

With regard to some of VK3XU's statements, may I comment as follows:—

1. The Gold Coast was a Crown Colony prior to obtaining independence. (This is not intended to suggest that I agree with the A.R.R.L. decision.)
2. Nine-elevenths of the Federation of Malaya was a Protectorate prior to obtaining independence.
3. Singapore has only been granted partial self-government.
4. As far as Sarawak is concerned, I presume your writer is referring to some constitutional changes which took place during 1945 when the Nipponese sailed back to the land of the "Rising Sun". As far as I can ascertain, there has been very little political development in Sarawak since then.

As one Ham editor to another, why don't you use a blue pencil occasionally?

—S. A. Faulkner,

Hon. Secretary, M.A.R.T.S.

[As evidenced by the publication of your letter in full, I believe in the democratic right of an individual to express his opinion.—Editor.]

V.H.F. CENTURY AWARD

Editor "A.R." Dear Sir,

Scanning this month's F.E. Notes, while awaiting the commencement of my favourite t.v. programme, I noted that that erstwhile worthy project, the V.h.f. Century Award, has been mentioned publicly for the first time.

News of its inauguration was told to a v.h.f. meeting by a Federal Councillor late in 1952,

and a few of us who were interested resolved to try and collect the necessary 100 QSL cards.

Several hundred hours later, having listened politely to long discourses on the weather, house painting, auntie's illness, the delinquencies of the young, "bomb" troubles, bush picnics and photography, I found that I was floored by the fundamental fact that the VK2 QSL rate barely exceeds 30 per cent. Seven years later, for about 190 different 2 metre stations worked, I don't possess 100 QSL cards — nor am I now deeply concerned that I ever will.

In 1953 my plea for the acceptance of a "letter of acknowledgment of contact" in lieu of a card, having failed to impress an apathetic V.h.f. Group and an unsympathetic State officer-bearer, was directed to F.E. I possess a thick file of correspondence with that body and was winning the one-man battle, until F.E. produced a fresh team of horses and I retired exhausted and disillusioned.

The problem of design and finance of the certificate could have been dealt with seven years ago, had the facts been made public. At that time I had access to an out-of-work artist, who would have been pleased to accept the contract for the price of a couple of meals. Pending the arrival of a suitable certificate, the enthusiasts should have been encouraged to go ahead and get their 100 contacts and have been awarded a temporary acknowledgment for so doing.

Most of the v.h.f. pioneers have gone to 40 metres, to photography, or have just gone.

To work 100 stations nowadays is no great achievement. For 2 metres you just set up gear in Melbourne or Sydney; for 6 metres you go to VK4 and work JAS.

The really fascinating pastime in v.h.f. is to try and get that elusive 5 metre W.A.S. award, it being entirely dependent upon the inclination of someone to go to N.T.

—H. A. F. Rofo, VK2HE.

CONTEST RULES

Editor "A.R." Dear Sir,

I don't know what the Federal Contest Committee are doing, as up to now we don't know when the Ross Hull Contest is to be held and as they want as many as possible to take part in the Contest. If we know earlier than this, as in other years, we can then arrange our holidays so we can take part, but this year we don't know when or the rules for the Contest. Also I wrote to the Contest Committee in July, but was told that it was too late to make alterations to the Contest. That was over four months ago. How long do they need to makes rules and print them?

—A. W. Rushby, VK2ABR.

[Unfortunately, the Chairman of the Federal Contest Committee suffered a serious illness recently, and another member had to go to New Zealand on business for two months. Under the circumstances, I think we can show a little Ham Spirit on this occasion and forgive the delay.—Editor.]



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VK4TC AT TOWNSVILLE INDUSTRIES FAIR

V H F
(Continued from Page 21)

On 17th, 18th, and 19th September the Townsville boys ran an Amateur Station under the call sign of VK4TC. As will be seen by the accompanying photograph it was well laid out and pleasing to the artistic eye of the President of the Townsville Amateur Radio Club, VK4PS.

Pride of place was given to the T.A.R.C. call sign, VK4TC. On the back wall were maps of all parts of the world in great detail, while in the centre foreground a map of the world sported flags of countries worked when the photograph was taken.

trical gadgets which were not suppressed. Never fear, chaps, all who were worked will receive a QSL card depicting the station, I hope, donated by VK4EJ.

The assistance given by people outside the club was greatly appreciated. While to the very few of the boys who did the yeoman work, I say "many thanks."

This is the first time we have organised an exhibition and the experience gained will be of great assistance for the future exhibitions.

—R. W. Wilson, VK4RW.

288 Mc. GEC still possesses his t.v. camera. Believe the tx works and sigs have been sent out. 6FM is threatening to build a 150w. 289 Mc. tx using a 4X150A. Several chaps have xtal controlled gear on 288, but activity is low at present.

T.V.: Channel 7 appears to be giving pretty fair coverage and several VK6s are spending some time looking. Purely academic interest, of course. 6ZBY is a regular "looker". 6ZBG, 6BU, 6GB, 6XD and 6CL all are interested.

At last! Our first case of t.v.i. Ron's (6FM) neighbour reports t.v.i. Doesn't appear to be serious, however. What will you do to Channel 2, Ron?—6BE.

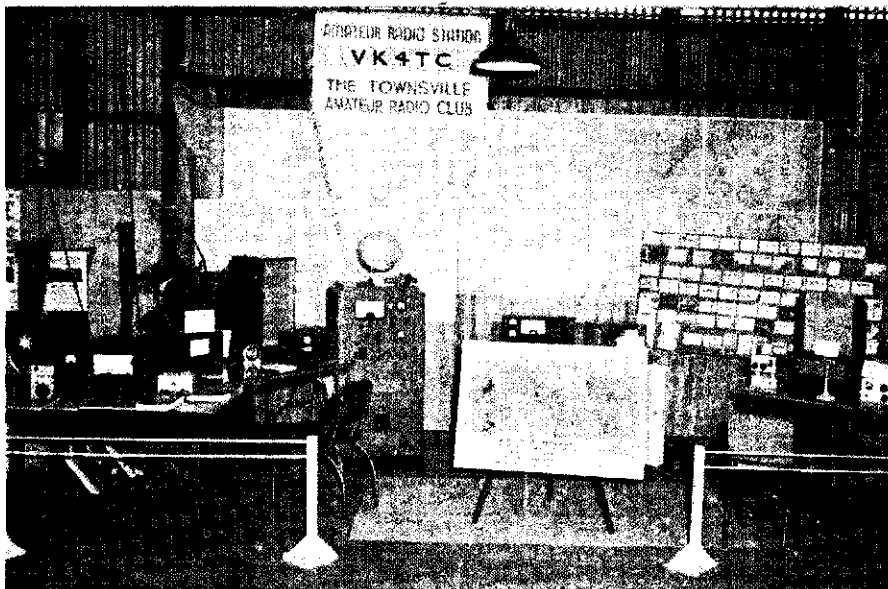
A.T.V. AND T.V.I.

Len 3ZGP has been wrestling with some t.v.i., but appears to have cleaned the trouble up thanks to the help of Mac 3QO. He found one piece of trouble happening often and worth passing on. Those concentric air trimmers, 3/30 pF. variety. If you contemplate using these, make sure when installing that the ceramic pillar supporting the rotor area is not coated with aluminium rubbed off the sleeve of the rotor. Bet you bottles to nothing that your drive problems could be traced to this unit. Three recent events resulting in low drive and poor results were removed in one case by fitting a new unit, and others by fitting a normal trimmer capacitor. It is worth checking. The constant screwing in and out of the rotors steadily leaves a deposit of aluminium on the ceramic pillar. Wondered why I got a dead short across one earlier.

GENERAL NEWS

Victoria.—The October V.h.f. Group meeting was well attended and those present heard an interesting tape on t.v. from the British Amateur T.V. Group. General information on Amateur t.v. and a discussion on a simple scanner for reproducing images on a c.r.t. utilising a photo electric cell in a simple flying spot scanner. Further tapes are available on more advanced equipment which could be played for those interested. We were indebted to Charlie 3AAK for the tapes. The recent 6 mx scramble took place on Oct. 25 with some 22 stations participating. John 3ZFO took the honours in this event with 19 stations worked. Quite a successful evening.

Cheers for all in VK3. Christmas Greetings to all the v.h.f. gang in other States from all the v.h.f. gang in VK3, likewise from self. —3ZGP.



The station on the right was on 50 Mc., exhibited and manned by VK4ZBE. In the background were QSL cards of over 100 countries.

The table on the left had a very nice home-brew receiver, etc., built by VK4DD, together with books appertaining to Amateur Radio.

The next was a complete station of VK4PS and manned by various operators, and in the centre at the back was a table of various home-made equipment lent by the boys for this great occasion.

Unfortunately there is no photograph of the aerial systems used. These were as follows: VK4PS home-brew G4ZU on top of VK4BQ's new tower, 45 ft., also 4 element for 144 Mc. link with VK4MF and 30 ft. water pipe sported the 4 element yagi from VK4RW. A dipole was used on 7 Mc.

We were sorry to disappoint the 7 Mc. boys as we experienced very bad t.v.i. on the "closed" circuit t.v. run and demonstrated by A.W.A. Quite a number of contacts were made and a larger number not worked—although we were called—due to the extra high noise level from various stands in the proximity demonstrating elec-

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 Fed. Asst. Secretary: W. Mitchell, VK3UM,
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 Federal Councillors:
 New South Wales—Bob Godsell, VK2ARG.
 Victoria—Alan Elliott, VK3AEL.
 Queensland—Arthur Walz, VK4AW.
 South Australia—Rex Richards, VK5DO.
 Western Australia—Ron Hugo, VK6KW.
 Tasmania—E. J. Cruise, VK7EJ.
 Papua-New Guinea—Russ Coleston, VK9XK.
 Fed. Contest Committee: Alex Hubbard, VK-
 7AX, Manager, Box 371B, Hobart, Tas.
 QSL Bureau: R. E. Jones, VK3RJ, 23 Landale
 Street, Box Hill, E.11, Vic.
 Awards Manager: A. G. Weynton, VK3XU,
 5 York Street, Bonbeach, Vic.

NEW SOUTH WALES

President: Dave Duff, VK2EO.
 Secretary: Norm Beard, VK2ALJ, Box 1734,
 G.P.O., Sydney.
 Meeting Night: Fourth Friday of each month at
 Science House, Gloucester Street, Sydney.
 QSL Bureau: Box 1734, G.P.O., Sydney, Frank
 Hine, VK2QL, Manager; assisted by Allan
 Smith, VK2AIR.
 Zone Correspondents: North Coast and Table-
 lands: Noel Hanson, VK2AHH, Ryan Ave.,
 West Kempsey; Hunter Branch: R. W. Rose,
 VK2AQR, 17 Brooks St., West Wallsend;
 Coalfields and Lakes: H. Hawkins, VK-
 2YL, 9 Comfort Av., Cessnock; Western: W.
 Stitt, VK2WH, "Cambijowa," Forbes; South
 Coast & Southern: E. Fisher, VK2DY, 2 Oxlade
 St., Warrawong; Sth. Western: J. W. S. Edge,
 VK2AJO, Wallace St., Coolamon; Tamworth:
 S. Smith, VK2APS, 50 Upper St., Tamworth.

VICTORIA

President: D. A. Wardlaw, VK3ADW.
 Secretary: J. R. Lancaster, VK3JL.

NOTES

Administrative Secretary: Mrs. May, 478 Vic-
 toria Parade, East Melbourne, C.2. Postal
 address: P.O. Box 36, East Melbourne, C.2.
 Meeting Night: First Wednesday of each month
 at the Radio School, Royal Melbourne Tech-
 nical College.

QSL Bureau: Inwards and Outwards—W.I.A.,
 Vic. Div., P.O. Box 36, East Melbourne, C.2.
 Zone Correspondents: Western: W. J. Kinsella,
 VK3AKW, Magdala, Lubeck; South Western:
 W. Wines, 48 Cranley St., Warrnambool; Far
 North Western: M. Folie, VK3GZ, 101 Lemon
 Ave., Mildura; Midlands: R. Jonasson, VK-
 3ND, Farnsworth St., Castlemaine; North
 Eastern: T. K. Tennant, Park St., Tatura;
 Eastern: W. G. Francis, VK3ZCG, 30 Windsor
 Ave., Moe.

QUEENSLAND

President: John Pickles, VK4FP.
 Secretary: W. J. Rafter, VK4PR, Box 636J,
 G.P.O., Brisbane.
 Meeting Night: Fourth Friday in each month at
 the State Service Union Rooms, Elizabeth
 Street, Brisbane.

Divisional Sub-Editor: D. B. Hughes, VK4ZBD,
 60 Mayne Rd., Bowen Hills, Brisbane.
 QSL Bureau: Jack Files, VK4JF, Vanda St.,
 Buranda.

Zone Correspondents: Maryborough: R. J.
 Glassop, VK4BG, 80 North St., Maryborough;
 Townsville: R. K. Wilson, VK4RW, Hogan
 St., Stuart, Townsville.

SOUTH AUSTRALIA

President: B. W. Austin, VK5CA.
 Secretary: J. C. Haseldine, VK5JC, Box 1234K,
 G.P.O., Adelaide. Telephone: M 7851.
 Meeting Night: Second Tuesday of each month
 at 17 Waymouth St., Adelaide.
 Divisional Sub-Editor: W. W. Parsons, VK5PS,
 10 Victoria Ave., Rose Park, S.A.
 QSL Bureau: G. Luxton, VK5RX, 27 Belair Rd.,
 West Mitcham, S.A. (Inwards & Outwards).

WESTERN AUSTRALIA

President: L. Roeger, VK6HR.
 Secretary: L. S. Eddington, VK6LS, Box N1002,
 G.P.O., Perth, W.A.
 Meeting Night: Third Tuesday of month at
 Perth Tech. College Annexe, Mounts Bay Rd.
 Divisional Sub-Editor: C. E. J. Sangster, VK6CS,
 Windsor Hotel, South Perth.
 QSL Bureau: Jim Rumble, VK6RU, Box F319,
 G.P.O., Perth, W.A. (Inwards and Outwards).

TASMANIA

President: Mr. L. R. Jensen, VK7LJ.
 Secretary: K. E. Millin, VK7KA, Box 571B,
 G.P.O., Hobart.
 Meeting Night: First Wednesday of each month
 at W.I.A. Clubroom, 147 Liverpool St., Hobart.
 Divisional Sub-Editor: I. Nichols, VK7ZZ, 9
 Cressy St., New Town.
 QSL Bureau: J. Batchler, VK7JB, 39 Willow-
 dene Ave., Lower Sandy Bay, Hobart.
 Zone Correspondent: North Western Zone—
 Terry Tong, VK7TT, Northern Zone—Ray
 Waldon.

PAPUA—NEW GUINEA

President: D. Brown, VK9SB.
 Secretary: Roy Taylor, VK9AU, P.O. Box 204,
 Port Moresby.
 Meeting Night: Last Wednesday in each month,
 R.S.L. Reading Rooms, Ela Beach, Port Moresby.
 QSL Bureau: C/o P.O. Box 204, Port Moresby.

FEDERAL

EXTENDED USE OF 50-54 Mc. BAND

Pursuant to a request from the W.I.A. for
 the continued use of the band 50-54 Mc., the
 Postmaster-General's Department has author-
 ized the use of the band until 31st December,
 1960, conditional upon relinquishment thereof
 by Amateur station licensees before that date
 upon fourteen days' notice if the band is
 required by the Television Service.

AMENDMENTS TO FEDERAL CONSTITUTION

The undermentioned amendments to the
 Federal Constitution have been agreed to and
 are published for information of all concerned.

- | Clause | Amendment |
|--------|--|
| 21. | That the word after "two" in the fifth line, the word "fifths" be deleted. |
| 41a. | That after the word "its" in the first line, the word "financial" be deleted and the word "fiscal" be inserted in lieu thereof. |
| 52. | That all after the word "additional" in the second last line be deleted and the following be inserted in lieu thereof: "to any deliberative vote he may have on behalf of his Division." |
| 55. | After the word "decisions" in the seventh line, the words "within two months of the conclusion of the Federal Convention" be deleted. |
| 72. | That after the word "Divisions" in the first line, the word "voting" be deleted and all after the word "carried" in the second line be deleted. |

U.S.S.R. CONTEST REPORT

On 14th and 15th March, 1959, the Central Amateur Radio Club of the U.S.S.R. conducted a Contest to celebrate the 100th birthday anniversary of the great Russian scientist, A. S. Popov, whom the Russians claim to be the inventor of radio.

Forty-eight countries took part in the contest and logs were received from twenty-three countries as follows:—

Country	Total Stations taking part	Logs Received
U.S.S.R.	245	118
Poland	39	18
Roumania	37	13
German People's Repub.	32	4
Austria	16	4
Denmark	7	3
Switzerland	9	3
Japan	14	3
Finland	11	2
Australia	8	2
Yugoslavia	12	3
France	27	2
New Zealand	5	1
U.S.A.	128	1
United Kingdom	38	1
Columbia	4	1
Brazil	14	1
Holland	4	1
Czechoslovakia	6	1
Panama Canal Zone	1	1
Liberia	3	1
Italy	43	1
Cuba	3	1
	745	188

Results of the distribution of points places United Kingdom first with a total of 24 contacts for a total of 559 points; and Australia second with 22 contacts for a total of 468 points. The two Australian stations which submitted logs were VK5NO and VK2OV.

AMATEUR OPERATORS' CERTIFICATES OF PROFICIENCY

Following is a list showing the names and addresses of persons who qualified at the examination held on 14th July, 1959, for either the Amateur Operator's Certificate of Proficiency or the Amateur Operator's Limited Certificate of Proficiency (designated by an asterisk).

It should be noted that the list does not include the names of persons who failed to qualify for a full certificate but passed in the subjects for the limited certificate.

New South Wales
 P. B. Barry, 22 High Street, Cessnock.
 G. F. Morris, 97 Hill Street, Gosford.

- A. G. Milton, "Tabor," Pinnacle Rd., Grenfell.
 D. F. Evans, Ambulance Station, Gundagai.
 J. B. R. Maher, 43 Maitland St., West Wyalong.
 *R. J. Bleakley, 867 New Canterbury Rd., Hurli-
 stone Park.
 *W. J. Guthrie, 76 Warrimoo Ave., St. Ives.
 *A. C. Madden, 517 Pacific Highway, Killara.
 *N. A. Michie, 19 Coronation Ave., Roseville.
 *A. W. Sullivan, 45 Grantham St., Carlton.
 S. E. Handcock, 16 Tedman Parade, Sylvanla.
 D. W. Morris, Flat 2, 11 Strone Av., Wahroonga.
 P. G. Arthurs, 37 Dudley Street, Balgowlah.
 W. J. Hart (Dr.), 4/83 Muston St., Mosman.
 *D. R. Woodman, 17 Brookong Ave., Mosman.
 *W. J. Melville, 54 Travers St., Wagga Wagga.

Victoria

- C. K. Blake, Box 162, Hopetoun.
 B. S. Baulch, "Murrara," Hawkesdale.
 *J. D. Anwin, 3 May Street, Deepdene, E.8.
 *B. H. Baker, 1 Adam Street, Bentleigh.
 J. N. Bradshaw, 31 Summerhill Rd., East Preston.
 *S. E. Brewster, R.A.A.F., "Froggnall," Canter-
 bury, E.7.
 *K. F. Cody, 14 Lincoln Avenue, Oakleigh.
 *P. W. Durston, 9 Dunbar Avenue, Sunshine.
 *J. R. Edwards, 24 Oswin Street, East Kew, E.4.
 *N. L. Jenkins, E.9 Rangeview Grove, North
 Balwyn, E.9.
 *P. J. Carwardine, 28 Nepean Highway, Elstern-
 wick, E.4.
 *G. F. Scott, 22 Eastview Cres., East Bent-
 leigh, S.E.15.
 *D. R. Street, R.A.A.F., "Froggnall," Canter-
 bury, E.7.
 *R. A. Thatcher, "No-Ray-Al," Sandells Rd.,
 Tecoma.
 *K. B. Webster, 68 Mountain View Rd., Rosanna.
 *W. H. Erwin, 1 Kell's Ave., Herne Hill, Gea-
 long.
 *R. S. Hernan, 54 Lascelles Street, Coburg.
 *D. A. Stewart, 2 Lansdowne St., East Mel-
 bourne.
 *R. C. Whitaker, 58 Vincent St., Sandringham,
 S.8.
 R. M. Kidgell, 308 Waverley Rd., Mt. Waverley.
 V. H. Richardson, 70 Devon Rd., Pascoe Vale,
 W.8.

CONTEST CALENDAR

Compiled by W.I.A. Fed. Contest Com.



ROSS HULL MEMORIAL V.H.F. CONTEST:

Date: 0001 hours E.A.S.T., 1st Dec., 1959,
 to 2359 hours E.A.S.T., 31st Jan., 1960.

Rules: Elsewhere this issue.

NATIONAL FIELD DAY:

Proposed Date: 1800 hours E.A.S.T. Sat-
 urday, 13th Feb., '60, to 1800 hours
 E.A.S.T., Sunday, 14th Feb., '60.

Rules: To be published next issue.

SILENT KEY

It is with deep regret that we record the passing of:—

VK2AHL—"Pop" Lewis.



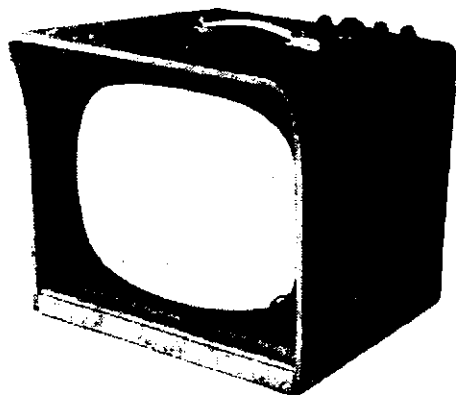
A Very Merry Xmas and a Happy New Year to all!

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 A. J. Turner, 14 Airlie Avenue, Armadale.
 H. A. McLachlan, 591 Heatherton Rd., Dandenong.
 *N. D. Bailey, R.A.A.F., "Froggnall," Canterbury, E.7.
 *P. A. Elton, 23 Wentworth Ave., Canterbury, E.7.

† Not 16 years of age till 28th April, 1960.

Queensland

- *C. C. Bunn, 66 Bell Street, Biloela.
 *R. D. Slyver, 26 Jack St., Kedron, Brisbane.
 D. B. Hughes, 60 Mayne Rd., Bowen Hills, Brisbane.

South Australia

- *W. M. Crawford, Box 147, Narracorte.
 *A. L. Goldfinch, 636 Seaview Rd., Grange.
 *A. W. Anderson, 272 Fullarton Rd., Netherby, Mitcham.
 *D. R. Shinkfield, 7 Derwent Ave., Rostrevor.
 C. J. Tatum, 24 Short Road, Elizabeth.
 M. H. Bone, 1 Dean Grove, Marryatville.
 W. R. Edwards, C/o Post Office, Alice Springs.

Western Australia

- C. T. Power, Box 377, P.O. Geraldton.
 G. W. Cattach, South Western Highway, Yarloop.
 *F. J. Lane, 72 Guildford Rd., Mt. Lawley.

Tasmania

- *J. H. Schurling, Kingston Beach.

NEW SOUTH WALES

The monthly general meeting of the N.S.W. Division was held on Friday, 23rd October, at Science House, Gloucester St., Sydney, where each fourth Friday of the month such a meeting is held, and at which we cordially invite visitors and members who may be visiting Sydney. This month the meeting was a very special affair and took the form of an "Old Timers' Night," which was very well attended by some 30 old timers and 60 members. An old timer, by the way, is one who has had his license in excess of 25 years.

The meeting was opened by the Divisional President, Dave 2EO at 7.45 p.m. who welcomed the gathering, which included visitors, ZL2AWM and VK3CX.

Dave then called Bill 2HZ, a Past Federal President, to take the chair and introduce the Old Timers. Those called on to reminisce were Wal Hannan (2AXH), one of the founders of this Division; Jack Pike (2JP), possibly one of the most active among the more elderly Amateurs; Basil Cooke; and Joe Reed (2JR), recently recovered from an illness which had curtailed his activities, and another active in the Amateur field. All speakers spoke of their activities of the past, at a time when this Division had a total membership of some 14 enthusiasts, who laid the solid foundation on which this Division of ours rests. A considerable amount of gear, some dating back to the early Twentieth Century, was displayed to the interest of the members, and the boys described the manner in which this gear was used, possibly one of the most interesting of the gear was a magnetic detector which Jack 2JP constructed in 1910.

Bill Moore then handed the chair to Lionel Swain (2CS), another Old Timer of some 30 odd years Amateur life, who produced his original permit to operate on the, then, short wave bands of some 40 metres. Lionel dealt at length with early activities in Newcastle, and as with all other speakers, spoke of the fatherly advice given to all young squirts of those days by our late friend and fellow Amateur, Charles MacLurcan (2CM), who passed on some few years ago, and whose console at this day forms the operating position at the Divisional station at 2WI. Lionel introduced others in the person of Horrie Lapthorne (2HL), Ted Barlow (2GQ), who made the first phone contact with U.S.A., Alan Gray (2LJ), and finally our old friend Lionel Todd (2LS). All spoke of the great strides made in Amateur Radio over the years, but echoed Lionel's words that we must of necessity progress in our transmission methods to enable us to operate in bands which may be reduced in size to enable us to pursue our hobby to its fullest extent.

Dave 2EO then resumed the chair and conducted the business side of the monthly meeting. Following the reading of the minutes of the previous meeting, 14 new members were admitted to the Division. The main business of the meeting was the discussion on a proposition for the Division to acquire office premises adjacent to the city which will prove to be an asset to the Division, and will provide a meeting place for all members, to enable

many of the smaller meetings to be held there and to house the library and other facilities for members. Among those who spoke on the proposition were VKs 2YB, 2AGW, 2GW, 2AGH and 2CS, who all stressed the need for such an investment by the Division. A motion was passed authorising the Council to proceed with this matter as soon as suitable premises are found.

The meeting closed at 10.30 p.m. and all adjourned for coffee and the raghow which was to be expected on such an occasion, and it was evident that many old associations and friendships were being renewed.

The Sunday broadcast on 26/10/59 was conducted by George 2CB and was commenced with an excellent relay from Lawson in the Blue Mountains on the occasion of the Blue Mountains Section Convention. Max 2OT opened the broadcast by reading from a Sydney newspaper of 23rd March, 1910, which reported a meeting of Amateurs who formed an association which later became the Institute. With this and other information in our hands, we can lay the claim to being the first Amateur organisation to be formed in the world, and one which will be 50 years of age in the coming months.

Our Divisional Convention, to be held at the home of 2WI, Quarry Road, Dural, on 30/1/60, will emphasise our 50 years of age, and will be organised as a County Fair. It will be a full day of interest for all with plenty of good prizes, excellent displays of gear for enthusiasts in v.h.f., W.I.C.E.N., s.w.l. group, s.s.b. and transistorised gear. An excellent evening show is being arranged with further interesting prizes including a treasure chest, and a non-stop form of entertainment will carry on throughout the day, commencing at 2 p.m., when the Convention will be officially opened by the Divisional President. Registration will commence at 1 p.m., bring your picnic hamper; tea, hot water, etc., will only be some of the good things on the free list. Registration will be inexpensive, so bring your wives, girl friends, kiddies and all your relations to make the day a bumper success amid pleasant surroundings.

Slow Morse transmissions are conducted by a panel of operators each night of the week on 3535 kc. at 7.30 to 8 p.m. These transmissions, under the call of 2AWI are creating a large amount of interest and are invaluable to those who are endeavouring to get their A.O.C.P. in the future. Our thanks go to the operators who are doing such a sterling service in making this scheme possible. We would like to hear from all participants and get their views on the matter and would be pleased to receive any suggestions to improve the service.

We have noticed recently that some of the many clubs in the State are not replying to the call-back to clubs following the broadcast. This is regrettable, because your scribe requires the information you could give us to include in these notes each month, and to give YOUR club that publicity which is the life blood of any new organisation. So, we do suggest that your activities be relayed to us by this means, apart from demonstrating to all listening, and many other than Amateurs do so regularly, that your clubs are virile bodies assisting Amateur Radio by providing a regular meeting place for fellows to get to know one another. This exchange of ideas and information by all to all is the most valuable feature of our hobby.

The Albury Club recently held an Open Night when members brought along their parents and friends to see the progress made in a very new club. Albury consists of a sizeable amount of young fellows who are being instructed by several older Amateurs to A.O.C.P. standard by means of the W.I.A. Correspondence Course, and although in temporary recess owing to the present school exams, is making excellent progress and will, we feel sure, produce many new calls in the near future. Practical work for these students is provided by the construction of the club's equipment.

BLUE MOUNTAINS SECTION CONVENTION

The Blue Mountains Section Convention was held at Lawson on 25th October in the lovely setting of the Olympic Pool. Despite the inclement weather, which had been experienced in the district in the previous days, the day was very fine and warm. Fifty registrations were made, including many who made the trip to the mountains from Sydney and other parts.

The Committee organised a Convention which was an unqualified success and augurs well for the future activities of the Section. A number of competitions were held during the day and the lucky prize winners were as follows:

OBITUARY

ALBERT W. ("POP") LEWIS, VK2AHL

With regret I have to record the passing of Pop Lewis, VK2AHL, on November 1, 1959, at the age of 62 years.

On the 22nd January, 1957, Pop (he was never called anything else) came on the air for the first time with an ATS-AR8 combination and I had the pleasure and honour of being his first contact. Until four months ago, he was extremely active, having many thousands of contacts on 40. I doubt if there is a VK2 on that band whom he has not worked and it was only his limited power and crystal control that prevented more contacts from afar although several times he worked ZL and VR. Unfortunately, Pop was not in good health, trouble dating back to World War I, of which he was a participant, and at times the pain he suffered was unbearable, but he took it in his stride and was soon back talking to his friends.

Four months ago Pop was warned by his Doctor to keep off the air so every day he would just listen in to the "Goon Show" of which he was a member. On 29th July he broke into the group saying he was still not the best—that was my 1,320th and last contact with him.



For many years he worked for the Metropolitan Water Board and not long after he resigned from there he unfortunately lost his eyesight due to a cataract operation. Receiving his Amateur ticket certainly gave him new life and interest and except towards the end, he had exceptional memory—in fact there were quite a few that did not know of his affliction nor the fact that he was also deaf in one ear, and suffered from arthritis.

The Buccaneer of Burraneer, as he called himself, was always willing to give a helping hand and friendly advice and as one of the official arm twisters, he plugged the I.T.U. fund every time he came on. One slogan I recall was, "Don't be a Yid, give a Qid."

Sponsored and helped by the following: 2ADB, 2FO, 2EN, 2VC, 2SG, 2ZL and 2AZE. Pop put out an excellent signal. Having met him personally on several occasions, I was struck by his quiet demeanour, excellent spirits and sense of humour. Essie, his XYL, gave him great support and encouragement and attended to his QSLing.

Pop is survived by Essie, his parents, and six children: Keith, Buck, June, Melba, Elaine and Gwen.

Vale, Pop. A gentleman and an Amateur.
 —VK2AQR.

VICTORIA

In accordance with usual custom, the December general meeting of the Victorian Division, to be held at the Radio Theatre, Royal Melbourne Technical College, on Wednesday, 2nd December, will be a social and a children's night. So bring along your XYLs and harmonics, YLs or friends, and make it a bumper evening.

NATIONAL FIELD DAY CONTEST

The Divisional Council has decided to award a perpetual trophy for competition between the zones and affiliated clubs of the Victorian Division in the N.F.D. Contest.

Each competing zone or club to enter a team in the N.F.D. must forward the claimed score, being the sum of both the c.w. and phone scores, to the Divisional Secretary by the same date as entries are due with the Contest Committee. These scores will be confirmed with the Contest Committee.

The winner will hold the trophy for a period of one year.

80 METRE TX HUNT

The Victorian Division's 80 m Tx Hunt was held on 24th October, and gave the hunters, and indeed the visitors who proceeded to the site with the aid of maps, a good run for their money. The site chosen by Bob 30J, just off Waverley Road, and just to the east of the new Mount View Reservoir, with a glorious outlook to the Dandenongs, was 16 miles air-line from the starting point at the north end of Swanston Street, and about 20 miles by road, and it took the winner, Tom 3AOG, just 55 minutes to find the tx. Laurie 3ALY was only a couple of minutes behind Tom.

The "invisible" aerial was supported right over the access road on overhanging tree branches and the off-centre feeder run to the tx which was hidden in a clump of grass in an adjoining paddock.

The hunt was not altogether free of incidents. Peter Reid had power supply trouble before he got started and had to open his envelope. Then, just after the tx had been found, the battery began to fail, resulting in the signal weakening and the keying wheel slowing almost to a stop. Another battery was hastily substituted and the hunters still to arrive were able to follow the signal in without further trouble.

Last to arrive was Publications Committeeman, 3OM, whose QTH happened to be within 100 yards of the hidden tx, and who was having some trouble from a harmonic from it, so decided to join in the search.

In the ragchew after the hunt, another marathon hunt was suggested and found to be much favoured. The last marathon, put on two years ago by the Geelong boys, was greatly enjoyed, and the Melbourne hunters would like to stage another early in the new year, in appreciation. We hope that the Geelong boys and all who possibly can will join in. Details will be announced later.

In the meantime, the next hunt, the last for this year, will be held on 6th December, when Tom 3AOG will be hiding the tx.—30J.

NORTH EASTERN ZONE

Seems like the boys around here have the line-up bug with Sid 3CI lining up his xtal filter on his rx; Bruce 3AGG taking response curves of the i.f.s. in his rx, and Peter 3AFP building a xtal filter for s.s.b. in the 5 Mc. band. Now I can tell you that this really works, having had a demonstration, so anybody interested in building a s.s.b. exciter should contact Peter. Seems like we have a new member in the zone with Alec 3FG at Wangaratta. Now Alec, I hope you attended the Convention so we could welcome you personally.

Seems like our old friend, Doug 3IJ is gal-avanting around again, this time he is up at Darwin, but at present I cannot tell you what call sign he will be operating under.

I have an ardent reader of the notes in VK4 land who still likes to know what is going on in the zone. However, I can tell you Les does not like being mistaken for a W4. Serves you right, Les, for answering a DX call. Must admit it was a very pleasant QSO.

Alec 3AT has just completed building a stereophonic radiogram; XYL out ordering recordings for same, haven't heard if the results are good or bad.

Bruce 3BM (Quambatook) and Ken 3KR visited Bruce 3AGG, who has acquired wood working tools to do odd jobs around the place. Bruce has just finished leave and is back at work again.

Lots of talk about getting on the air from the Z calls, but up to date very little action. Did you know, fellers, that there are stalwarts of six mx around in 3CI and 3AFP with 3AGG

Several birthdays were celebrated in Oct: Ivan 2ADM, George 2ADZ and Bill 2ZL suddenly found that they were one year older. Ivan was up for the "do" and visited the shacks of 2ZL and 2AQR. Also at 2ZL were 2AXH, 2AEY and, of course, the conductors of 2WI broadcast used Bill's AT5 to scatter the doings of the Dinner and Field Way. Whilst on that subject, I forgot to mention that Anthony Mullens was runner-up to Secretary Gordon in the complicated Quiz at the Dinner.

Those who know Harold 2AWH will be interested that he leaves Melbourne for the Antarctic on December 3. Sunspot activity and stormy conditions have made conditions quite bad on 40 these days, so news are scarce. Depressing news has just been received of the passing of Pop 2AHL, and I hope to have the honour of writing an Obituary in this issue.

Don't forget the next meeting at Tighes Hill on December 11 at 8 p.m., and to those who will not be able to make it I extend the Season's Greetings.—2AQR.

CENTRAL COAST ZONE

The weekly net continues every Monday at 8.30 p.m. on 3635 Kc. On some nights as many as ten stations have joined in. It is usually conducted by Reg. 2AI, operating under the Gosford Radio Club call 2AFY. Reg is away at times on business which takes him to the Riverina and VK3. His job is helping to decide which nag comes first.

The recent visit to Channel 2, ABN, through the kindness of 2AGS, was an eye-opener in more ways than one. We saw two live shows being produced and were amazed by the preparation and planning and the activities behind the scenes. The technical gear seen was quite remarkable.

Jack 2FJ is very active on 80 mx phone. He lives in the wilds of Saratoga. Fred 2ALA is troubled by t.v.i. and has nearly finished his fourth re-build in six months. Rex 2YA arranged the recent Gosford Radio Club's exhibit at the Gosford High School Science Exhibition. Unfortunately, severe QRN prevented a link-up between pupils of Gosford and Inverell and Coffs Harbour High Schools. 2ADT, 2GR and 2KS were heard, but QRP this end did not win through.

2AJY misses his 20 mx quad, recently blown down in the gale. 2AXH still heard on 80 mx phone and sounds as fit as ever. Major 2RU is re-modelling his shack and building a more compact tx. George 2ZDC, from Wyong, is reported to have gone West and finished up in VK6. 2ASA not heard lately, due to holidays and too much t.v. business. 2ND active on 40 mx phone; uses a Command tx with plate mod. Harry 2LX active on 20 and 10 mx phone.

Associates Ken Harriman and Frank Jarvis out on their farms have a private 600 ohm line erected specially for Morse code practice. I believe this extends for a mile through the orange orchards. A.O.C.P. aspirants continue to come forward. Six members sat for the last exam and we wish them well.

2ON, your scribe, has recovered from a bout of t.v.i. The magic touch was provided by a high-pass filter installed on the neighbour's new set. The distance between the antennae was 28 feet. One interesting observation was that an earlier model t.v. showed perfect rejection of 80 mx signals, whereas the new model did not. S.s.b. activity on 80 and 40 mx continues.

Greetings

TO WISH ALL READERS AND FELLOW SCRIBES

the following:—

- Good Health to You and Yours,
- Happiness for ditto.
- Good Fortune ditto ditto.

If you have (a) and (b), (c) is a pushover.

★ ★
FOR 1960 — — A TOAST

"Here's to double spacing and wider margins on all your copy, and be early or else . . ."

Sub-Editors Mk. I., II., III., and IV.

Hidden Transmitter Hunt, Bob 20A, 1st; G. Nixon-Smith 2AGN, and N. Wilde 2DR, dead-headed for 2nd place.

Blindfold Tx Hunt: 2AGM, 1st; Ladies' Blindfold Tx Hunt: Mrs. 2HZ, and the junior division of the hunt was won by Lesley, daughter of 2ZCZ.

7 Mc. Scramble: Jim 2PM, 26 contacts, 1st; 2AWZ, 26 contacts, 2nd.

144 Mc. Scramble: 2AWZ, 1st; 2ZBX, 2nd. Visitor travelling longest distance: 1ZCA.

CQ DE EMERGENCY

Cyclonic disturbances have been prevalent in the State during the last few weeks, and on one such occasion on 30/10/59, the cyclone raged over a large part of N.S.W. and severe flooding and damage was sustained in many areas. Possibly the hardest hit was the South Coast and communications failed between Bega and Sydney.

Contact was made with Sydney by 2AYW from Bega, with the assistance of 2ACP and 2ANB in the morning and later 2ASF came on and provided a link with the city.

The N.S.W. Divisional Emergency Station 2WI at Dural was opened before noon and was manned by 2MP, 2EO and 2AGS, who maintained communication with all areas until the emergency had subsided at 5.30 p.m.

The value of such an Emergency Network as W.I.C.E.N. must be evident to all and with the forecasts which we are receiving of possible further such weather ahead of us in November, we strongly urge all to take their part in the W.I.C.E.N. exercises which are conducted from 2WI. The Scouts' motto of "Be Prepared" is one we should all follow at all times as we never know when our services will be needed. In case of emergency, first make contact with a Sydney station who will then be able to ring the W.I.C.E.N. Co-ordinator at YL 9465 and steps will be taken immediately to establish communications from 2WI.

The latest activities of W.I.C.E.N. are broadcast in the Sunday broadcast and we ask that Bob and his assistant, Max 2MP, be given the support which they deserve in their task of organising an efficient Emergency Network in this State.

HUNTER BRANCH

The usual monthly meeting of your Branch was held on 9th October when the following lads attended an informal meeting: 2SF, 2XT, 2ZDF, 2ZDL, 2ZMG, 2AFA, 2AKK, 2AOR, 2AQR, and associates Sutherland, Bailey, Gray, Fyfe and Stobbs. Apologies were received from 2CS, 2ZL and 2XQ. The chair was taken by V.P. Bob as President Lionel was attending a farewell to his predecessor. A little business was soon taken care of and an appreciation of the excellent work done by Secretary Gordon in arranging the Annual Dinner and Blackalls Field Day. Stuart gave a short discourse on his activities, whilst in VK3, on u.h.f.; opportunity was also taken to wish Bill 2XT all the best to himself, XYL and harmonic on his two months trip overseas.

The meeting then adjourned to another room where several films were projected by Keith 2AKK, as operator. Quite an interesting show, despite the fact that the film broke several times and a lamp gave up its ghost.

The final meeting for the year will be something similar to last year when there will be coffee and eats.

to back them up when he isn't on shift work, so you should not be short of a contact locally for check purposes or for a rag chew.

Well fellers, this is to be my last episode; time does not allow me to do the job that I would like to. I will take this opportunity to thank those that wrote to me with little bits and pieces, also those who subscribed verbally whether consciously or unconsciously to the notes. To the Editor (I still write antennas while he prints antennae), I say thank you for being lenient with the blue pencil. To one and all, I wish you a MERRY XMAS which will be only three weeks away when you read this. Best 73, Keith 3JC.

SOUTH WESTERN ZONE CONVENTION

The zone has been very active this month with a very well attended Convention, held in Warrnambool on 31st October and 1st November. The first Ham to arrive was Neville 3ACN from Bendigo, and from 3 p.m. onwards on Saturday, members arrived at the QTH of Bill Wines and received a cup of tea, etc., after which all received hotel bookings. Most of the cars were mobile and were called in by Ted JFS and Bill, also John 3HW of Ballarat helped us to contact the mobiles; many thanks John. John 3ARJ and Bill 3XE also assisted.

The Dinner was held at Eckers Hotel and 3ABT proposed the toast to the W.I.A. after which the Mayor of Warrnambool, Cr. P. O'Sullivan, officially opened the Convention and spoke on radio and how the Amateur experiments over the years had helped to bring radio and t.v. to today's standards. Bob 3ML replied to the Mayor and explained the functions of the W.I.A. and benefits of membership and enjoyment of Amateur Radio as a hobby. Bill 3XE proposed a toast to the South West Zone, after which Jim 3ABT responded and welcomed visitors from VK2, VK3 and VK5, and called on the Convention organiser, Bill Wines to respond.

The general meeting took place and many items were discussed, the main discussion being in connection with emergency. 3ABT was elected equipment officer to ascertain who could come on in an emergency, so chaps please let Jim have a note of your equipment that is able to be operated by batteries and can be mobile if required, also frequency of crystals and v.f.o. controlled.

The fox hunt, which was to take place after the meeting, was cancelled as 3ACN brought some beautiful films of W land. After these films, JFS showed some very nice transparencies of vintage cars. We adjourned for supper when the QRN was terrific as you can imagine.

On Sunday morning, the tx hunt took place on 80 mx, the tx being hidden by 3NA, 3PS, and 3EQ. The tx was not found as 3NA's car pointed out the excellent location and they certainly buried it deep.

Harry 3HF conducted a few of the boys through the local b.c. station, also showed them his radio controlled gate at his QTH.

During Sunday afternoon, the second tx hunt took place. It was located under the wharf by Bill 3XE. He was awarded the barometer and thermometer perpetual trophy donated to the zone by the Geelong Amateur Radio Club.

The Scramble took place in a Warrnambool park and was won by Gordon 3AGV of Colac, who contacted seven stations; second place went to Bill 3XE, and Bill 3AWB was third.

This brought the active side of the Convention to a close and all returned to Bill Wines' QTH where his wife Lesley, Mrs. Olive Russell and Mrs. Dorothy Moffatt prepared afternoon tea for which we thank them.

George 3AOM and his XYL also made the trip and camped overnight at the foreshore. We also contacted his son, Ray 2ANB, at St. Ives, N.S.W., also Ron 3OM, who has a very f.b. signal.

WESTERN ZONE

We were pleased to welcome members together with their XYLS and harmonics in Stawell last month. The occasion was the State Convention which we had the pleasure of holding in our zone. Certainly hope that everybody enjoyed their week-end in the Gramplains area.

Our Zone Convention was also held during this week-end. All office-bearers were re-elected, namely: President: Herb 3NN; Vice-Presidents: Gordon 3GW and Bert 3EF; Secretary and Treasurer: Bill 3AKW.

Merv. 3AFO, of Horsham, seems to have been one of our busiest members recently. He has built a new shack and has already begun to operate from it. Herb 3NN, of Yanac, together with help of son Garry, has recently completed job of re-building and placing transmitters in rack and panel lay-out. Max, Herb's other boy, seems to be more interested in

mechanics than radio; he has completed building his own motor car, it is built to midget motor car specifications.

Chas VR1B, of the Gilbert Islands, seems to be enjoying life up there. Hope to be able to work you next year Chas when I have a higher powered tx operating.

MOORABBIN AND DISTRICT RADIO CLUB

At the general meeting held in our rooms on Friday, 16th Oct., it was decided to re-introduce in the near future tx hunts on 80 mx. Ed JEM accepted the responsibility of tutoring members on suitable gear and also the construction of loops, and I should be able to inform you of our projected movements in the next issue.

The White Elephant night on Friday evening, 6th Nov., was quite a success, much gear changing hands and with a little monetary assistance to the club. A Type 122 and a Type 11 were passed in.

The Annual Picnic is to be held at Toora-wong Reservoir near Whittlesea on 13th Dec., and a good time is expected both by members, XYLS and harmonics.

It has been decided to put a party into the field in February to compete in the National Field Day, using our club call sign, 3APC. This will be organised on a three-band basis, and we expect to score well, so clubs and zones, look out for that perpetual trophy. We may snaffle it!

QUEENSLAND

BRISBANE AND DISTRICT

OK, so I goofed about t.v.i. last month, but the h.f. boys are not being troubled by gun toting neighbours who are making like Maverick or Wyatt Eyrp for having their "one-eyed monsters" fouled up. But the v.h.f. gang are! Whatever type of t.v.i. is causing the 144 Mc. boys to play havoc with Channel 9, has me tricked, but I do know that the T.v.i. Committee will do their darndest to clear things up. So I suggest you contact "Tibby" Scholtz, 4HR, who lives at the smarter end of Morningside, 95 Stephens Street. What say, Tib?

Talking about v.h.f., it looks as though two is being populated again in between JA breakthroughs on six. Noticed a nice two mx yagi above the six mx one at the QTH of Tom 4ZBH. With the population on the v.h.f.'s and absence of stations on the h.f.'s, it looks as if it will be one of the Limited boys who makes the first W.A.B.S. (Worked All Brisbane Suburbs).

On the subject of beams, it costs at least £20 to have a t.v. antenna erected, but Harry 4HA found a wonderful substitute. He had been using "Rabbit Ears" and just for the fun of it, he connected his 20 mx quad onto the picture maker, turned the quad towards the

summit and found that it worked wonderfully. Want to hear something funny? His son has an indoor antenna on his t.v. rx and a t.v. antenna salesman urged him to buy an outdoor multi-element array because "an indoor antenna weakened the rx!"

One landmark in Lamington Avenue, just two hoots and a holler from Brisbane Airport, has disappeared. Tom 4TT had a quad in his backyard; now he has a t.v. antenna on the front of his house and no quad. I'll bet the quad or some other beam goes up when the novelty dies off and the eye-strain starts.

It looks as if Del 4RJ will be on the air a lot more in the near future. Del is retiring soon after a lifetime as a Methodist Minister. Isn't Ham Radio a funny hobby? I've had many an enjoyable QSO with Del when he was in Warwick and Brisbane from QTHs as far apart as Brisbane and Guam, but have never met him personally. Last week I saw a photograph of him, taken by a friend of mine for a Parish magazine and had to be told who it was.

Frank 4ZM was quite concerned about complaints that he didn't take the 20 mx hook-up every Sunday. He has a "week-ender" up at Tewantin and is a very enthusiastic angler; in fact he had a strange idea that he was going to make a thousand pounds a few weeks ago by landing "Tim-the-Bream." He asked me to say that if he had more than three or four regulars he would be able to understand the complaints. Fair go, boys, everyone needs an occasional week-end off, especially when they are taking the bait up at Tewantin.

As is usually the case, the fourth Friday of December falls during the Christmas break and there won't be any December general meeting, the next being on the fourth Friday of January 1960. Talking about dates, an anniversary a couple of months ago went unremembered. On Saturday, 2nd September, twenty years ago, a lot of the boys received a telegram telling them to stay off the air because there was likely to be a war. It came the next day, 3rd September, 1939; remember?

Well, gentlemen, I'll have to cut it short, but hope to have more gossip after the Christmas holiday period. This is as good a time as any to wish all our members, their families, my fellow scribes in the other Divisions, and our Editorial and printing pals in Melbourne, a very Merry Christmas and a Happy and Prosperous New Year.

See you in 1960.—APR.

SOUTH AUSTRALIA

The monthly general meeting of the VK5 Division was held to a capacity house in the clubrooms at 17 Waymouth Street, and took the form of a buy and sell night which, due to the laws in that State, is only another way of saying that an auction night was held. We in VK5 are extremely fortunate in having such a handsome, athletic, efficient, brainy, and romantic looking auctioneer, and when I stepped up on to the auctioneering table after being introduced by my partner in crime, Norm Colman, the tumultuous and hysterical applause and acclaim just had to be heard to be believed. When order had been restored, when the old tomatoes and broken eggshells had been swept up, when some kind person had assisted to remove the debris from my clothes, then and only then did the auction begin. You cannot but note that no reference has been made to anything that happened before the auction for the simple reason that nothing of any note happened. The meeting was opened by the chief of the Wombi-Wombi tribe, I beg your pardon, the chairman of the Divisional meeting, Brian 5CA, and despite his moving appeal for general business, nobody was having any, and after new members, State correspondence, Federal correspondence, W.I.C.E.N. notes, and one or two other matters of minor importance, the business part of the meeting was closed and the distribution of cards preceded the smoko.

A ballot was conducted for the disposal gear and those who were successful have no doubt been advised by now. The amount of gear for sale was not up to previous nights, but due to the enthusiasm of the bidders, the repartee between the bidders and the auctioneer, and other sundry interruptions, the meeting closed at 11 p.m., although Gordon 5XU threw the last of the audience out at 11.30 p.m. The meeting naturally was carried on officially and unofficially on the footpath for some time, although I could not but note that Leith 5LG practically ignored the fire hydrant, only occasionally giving it a look of disdain as he talked. The fire hydrant, probably re-

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membering their last argument regarding the merits of c.w. and phone, gave him look for look, with Leith finishing up slightly redder in the face than the hydrant.

Talking to the President of the VK5 Division, Brian 5CA, whom you will remember has just returned from his annual inspection and examination of the smoke signalers' club of the Wombi-Wombi tribe in the far, far, North, he told me that he was not feeling his best whilst away and was glad when he could come back to our fair city. The chief of the Wombi-Wombi tribe, when interviewed by the VK5 Divisional scribe, said in tones more of sorrow than in anger, "Big city chief, him no good, him weak in stomach, him no like witchety grubs, him plurry washout!"

Noticed Jack 5JS in the audience at the meeting and appeared to be enjoying himself. Active these days on 288 Mc., he is still his cheery and voluble self, and as I left the meeting he was entertaining a large group of the younger members with tales of the "good old days," and believe me there is no one in VK5 who knows more of those days than he does, but look out for him, he is the biggest leg-puller this side of the black stump.

There is no doubt about it, it is either a feast or a famine. Two months silence from the S.E. gang, and then Claude 5CH arrives, Col 5CJ sends me a letter, and to top it all, Stuart 5MS comes along to the meeting. Information obtained from them all should keep the wolf away from the door for this month at least, to say nothing of keeping my palsy-walsy the editor happy. He was getting quite worried because I was writing almost nothing each month. Put that red pencil down at once, Sir!

Claude 5CH is due for annual holidays as soon as he returns to the Mount from the big city, so possibly he will be heard on 40 at odd times during the day. He has a big constructional programme on for the shack at the moment, so possibly he will concentrate on that instead.

Tom 5TW is back on 40 with telephony after quite a break and seems to be getting quite a kick out of his many contacts. Will be looking for you OM. Stuart 5MS has his new tx on the air and is quite satisfied with results. Bandswitched 80-10, with a Geloso exciter, it finishes up with an 813 and has plenty of wallop.

Leo 5GJ is still getting among the W signals on 20 telephony and seems to have no trouble in contacting them whenever he wants to. Erg 5KU is another one who is getting his share of contacts on 40 and 20 c.w., in fact it could be said that he is getting more than his share, every time I call on the band they all seem to go back to Erg. Dave 5AW, who is located at Penola, has a xtal controlled rx and tx on 288 Mc., and has also been heard on 40 and 80. He has built a one-eyed monster but apparently this has not interfered with his Amateur activity. Don 5ZBG has still to make his appearance on the air, but if rumour is to be believed, it will not be long now.

Back in what has come to be known as the "good old days," when c.w. was a lot more popular than it is today, there used to be a type of pest who rather fancied himself as an expert on the key, and no matter with whom he would be in contact, he would tear along at about 60 w.p.m., even though it was painfully obvious that the chap at the other end was not able to follow him. Now that s.s.b., d.s.b., r.s.v.p., s.w.l.k., to say nothing of several unprintable other forms of transmissions, are rapidly coming to the fore, a new type of pest has arrived. To wit, the chap who will persist in coming back on s.s.b., d.s.b., etc., even though the other end has indicated quite clearly that he is in difficulties. The c.w. pest eventually died out when he found that contacts became harder and harder to get, so I suppose time will take care of this new problem.

Frank 5MZ was noticed at the general meeting and looked fighting fit. He was not too well a little while ago, but seems to have shaken it off now. He tells me that he is taking it easy these days with a little radio and a little t.v. Hope it remains that way OM, don't make it a no radio but lots of t.v. policy, your cheery voice would be missed.

By a strange co-incidence I was listening on 21 Mc. the other day and by another strange co-incidence I heard Athol 5LQ and Lionel 5LB in contact. By another strange co-incidence they were sitting together at the meeting, in fact it would be a strange co-incidence if these two Radio twins were ever seen apart.

Luke 5LL is on the air with a brand new tx, a pair of 6146's in the final too, and he is

tickled pink with the results. Had a little bit of trouble at first with some missing drive, but when he put on his Sherlock Holmes deer-stalker cap and took out his outside magnifying glass, it was only a matter of time.

The news from Crystal Brook this month is rather ominous. Bert 5BB is being attacked with the t.v. fever. Pete 5FM is playing with t.v. sets, and the worst news of all is to the effect that Bob 5BG is busy constructing t.v. aerials by the dozens. The Crystal Brook bird world has voted him as their number one friend due to the number of perches he is providing.

Talking to Al 5MF at the meeting and he said that he was active on 288 Mc. with the idea of giving his harmonics a chance of seeing just what makes Amateur Radio tick. From all reports they are very much interested and look like being recruits to the grand old hobby.

Bernie 5WC, who is the prime mover in any activity from the Woomera Radio Club is now on s.s.b., or as Comps 5EF has been heard to say, "Graduated to the ranks of the men in radio." My retort is of course unprintable.

Did not see Tom 5TL whilst he was down in the big city recently, this is not surprising I suppose, when you consider that he was down on "Departmental business." That always intrigues me, makes me think of MIB, disguises, heavily cloaked strangers and plenty of hush-hush, to say nothing of furtive looks and all that goes with espionage. To keep the record clean, I happen to know that he was down on an office management course, so if any reader is seeking an efficient office manager they will know to keep away from Tom.

Fred 5MA has been decidedly busy this month, but not with radio, no sir, busy with the rotary hoe. My spies tell me that he has been handing out some very nice mulberries to various people, and it has been suggested that I would have liked to participate in the said handout. I deny this, because I always have trouble with mulberries, they fly to my stomach! Hughie 5BC has of course been on holidays and has not yet settled down to the daily grind. He really should not be in these notes because he is better known as a v.h.f. man, however, I sometimes hear him on 40, in fact I once worked him on that band, and that fact lets him sneak in.

Harry 5KW is among the missing this month, but if I remember anything about him he is

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PAPUA-NEW GUINEA

The Council of this Division suddenly came to the conclusion that not every one in the Territory had left because of taxation and that there were still a few Hams left outside of Moresby that would like to hear of our doings. The writer has taken the job on for a trial, but hopes to see it through regularly, if at all possible.

There is a new burst of quad fever throughout of late and the two Moresby types most inflicted are Doug 9SB and John 9JR. Doug has his up on a 30 ft. tower now and except for some final checks, it has really put him back in the DX field. So much so, that on a few of his backyard contacts on 15 with Robbie 9RO, there are frequently a stack of Europeans trying to break in. John is awaiting a tower to sit his on, but a working bee has been organised and that problem will be no excuse for any lack of activity from this Moresby kilowatt. Yes, John really has that much power and has a set of spare 15 amp. fuses handy every time he sets the rig up these days. John seems the latest victim of power transients over this way, with the recent loss of his main power tranny that had so many windings it took four new ones to do the same job.

An earlier burst of quad activity appears to have hit Rabaul of recent years as there are four in the air over there and all look very neat. Ian 9VM takes the prize with his rotating pole-mounted quad.

The latest run of DX contests has come and gone. The static level during the phone section of the VK/ZL Contest was no fun and together with poor conditions generally, the showing from all States was disappointing. The c.w. section provided some good contacts though. Geoff 9GW, at Samarai, was a silent competitor and I didn't even know he was in it until he told me on the phone next day. Geoff, by the way, has a house near the top of the hill at Samarai so should really get out.

Two local members have been on leave but should be troppo again by time this is in print—Doug 9DT and Les 9HL. Les was supposed to be mobile while he was down South, but guess he spent so much time watching t.v. that he forgot he had the rig in the car. Norm 9NT and Bob Murphy were in Sydney together a month or two back and from what my spies tell me, the Sydney boys were glad to see the last of them!

This Division has been fortunate in getting on to some disposals gear at good prices lately. There is no sign of anything coming up again for a while, but if any boys at the out-stations are interested in any particular gear, then please drop line to the Secretary and we will keep an eye open for anything that might be worth while. I came home loaded with a SCR522 tonight complete except for two 832 tubes for a quid, so you can see what we sometimes get on to.

Jim 9AS, at Wewak, has been making lovely modulation on 14 Mc. with his new DX100. It appears the Heathkit way is really the shot as it seemed to work first try. Other recent importations have found their way to Goroka with Bob 9AA now sporting an SX100. Bob 9RM has set up gear at Goroka also now and puts a nice phone signal into this area.

Was in Kavieng a couple of months ago and saw the Viking II. and SX99 at 9CF. Carl 9YT has recently gone across to New Ireland from Manus and happened to be at the local Mission when I dropped in and the three of us had a real number one ragchew. Another of the local Hams, 9TK, is also a Missionary on New Ireland, but although I went for a round tour of the island, I missed seeing this new VK9.

Never seem to hear much of the Lae crew these days. Heard George 9GV hob up for a few contacts in the Remembrance Day Contest, but except for a word with Howard 9VG and Noel 9NM on the inter-island trunk circuit during business hours, I really don't know what a Laetonian sounds like.

Bob Sutherland gone walkabout for a while up Puri way. This time carrying a theodolite around instead of a walkie-talkie. Reg 9SP disappeared in the Moresby dust as haven't even heard him from Badili lately. By the way, if you wanderers ever get to Moresby on the last Wednesday of the month, look the gang up at the Boroko R.S.L. Club Rooms as that is where we hold the meetings these days.

As the time limit to get this to Melbourne for publication is close and as yet our Honorable President, VK9 Sweet Brandy, has to find time to correct my spelling errors, I must not make this too long. If you good members at the places away from Moresby can dig up some local Ham gossip and feed it into me at PNT or to the Secretary, we may be able to make something out of this column. In the meantime, the Moresby boys send our Season's Greetings to all other VK9s and Hams generally.—73 9RO.

of course co-incidental. To this day he always refers to me as the seeker of information on harmonic radiation, which only goes to prove that R.I.'s are human beings after all. If he knew how many sleeping pills I took that night before I went off, he would be more amused than he was.

Well, here we are again, December and all that it means. As I write this of course it is only October, and it is hard to enthuse about something that is a couple of months away. However, the VK9 gang wish all the rest of VK the compliments of the season, we wish you all that you wish yourself, and we all hope that you will all have an enjoyable XMAS and a Happy New Year. Incidentally, I am fighting a losing battle with my grandson in trying to convince him that Father Xmas will be a bit light on in the pocket this year. He has already presented me with five lists of what he wants for XMAS, and each one bigger than the last!! I am going to tell him that Father Xmas left him a pony, and I will be able to prove it, too!!!!

TASMANIA

Congratulations to Bob 7AF on being the first of our members to go in for a swim this season. Next time, Bob, take off your clothes before stepping off your launch to miss the attending dinghy, hi!

On the week-end of 24th-25th October, southern members participated in the Jamboree of the Air. 7KA, 7JB and 7RX were invited from time to time over those two days by Scouts from the 13th Hobart Troop, and all three chaps did a wonderful job in giving the lads a lively introduction to Amateur Radio. The respective XYLs certainly deserve a mention, not only for allowing their respective husbands off from the usual duties, but also for allowing their homes to be invaded. Bob 7AF also deserves a mention for loaning his 122 set as the means of maintaining communication between the Scout headquarters and the three mentioned above. Although contact with the Jamboree station VE3JAM in Canada was not established, many Amateurs in various parts of the world entered wholeheartedly into the venture, despite the fact that the phone section of the "CQ" Contest clashed, and we in Tasmania warmly thank them for helping us.

The v.h.f. boys have been busily preparing the rules for the conduct of an intra-State v.h.f. Contest for 50 Mc. and above, which they hope to hold over two week-ends in either February or March of each year. I hope to have the rules for publication in a future issue. Although Interstate contacts will not assist the points score, yet these chaps will be looking for any mainland v.h.f. boys at the same time.

Since the last notes, two Contests have come and gone, namely the c.w. section of the VK/ZL Contest, and the phone section of the "CQ" Contest. All bands played their part in both contests. Jack 7JB made 273 contacts in the c.w. VK/ZL Contest, and Ken 7KA had about 180 contacts, both fine efforts. During the phone "CQ" Contest, I overheard W8BHW complain that few stations from VK enter the phone contests. This complaint rings rather strange to me as an ardent c.w. man, as I find very few VK stations to work on c.w. on any band at any time, and yet there are always phone stations nattering away on those same bands.

Look for our Divisional Treasurer, Snowy 7CH, on the lower frequency bands over the public holidays and long week-ends during the summer. Snowy will probably be mobile marine on the yacht Moorina and looking for contacts on either phone or c.w.

Alec 7AX continues to be in ill health. We wish you a speedy recovery Alec. Jack 7JB is now employed by a very well known wholesale electrical company, and together with Ted 7EJ from the same establishment, he is studying the mysteries of t.v. receivers from the viewpoint of servicing. Consequently, both chaps have very little time on the air, as school is three nights a week, and the rest of the evenings are spent on homework.

The excellent address by Joe 7BJ on t.v. receivers at the November meeting in the South was taped for the benefit of the other zones. Len 7LJ also made slides, and Len 7LE produced an excellent block diagram of the receiver under scrutiny. We ordinary beings are now much wiser about these infernal machines, if only to the extent not to play around without sufficient test equipment.

George 7GC is back on the air after the whirlwind business trip abroad through Europe and America. It would be very nice to have an address from you taped George for playing at one of the meetings in the South. How about it, OM?

probably up to his neck in some new project which will be released to the waiting world in due course. Harold 8ZAB is another member of the missing brigade from the Upper Murray gang. However, my spy is hot on his trail and news should arrive any time.

Saw a chap this week that I had almost forgotten as a Radio Amateur. None other than Cliff 5CX. He is at present very busily engaged at ABS2, which is due on the air early in the new year, and among other worries and troubles, he has to cope with the fact that Neil 5ZAW is his brother-in-law. I was told to put that in the notes, Neil. Guess by whom?

Bob 5AP is now back at Fort Augusta and is happy in his work at the local broadcasting station, the name of which my pride will not permit me to mention. Bob has been with the Commonwealth Railways and the State Railways, and is now in the hardest working industry of them all, ahem!

Every time one hears of Victor Harbour one automatically thinks of Pat 5KM and his offender, Ron 5KN. Pat is fairly active on the bands and Ron is mostly inactive, but let anything resembling an emergency happen in that area, then this pair are definitely active. Their work in this field over the past few years has done quite a lot to keep the name of Amateur Radio before the public.

Heard Bill 5HR in contact with Les 5LC on 40 the other Sunday morning and a visitor to Bill's shack was Arch 5XK from Lucindale. They offered Les 64 dollars if he could recognise Arch on the mike. Les battled with the problem for a couple of overs, and then went out and walked on some hot coals or lay down on a bed of nails or something, because in true Yogi fashion he came out with the name, quick as a flash, well almost. Arch refused to pay the 64 dollars because he said someone had rung Les up on the telephone and told him, finally accusing me! How low can one get?

Wally 5DF is busy beam building and is completely surrounded in G4ZU theory and diagrams. The tower is up and it looks as if before long we in the big smoke will have to be putting fuses in our aerials whenever he points his beam East. John 5JM, who is a newcomer to the lower frequencies, having had a Z call for some time, is getting things together for an onslaught on 80-40-20 etc., and he will be assured of a welcome to these ranks.

Pat 5LT is of course to be heard on 14 Mc. and 14 Mc. only. It would be considered heresy to suggest that he be heard on any other band and considering his results, I don't blame him. George 5EC is occasionally heard on 40, mostly in contact with Gordon 5XU, but his commercial interests keep him fairly busy and away from Amateur Radio.

Eugene 5XV was active from Ceduna on 7 Mc. whilst he was over there relieving at D.C.A. I heard him in contact with 5W from Hawker, too. Graeme 5XW and Col 5XY are at the moment of writing swotting flat out for their coming Uni. exams. We wish them both luck. Dave 5BF has not been heard to say extent lately, but as he is busy with local E.F.S. work it is not to be wondered at. He has been heard on 80 with Don 5DX on 80 at times, right in the middle of the Black Forest. Fairly gives one the creeps doesn't it. The BBBBlack FFFForest.

One of the privileges of being old is that one can reveal now and then the inner story of some happening in the secure knowledge that few are left to doubt it. In view of the fact that I am now rising 95, a fact evidently supported by the editor, bless him, and also in view of the fact that Johnny ex-5KO (and about to be 5KO again) is now no longer an R.I., I can now tell the promised story of how I once pulled the lion's tail and lived to marvel at the reaction. Johnny was not only a VK9 R.I., but was at times chairman of the Amateur Advisory Committee, and at the same time a keen and active Amateur, noted for his experimenting. I was a member of the committee and you can imagine my horror when one night I switched on the receiver and there was 5KO with thousands of signals, 10 kc. apart, from the top to the bottom of the spectrum. Now I ask you, lives there a man with brains so few, that he would ring up the Chairman and tell him that his signal had shot through? Yes, there does live such a man, stupid me. Did I ring up and give him the truth, did I? No, I did not, I attacked the situation with guile and craftiness. When he answered the telephone, after an exchange of pleasantries, I said in a voice dripping with honey, "I am not ringing to complain, but just to find out how you have managed to get so many signals out of one single transmitter." This rocked him so much that he gave me a short lecture on harmonic production, and then excused himself on the plea of urgent business. The fact that the signal, plus all the harmonics, disappeared at the same time was

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