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EDITORIAL



N.Z.A.R.T. CALL SIGN BOOK, 1954

We have just received our copy of the New Zealand Association of Radio Transmitters' "Break-In" Call Book, 1954, issue, and wish to record our appreciation of this very fine effort by the Editorial Committee of the N.Z.A.R.T.

To many readers, this publication will be just another very useful aid to Amateurs in pursuit of overseas contacts, but to those who have shared the hard work of producing the Australian Call Book, such an effort is fully appreciated and merits our congratulations to those concerned.

No doubt the Editorial Committee and other officers of the Association will confirm that the risks involved and the effort expended, was well worth while, if the Call Book proves of assistance to their fellow Amateurs in New Zealand and overseas.

In addition to a comprehensive list of N.Z. calls, covering the various districts of New Zealand, the book lists the names and addresses of non-transmitting members and also gives several useful operating hints. A list of DX C.C. countries is included and also a country prefix list, together with many interesting details of contest awards—overseas awards, etc.

Useful details of Standard Frequency Transmissions from WWV and also local Amateur Frequency Transmissions are given and also information is supplied on the working of the QSL Bureau, Amateur Frequency Allocations, Emergency Corps, Official Broadcasts, Official Observer Station Service, and Branch Secretaries' names and addresses.

The Wireless Institute of Australia has arranged to handle the sale and distribution of this Call Book and commends it to all Australian Amateurs as a valuable addition to their libraries.

It seems pertinent to us that our readers should be reminded that here again we have another instance of what can be done by a live association of Amateurs, who have concentrated their efforts through the N.Z.A.R.T. in the production of this splendid issue.

We believe that the Amateur in all countries is best served by the establishment of societies controlled by individual franchise, the fruits of whose efforts are generally seen in an improvement of Amateur Radio facilities and operating conditions such as we have outlined in this latest evidence of progress.

FEDERAL EXECUTIVE.

THE CONTENTS

| | | | |
|--|---|--|----|
| Command Conversions for Five Bands | 2 | Fifty Megacycles and Above | 10 |
| Woy Woy Field Day of the N.S.W. Div. W.I.A. | 6 | Australian V.h.f. Records | 10 |
| Book Review | 6 | Short Wave Listeners' Section | 12 |
| Annual State Convention of the Vic. Div. W.I.A. | 7 | DX Activity by VK3AHH | 13 |
| Simple S Meter | 7 | Prediction Chart for January, '55 13 | |
| DX Countries of the World | 9 | Federal, QSL, and Divisional Notes | 15 |
| | | Obituary | 19 |

COMMAND CONVERSIONS FOR FIVE BANDS

BY J. K. HERD,* VK3JK

BY now we are all very familiar with those popular pieces of disposals equipment known as the BC450/SCR274N/ARC5 series of transmitters and receivers. It is with the transmitters that this article will deal and it is to be hoped that someone who has had experience with the receivers will describe their alteration and uses later.

Of course a great deal has been written regarding the transmitter conversions in "CQ," "QST" and other American journals, but to cull and collate the relevant details is quite a job, even if they were all available for us to peruse.

Some of the following ideas were obtained from two "CQ" articles, one by Lt. Paul H. Lee, W4RXO (May, 1952) and the other by Herb. S. Brier, W9EGQ (February, 1954).

The main frequencies we wish to cover are 3.5, 7, 14, 21 and 28 Mc., and a separate transmitter for each of these bands can be acquired by modifying the 4 to 5.3 Mc. unit (BC457A). However for the 7 Mc. and higher frequencies, the 5.3 to 7 Mc., or preferably 7 to 9.1 Mc., entail less work.

80 METRES Firstly for 3.5 Mc. For this band use the BC 457A. It is desirable to rewire the filaments for 12 volt operation by putting them all in parallel. But, before we do so, it will be simpler if we take out all the unnecessary bits and pieces as our first job. Now for the screw driver and small side cutters!

Take off the top cover and bottom plate and attack the variable antenna inductance and its associated relay and supports and carefully put the inductor to one side. Then turn the unit over and examine the chassis interior carefully, noting that the only wiring needed will be that for p.a. plate, p.a. screen, osc. plate and the filaments. Take out all wires associated with the small relay in the cathode circuit and the relay itself, as also the wires that run up to the antenna relay. The method of altering the filament wiring from series (for original 24 volt supply) to parallel for the proposed 11.3 to 12 volts, is quite obvious, but we must remove the resistor in clips on the rear wall as well as the quarter watt connected between pins 2 and 8 on the magic eye (1629).

Having dealt with the filaments and redundant wiring and earthed the 1625 cathodes, proceed to remove the shield can covering the osc. coil and padder condenser, topside. With the bristo spanner, release the grub screws on the locking washer attached to the shaft and drill a 3/8" hole in the can so that this shaft can be operated by a screw driver to reset the oscillator frequency.

* 4 Murdoch Road, Wangaratta, Vic.

By increasing the capacity in this condenser, the oscillator will go down to about 3.2 Mc. without further ado. The station receiver can be used for this purpose. Now unlock the grub screws on the p.a. padder condenser, so that it may be resonated with the oscillator frequency. The rotary link inside the p.a. tank coil now has one side earthed and the other can be run to the antenna terminal, or alternatively a co-axial connector can be used instead, with a piece of co-ax running therefrom to the rotary link. This is really preferable.

If it is desired to replace the original 7-pin female plug on the back drop of the chassis with a 5-pin valve socket, the original plug is removed by using a sharp screwdriver to release the turned over edge on that plug so that it can be pushed out. Then file the hole to fit the new socket and connect the wiring to it as follows:—

Group the B minus, earth and one filament wire to one pin, and on the other four solder the other filament (un-earthed), p.a.h.t. plus, screen p.a. h.t. plus, and osc. h.t. plus. Having first temporarily replaced the oscillator shield can and set the padder, again remove the can and relock the grub screws on

both this and p.a. padder unit. Replace the can and its screws, the bottom plate and upper cover; it is now ready to go on 3.5 Mc.

If one wishes to plug in a grid current meter or a key, use a phone jack or a pair of insulated pin jacks placed in front of the neutralising condenser on the side wall of the chassis. One side goes to the grid leak of the 1625s and the other is earthed. By using a 90 volt battery or a fixed bias supply, blocked grid keying is the ideal method for these little units. Up to 750 volts can be used for c.w. and 600 volts for phone, without danger of flashover in condensers.

40 METRES In this case preferably use the 7 to 9.1 Mc. unit or the 5.3 to 7 Mc., to save extra work other than the necessary removal of surplus pieces and wiring as described above, and the re-wiring of filaments. The 5.3 to 7 Mc. unit needs only re-setting of the padders to bring it from 5.3 up to 7 Mc. as further treatment, but the 3 to 4 Mc. or 4 to 5.3 Mc. units need extra attention in either of two ways.

One is to install a 12A6 in the crystal socket and a coil in the 1629 socket, either slug or condenser tuned, for

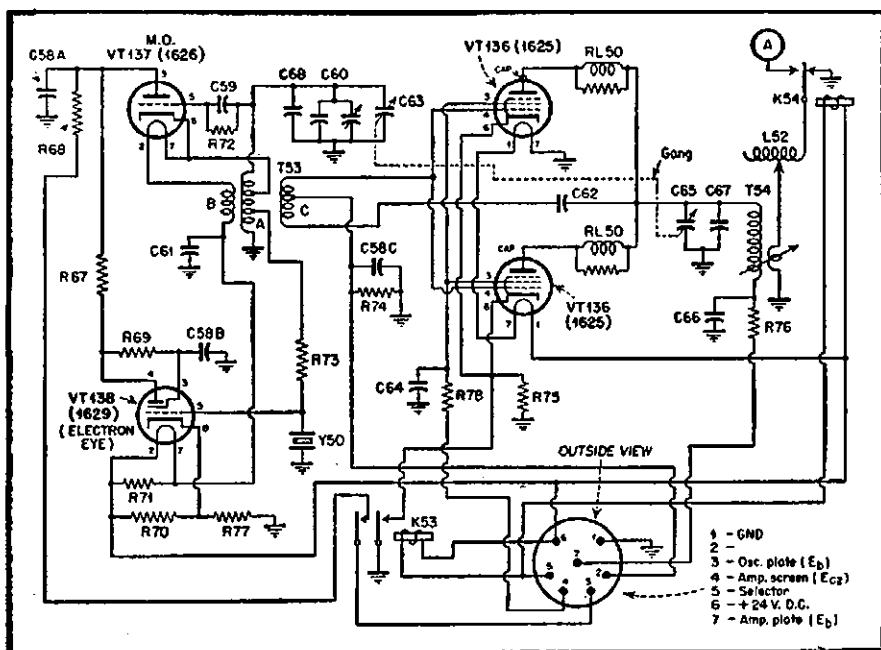


Fig. 1.—Circuit of the unmodified Command Unit. The following parts are identified:

- | | | |
|--------------------------------|---------------------------------|-----------------------------|
| C58A, C58B, C58C—0.05 uF. | C67—Power amplifier padding. | R70—1,000 ohms. |
| C59—0.0018 uF. | C68—3 pF. | R71—126 ohms. |
| C60—Master oscillator padding. | C69—50 pF. | R73, R74—15,000 ohms. |
| C61—0.006 uF. | K53—Transmitter selector relay. | R77—390 ohms. |
| C62—Fixed neutralising. | K54—Transmitter output relay. | R78—51 ohms. |
| C63—Master oscillator tuning. | L52—Antenna loading coil. | RL50—Parasitic suppressors. |
| C64—0.002 uF. | R67, R72, R75—51,000 ohms. | T53—Oscillator coils. |
| C65—Power amplifier tuning. | R68, R76—20 ohms. | T54—Amplifier coils. |
| C66—0.01 uF. | R69—1 megohm. | Y50—Crystal unit. |

doubling purposes. In this event we remove the neutralising condenser on the side wall and place it in the junk box, for it was actually found unnecessary on any of the conversions—there being no sign of instability on any of the units. Remove the wire going to C58C and R74 from the base of the osc. coil and re-solder it to the pin, which was previously connected to the neutralising condenser. Remove the wire going to the 1625 grids. From the pin on the osc. coil base to which it was connected, run a wire to the grid pin on the 12A6 socket. Having rewired the latter tube as a doubler to 7 Mc., couple it to the 1625 grids through a 100 pF. mica condenser and run a 15,000 ohm one watt resistor to one side of the beforementioned key jack.

The other method—alteration of the osc. coil—is probably the easier. Remove the appropriate shield can and attack the osc. coil winding in this fashion. From the top of the coil remove turns from the heavy winding leaving $3\frac{1}{2}$ above the cathode tap, and from the bottom of the winding remove sufficient turns to leave $6\frac{1}{2}$ below the cathode tap.

A word of warning here! It will be noticed that winding B in the original circuit (see Fig. 1) is made with very fine s.c.e. wire, so be cautious in your labours below the cathode tap! If this wire is broken inside the coil former, untold trouble is caused and great patience is needed to replace it. I know, it happened to me. Cut this wire a full turn away from the hole through which it disappears, then remove sufficient turns to bring it level with the heavy winding (A in Fig. 1). Bare both cut ends very carefully and neatly splice and solder. The oscillator can be brought to 7 Mc. with the padder.

Turns are removed from the p.a. tank coil so that it resonates on 7 Mc. with its padder and variable condensers. Leave $8\frac{1}{2}$ double spaced turns on coil.

If it is desired to still use the 1629 magic eye, replace the tap to R73 one turn up from the bottom of the osc. coil winding.

15 METRES We have a wide choice for this frequency. The easiest is to use a 7 to 9.1 Mc. transmitter and proceed as we did for 3.5 Mc. When all this is done, turn the dial to 9.1 Mc. and, by re-setting the oscillator to tune to 10.725 Mc., we can double in the final.

In this case, cut the lead to the stator of the p.a. geared variable condenser, remove the locking device from the p.a. padder, fit an extension shaft and knob to it, and remove turns from the p.a. coil leaving $4\frac{1}{2}$ double spaced turns and we are ready to go when a 50,000 ohm grid leak is substituted for the 15,000 ohm one. It is better to use a 12A6 doubler as described earlier and drive the p.a. as an amplifier on 21 Mc., using the 15,000 ohm grid leak in this case, preceded by a 2.5 mH. r.f. choke. Again we may use any of the other units by attacking the osc. coil winding as before to enable us to bring it to 10.725 Mc. as its upper limit.

In the doubler plate tank a 50 pF. midget condenser tunes a close wound coil $\frac{1}{8}$ " in diameter of 20 gauge enamel wire, mounted on two pins of a cut down tube base. About 20 turns will resonate on 21 Mc.

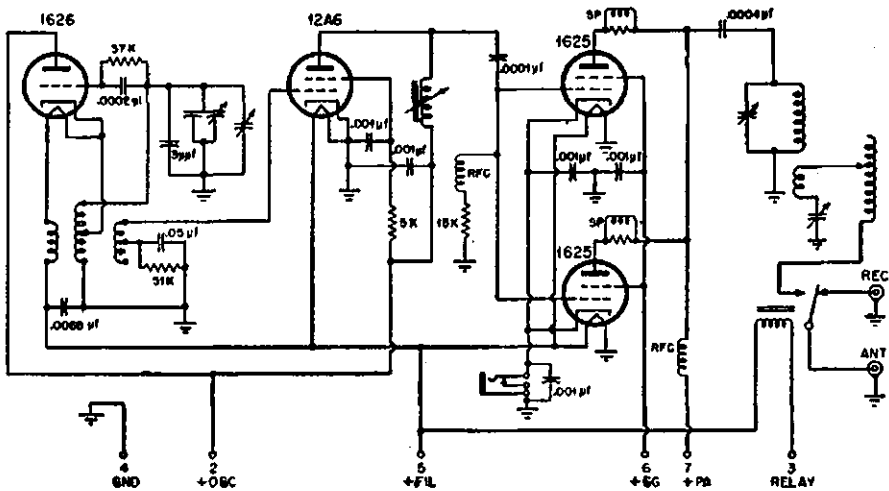


Fig. 2.—The 28 Mc. conversion is somewhat similar to the 14 Mc. Transmitter.

20 METRES Use any of the units by altering the osc. coil in the case of the 3 to 4 Mc. or 4 or 5.3 Mc. jobs and re-set the chosen one to cover the required spectrum on 7 Mc. Strip out all the wiring and small resistors associated with the crystal and 1629, and 20 ohm resistor in the oscillator plate lead. Now proceed to add a doubler as before, using a similar condenser and a 6-turn coil wound on a valve base. Disconnect the p.a. variable condenser and cut down the p.a. tank coil to $5\frac{1}{2}$ double spaced turns. The rest of the modifications are as previously set out. This job will really delight you with its performance.

10 METRES There is a good deal more to be done with this one. After proceeding as for previous units (14 Mc.) remove the surplus wires, etc., and rewiring the filaments in parallel, take out the variable tuning condensers and their worm drive in toto, by the following procedure:

Remove the knob on the vernier tuning control, lock nut on the centre of the graduated dial, as also the frequency locking knob and the clamping device associated with this latter. Remove the p.a. padder condenser completely and take out the mounting screws holding geared variables. These condensers can now be juggled right out of the chassis.

We now proceed to remove plates from the condensers at this stage, but, once more, be careful of the method of attack. The rotors move in ball bearings which are filled with small spheres of $1/16$ " diameter. Undue pressure or incautious application of the pliers will dislodge the rear end of the rotor and then the fun begins with the retrieving of these tiny bearings from the floor (if they have not already rolled into some place where they defy all attempts at discovery)—again I know, that's the reason of the warning.

Now remove all but six rotor and five stator plates in the p.a. variable condenser. When this is done, unlock and remove the gear wheel engaging the worm drive on it from this condenser shaft and drill a $\frac{1}{8}$ " hole on the side of the chassis to accommodate a shaft and knob so that independent tuning with this condenser is possible.

The oscillator variable has its rotor only dealt with and here take out all but three moving plates. The associated padder above has four rotor plates removed before the shaft is unlocked. Proceed now to operate on the osc. coil in a similar fashion to before, but this time leave only $1\frac{1}{2}$ turns above the cathode tap and four below it. Remove B winding turns (Fig. 1) until level with the heavy winding as before. It is possible to put the oscillator now on 14 Mc. with comparable stability to that on 3.5 Mc. Install a 12A6 doubler, as already set out, with a 50 pF. variable and about eight turns of 16 gauge tinned wire $\frac{1}{8}$ " diameter spaced to one inch.

Couple the plate of the 12A6 to the 1625 grids by a 30 pF. ceramic, run a 2.5 mH. r.f. choke and 15,000 ohm grid leak as before, but shunt the choke with a 20,000 ohm one watt resistor and from the junction of the r.f. choke and resistor connect a small 0.001 uF. mica condenser to earth. Use two porcelain feed-through insulators to support the p.a. coil above the chassis, having discarded the original p.a. tank coil. The new coil consists of six turns of 12 gauge bare copper wire $1\frac{1}{8}$ " diameter spaced to $1\frac{1}{2}$ ". Connect the h.t. plus to one end of the coil and by-pass it with the original condenser C66 to earth. Retrieve the plate clips and parasitic chokes from the discarded p.a. tank condenser to connect the 1625 plates to the other end of the coil with these. Now the oscillator can be set on 14 Mc. and the doubler tuned to 28 Mc.

In all cases a grid current of 5 Ma. is the optimum and, if necessary, cut it back when using a 12A6, by increasing the value of screen resistor of that tube.

Oscillator plate voltage should preferably be stabilised at 210 volts, under which condition the frequency is rock steady. The condenser tuning the doubler coil, when used, fits on the side wall of the chassis, below the 1629 magic eye socket between the back drop and the oscillator variable condenser.

6 METRES A much more involved operation was performed for this conversion. The oscillator being placed on 16.670 Mc. and a 12A6 used as a tripler driving the 1625s as push pull amplifiers. The tripler is link connected by a co-axial line to an aperiodic

ZEPHYR MICROPHONES

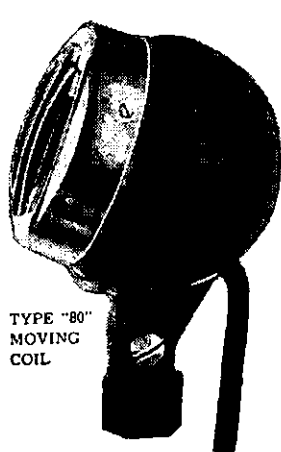


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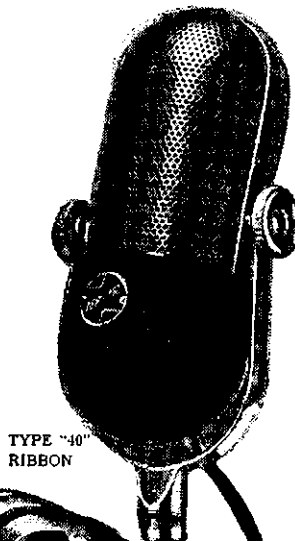
TYPE "80"

A high quality Moving Coil Microphone of striking appearance and fidelity.

- Ideal for transmission of voice or music.
- Good appearance.
- Solid cast case, finished in stoved black enamel, full tilting head.



TYPE "80"
MOVING
COIL



TYPE "40"
RIBBON

TYPE "40"

A high grade Studio Microphone, reasonably priced, for those requiring high fidelity.

- Imported magnets, highly efficient generator.
- Fully protected against dust and filings.
- Rotatable cage—360°.
- Chrome copper cage, black bakelite base, and steel gimbles.

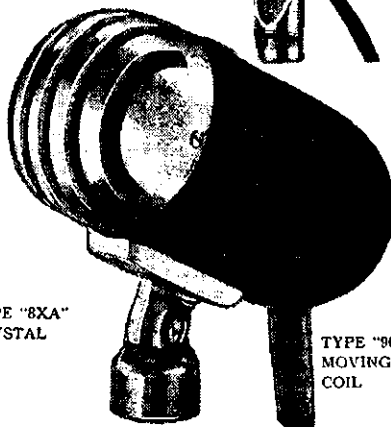
TYPE "8XA"

A quality Crystal Insert with "Zephyrifil" filter.

- Durable chrome steel cage.
- Hand or stand pattern.
- Good high frequency response.
- Full tilting head.



TYPE "8XA"
CRYSTAL



TYPE "90"
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TYPE "90"

Precision built Moving Coil Generator provides good quality reproduction.

- Light weight, durable chrome and baked enamel metal case.
- Full tilting head.
- Excellent sensitivity.
- Robust construction.

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grid coil and adjusted for 6 Ma. grid drive. This job works as far as tripler output is concerned on 6 metres, but so far the p.a. has not been finished. When it is completed and operating, it will be the subject of a separate article.

OPTIONAL CRYSTAL CONTROL ON 80 OR 40 METRES

A plug-in adaptor (Fig. 3) is made which can be placed in the 1626 socket, and this tube is used then as the c.o. without disturbing the v.f.o. feature of the unit. V.f. control can be reverted to by removing the adaptor and replacing the 1626 when we wish to. Should we have been lucky enough to get the resonating crystals with our transmitters, we can use at least the holder and perhaps the crystal as well if it can be reground for 3.5 or 7 Mc.

With a hack saw carefully cut round the sealing can just above the base of the crystal holder and remove the can. This will disclose an excellent holder on an octal base. This can be used again if it and its crystals are considered suitable when altered.

The adaptor is constructed as shown in Fig. 3 from scrap aluminium. An octal plug, made from the base of an old metal tube, is fitted to the bottom of this unit and an octal socket placed so that the 1626, when inserted, lies over the space where the crystal and magic eye were situated (latter tube is used is removed for crystal operation). A suitable crystal socket is fixed to the adaptor in a position where it will not interfere with outer top cover when latter is replaced.

If, when operating phone with the 80 and 40 metre units, frequency modulation is noticed or suspected, a buffer stage can be inserted in a fashion similar to a 12A6 doubler stage, except in this case a 2.5 mH. r.f. choke is used to replace the tuned circuit in the plate. The buffer doubler in the other conversions will prevent the oscillator from being affected in this manner.

Depending upon the input used in these transmitters, an appropriate modulator can be employed for modulation of the plates and screens of the 1625s at 255 volts.

It is suggested that the circuit shown in Fig. 4 of the power supply be employed. By this means extreme variations in screen voltage can be avoided when employing c.w. The use of a dropping resistor from the p.a. plate supply to feed the screens is not advocated for telegraphy.

ANTENNA COUPLER

The antenna coupler here uses some of the discarded pieces from the various units. The 80 metre coil from the 3 to 4 Mc. or 4 to 5.3 Mc. units to series tune the antenna has turns removed so that the optimum antenna current for a particular frequency on 80 metres is obtained. A coil from the 5.3 to 7 Mc. or 7 to 9.1 Mc. units can be cut down and double spaced to parallel tune the coupler on 40 and 20 metres. For 15 and 10 metres air wound coils are used.

The all-band antenna here consists of a 66 feet flat top, centre fed by an open wire line 42 feet long and a suitable coupler, using disposal gear, is used.

Band changing with the units described, and the above coupler, is merely

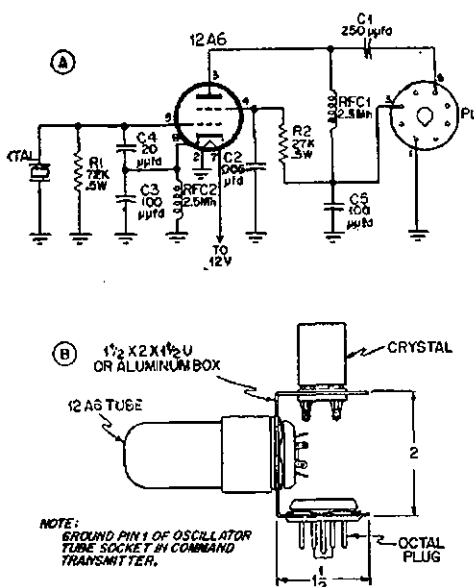


Fig. 3.—This adaptor may be used with any Command transmitter by following the instructions given in the text. A partial structural view is shown in "B" and a schematic (parts list below) is shown in "A."

- C1—250 pF. 600v. ceramic.
- C2—0.005 uF. 600v. ceramic.
- C3, C5—100 pF. 600v. ceramic.
- C4—20 pF. 600v. ceramic.
- R1—72,000 ohm 1/2w.
- R2—27,000 ohm 1/2w.
- RFC1, RFC2—2.5 mh. r.f. chokes.
- PL—Octal plug, male (base of metal tube).
- VT—12A6 or 1626.
- Xtal—3.5 or 7 Mo. crystal.
- Built-in U bracket bent of aluminium or aluminium box approx. 1 1/2 x 1 1/2 x 2 inches.
- To use adaptor, ground pin 1 of 1626 tube in transmitter.

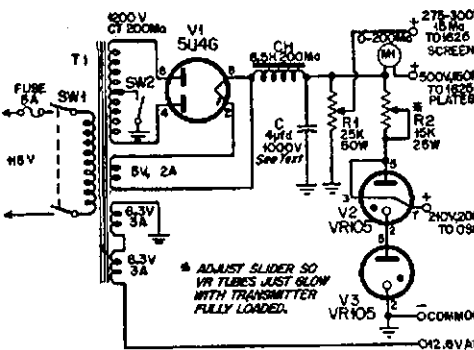


Fig. 4.—Parts list and wiring schematic of a power supply suitable for use with the Command set transmitters. Although the rectifier tube is slightly overloaded, no damage should result if the primary of the transformer is fused. The oscillator voltage must be regulated for v.f.o. operation.

- T1—Power transformer, 600-0-600v. 200 Ma., 5v. 3 amp., 6.3v. 3 amp., 6.3v. 3 amp., Ch—5.5 h., 200 Ma.
- C—The most desirable filter condenser for the power supply is an oil filled, 1,000v. unit, with a capacity of 4 uF. or more. However, where economy is important, two 8 or 16 uF. electrolytic condensers connected in series may be used, with 100,000 ohm 1w. resistors across each one to equalize the voltage drops.
- R1—25,000 ohms. 50 watt, with slider.
- R2—15,000 ohms. 25 watt, with slider.
- SW1—D.P.S.T. toggle.
- SW2—S.P.S.T. toggle.
- Fuse—5 amp.

a matter of seconds and we have 100 watts available on five bands.

At this station, return to the old order of transmitters, which were in a constant state of alteration, would not be contemplated, under any consideration, apart from the tidy and simple appearance of the set-up. It is really ideal for the man with limited space for his gear.

MULTI-BAND ANTENNA

In closing, here is an idea for a four band antenna that is worth trying. Flat top 137 feet 8 inches long, and fed with 300 ohm line, 46 feet 6 inches from one end. The line is non-resonant and gives a fairly accurate match on all four bands without accurate impedance matching with an antenna coupler.

The following is a comment by Edmund H. Marriner, W6BLZ, from "CQ" of March, 1954.

"No graphs and no theory, but an antenna that works on 80, 40, 20 and 10 metres. I have often wondered why someone doesn't publish a handbook with antenna dimensions worked out. Most of the fellows want to put up an antenna without plowing through a lot of formulae and graphs.

"Here is an antenna worked out by W5LPM so that it can be fed on 80, 40, 20 and 10 metres with the 300 ohm point for the feeder at the same place for all bands. This lends itself to the use of 300 ohm twin lead.

"On 80 metres, the half wave antenna has a high angle of radiation. This is good, as many readers are interested in 200-300 mile contacts. On 40, 20 and 10 metres the angle decreases and comes out about right for DX on each band.

"This antenna is a version of the old single wire off-centre fed Hertz. It is fed with 300 ohm twin lead. The antenna must be cut to 137 feet 8 inches long. The antenna is fed at a point 46 feet 6 inches from one end. An insulator is inserted and the 300 ohm twin lead fastened and taped with electrical plastic tape. The antenna is made 137.7 feet specially so that it falls in the middle of the ten metre band at about 28.4 Mc.; which is the most critical band. It is very broad tuning on all other bands.

"There are several ways to couple the antenna into the transmitter. If a parallel tank is used, adjustment can be made by simply moving the link in and out. If a 50 or 70 ohm low-pass filter is used, it will be necessary to add a set up to match to the 300 ohm line.

"I have found that with this antenna there is less t.v.i. than when using end-fed Zepps where there is a large circulating current in the feeders.

"Near the ocean it is best to use No. 12 plastic house wire for the antenna. This solves antenna wire corrosion problems. The antenna will last much longer than when using enameled covered wires.

"Do not use rope to support the antenna or you will wake up one morning and find the twin lead wrapped around the antenna due to shrinkage of the rope. A swivel does not help very much. It is best to use wire to support the antenna and bring the wire right up to the pulley. The supporting wires should be broken every several feet with egg insulators so as not to unbalance the antenna."

WOY WOY FIELD DAY OF THE N.S.W. DIV. W.I.A.

The value of these organised Field Days has been evident this year as possibly never before and this 1954 Field Day at Woy Woy attracted a large gathering of Amateurs, their wives and families, not forgetting the XYLs from Sydney and Newcastle for the main part; Arthur 2ZP, journeyed from Inverell, but it was found that the road traffic was not so severe as in previous years and all appeared to make fast times on the trip.

The following attended: 2ASW, 2HZ, 2VC, 2YA, 2ARF, 2LX, 2KR, 2AKR, 2ABV, 2OT, 2ZP, 2EL, 2AQO, 2XT, 2OQ, 2ASE, 2AWQ, 2ACD, 2EO, 2YC, 2ZC, 2FP, 2AAB, 2YB, 2AOJ, 2JX, 2AVK, 2AXZ, 2AOR, 2XY, 2AUH, 2FM, 2AHA, 2DG, 2ANA, 2APX, 2AMQ, 2AEF, 2AEZ, 2AJ, 2AML, 2ZW, 2ACU, 2ABU, 2ANU, 2VU, 2KG, 2PU, 2YL, 2PZ, 2AJM, 2VQ, 2ID, 2AZN, 2NG, 2YR, 2YM, 2IT, 2AH, 2CE, 2APQ, 2HO, 2AJZ, 2AAJ, 2AGD, 2SF, 2AET, 2AGO, 2ZAK, 2AGW, 2ACI, 2GR, 2CS, 2VY, David Hay, Bern Taylor, Ron Rudkin, Barry Rudkin, Ces Cronin, Athol Greenhaigh, Harry Cunningham, Richard Retallick, Norm Moody, Mr. Bailey, Mr. James, Norm Burton, XYLs, YLs, and children, all making a very satisfactory gathering.

The morning session was devoted to a general ragchew and registration, when all really got to know one another and many old friends met again in person and recalled the old times and possibly some of the old timers. Jim 2YC, our President, made the Sunday morning broadcast from 2KR, who incidentally, has moved from his old location, is now the other side of the back fence.

Following lunch, the arrival of "Admiral Issacs" and his Petty Officer, 2ABO and Alf, together with Greg 2ANP and Ian 2JI, was witnessed, the group having sailed by dead reckoning and rule of Thrum into the waterside wonderland, from Port Jackson. Their departure a half hour later was in humorous vein, and was a welcome visit to the Field Day. The weather had been quite poor, high winds and high seas, but their return trip was made without event.

Children's events were organised by 2YB and 2AOJ, the 144 Mc. tx Hunt organised by 2EO, and others were run, and the ladies' competitions at the hall were well supervised by 2YC and 2ACI. Raffles run during the day were handled by Ruth, Mrs. 2YC, and Val, Mrs. 2EL, organised the pick-the-valves competition.

Following an afternoon full of activity afternoon tea was taken by most assembled and various types of refreshment were obtainable, ice creams and drinks for the kiddies, tea for the ladies and a familiar brown fluid for the sterner sex.

The thanks of the Council go out to those who so willingly assisted to make the day a success: Bill 2HZ, Registration Officer; Ces 2KR, John 2GA, and Major 2RU, for their local organisation particularly; Mrs. Hardman, whose work in the kitchen is always a feature; Mrs. Corbin and Mrs. Bourke; Dave 2EO on

the Tx Hunt; 2AOJ and 2YB on the Sports; Rod 2ACU in the back room; 2ASW, 2AAB, assisting with the registration; and 2AWQ and 2EL on the lucky dip; 2AEZ for the tape.

The prizegiving was conducted by the President, Jim 2YC, and the following were awarded to the fortunate recipients: Ladies' Lucky Number: 1st, Mrs. Harvey (2ACI); 2nd, Mrs. Whiting (2ACD); 3rd, Mrs. Storer (2GR); 4th, Mrs. Bourke (2EL). Musical Quiz: 1st, Mrs. Boyd (2AML); 2nd, Miss Quinton (2AZN). Pushing the Penny: 1st, Mrs. Swain (2CS); 2nd, Mrs. Smith (2AEL). 144 Mc. Tx Hunt: The tx was located at Saratoga and was not found, but the prize was awarded to 2AET and 2VU (Singleton). All Band Scramble: Harold 2AHA. Guess the Valves: 1st, Ken 2KG; 2nd, Harold 2AHA. Morse Test: 1st, Jim 2ZC; 2nd, Ken 2KG. Gents' Lucky Number: 1st, 2DG; 2nd, 2AGO. Pick the Voices: 1st, Ted 2ACD; 2nd, Mrs. Hay (2AGW).

Further lucky numbers were drawn and 60 members received prizes of valves, the President getting his number drawn only to get a cracked valve. Special prizes were drawn and were won by 2XO, 2ASE, Mrs. 2YC, 2EL and 2AZN.

BOOK REVIEW

RADIO CALLS OF THE WORLD

Published by the N.Z. DX Radio Association, 80 pages, Aust. price 4/9.

This is a list of 6,000 medium wave and 2,500 short wave broadcasting stations giving frequency, call sign, location and power. It is a handy little book to have around. On looking through it one finds that the short wave stations extend from 2.33 Mc. to 26.08 Mc., that YVLG is on 3.512 Mc., EQO on 3.797 Mc., a lot of stations in the 40 metre band, none in the 20 and 15 metre bands. Did you know that KCHS on 1400 Kc. is located at Truth or Consequences, New Mexico? Fascinating!

One obvious omission is the long wave broadcasting band. For completeness, I feel sure space could be found in future editions for these 17 stations lying between 155 Kc. and 281 Kc.—A.K.H.

PHILIPS TECHNICAL REVIEW AND PHILIPS COMMUNICATION NEWS

These two journals contain much of interest to the technically minded Amateur. In them will be found descriptions of the latest advances in communications as developed in the Philips Laboratories. In the copies on hand are found articles on carrier telephone systems, the international exchange of television programmes and the methods of changing from one set of standards to another, an instrument for measuring transmission times to 0.000,000,001 of a second, and the new photo flux flash bulbs.

Subscriptions for these journals should be sent to Messrs. Philips Electrical Industries of Australia Pty. Ltd., Philips House, 69-73 Clarence St., Sydney.—A.K.H.

CALL SIGNS

It has been noted with concern that there has been a growing tendency during recent months for licensees of Amateur Stations, particularly when engaged in telephony transmissions, to omit the prefix "VK" when announcing station call signs.

Such practice is, of course, not in accordance with International requirements, and contravenes the Wireless Telegraphy Regulations under which stations operate. Regulation 60 states that the licensee of an Amateur Station shall at all times transmit the full call sign allotted to the station concerned.

DX C.C. LISTING

PHONE

| Call | No. | Ctr. | Call | No. | Ctr. |
|--------|-----|------|--------|-----|------|
| VK4HR | 12 | 175 | VK4RT | 22 | 124 |
| VK3BU | 3 | 168 | VK4WJ | 17 | 122 |
| VK6RZ | 2 | 165 | VK4DO | 20 | 118 |
| VK4FJ | 21 | 164 | VK4JP | 8 | 114 |
| VK3EE | 10 | 163 | VK5MS | 24 | 109 |
| VK3JD | 1 | 155 | VK4CB | 28 | 109 |
| VK4KS | 9 | 152 | VK3WM | 29 | 109 |
| VK6KW | 4 | 150 | VK3HO | 25 | 103 |
| VK3ATN | 26 | 145 | VK2ADT | 13 | 102 |
| VK3LN | 11 | 141 | VK2AHA | 15 | 102 |
| VK3AWW | 14 | 140 | VK6PJ | 19 | 101 |
| VK3JE | 7 | 139 | VK3IG | 5 | 100 |
| VK4WF | 16 | 137 | VK3GG | 18 | 100 |
| VK4RW | 23 | 135 | VK5LC | 27 | 100 |
| VK6DD | 6 | 128 | VK3AUP | 30 | 100 |

C.W.

| Call | No. | Ctr. | Call | No. | Ctr. |
|-------|-----|------|--------|-----|------|
| VK3BZ | 6 | 214 | VK5FH | 31 | 134 |
| VK3KB | 10 | 200 | VK4RF | 11 | 125 |
| VK4HR | 8 | 198 | VK3HT | 37 | 124 |
| VK3PH | 15 | 191 | VK3YD | 27 | 123 |
| VK4FJ | 29 | 191 | VK3EK | 3 | 122 |
| VK4EL | 9 | 175 | VK3JI | 25 | 113 |
| VK5BY | 45 | 172 | VK3PL | 38 | 117 |
| VK2EC | 2 | 170 | VK3UM | 13 | 116 |
| VK3CX | 26 | 168 | VK2OY | 44 | 115 |
| VK5R | 23 | 159 | VK7LJ | 24 | 114 |
| VK8RU | 1 | 151 | VK4DA | 7 | 113 |
| VK3CN | 1 | 151 | VK7LZ | 17 | 112 |
| VK2GW | 16 | 151 | VK5RC | 13 | 107 |
| VK6SA | 28 | 150 | VK5XK | 41 | 107 |
| VK5BO | 33 | 150 | VK6RW | 42 | 104 |
| VK4QL | 38 | 146 | VK3RJ | 32 | 104 |
| VK4DO | 20 | 144 | VK2YC | 34 | 103 |
| VK3XO | 43 | 144 | VK3PG | 46 | 102 |
| VK3VU | 4 | 143 | VK3APA | 14 | 101 |
| VK2QL | 5 | 142 | VK3NC | 19 | 101 |
| VK3XK | 30 | 138 | VK2OA | 32 | 101 |
| VK3JE | 21 | 137 | VK7RK | 22 | 100 |
| VK3YL | 39 | 135 | VK2AEZ | 35 | 100 |
| | | | VK4RW | 47 | 100 |

OPEN

| Call | No. | Ctr. | Call | No. | Ctr. |
|--------|-----|------|--------|-----|------|
| VK3BZ | 4 | 224 | VK5LC | 55 | 118 |
| VK2ACX | 6 | 221 | VK7LZ | 23 | 116 |
| VK4HR | 7 | 211 | VK3VQ | 46 | 116 |
| VK4FJ | 32 | 206 | VK2ASW | 53 | 116 |
| VK6RU | 8 | 200 | VK3JA | 43 | 114 |
| VK3JE | 12 | 198 | VK2ADT | 14 | 113 |
| VK2NS | 16 | 195 | VK3HO | 38 | 111 |
| VK3HG | 3 | 181 | VK3MM | 49 | 111 |
| VK4EL | 10 | 175 | VK4RC | 21 | 110 |
| VK6KW | 13 | 171 | VK3ZB | 34 | 110 |
| VK2DJ | 2 | 170 | VK9XK | 54 | 109 |
| VK4DO | 15 | 168 | VK2ZC | 25 | 108 |
| VK3KX | 1 | 167 | VK3KR | 56 | 107 |
| VK4KS | 24 | 167 | VK2YN | 11 | 106 |
| VK3AWW | 45 | 150 | VK9DB | 59 | 106 |
| VK9GW | 48 | 150 | VK3AWN | 36 | 105 |
| VK4BW | 52 | 145 | VK6WT | 58 | 105 |
| VK3LN | 29 | 144 | VK2YN | 18 | 104 |
| VK5FL | 26 | 143 | VK4UL | 27 | 104 |
| VK4WF | 40 | 141 | VK6PJ | 44 | 104 |
| VK3HT | 41 | 141 | VK6PW | 64 | 104 |
| VK3MC | 5 | 139 | VK2HZ | 17 | 103 |
| VK3OP | 19 | 137 | VK7KB | 30 | 103 |
| VK6DX | 42 | 137 | VK2TI | 37 | 103 |
| VK8DD | 22 | 136 | VK3YS | 57 | 103 |
| VK2ADE | 28 | 133 | VK7RK | 31 | 102 |
| VK3JI | 33 | 131 | VK4TY | 35 | 102 |
| VK2AHA | 9 | 128 | VK5HI | 51 | 101 |
| VK2AHM | 20 | 125 | VK2TG | 39 | 100 |
| VK3PG | 47 | 124 | | | |

ANNUAL STATE CONVENTION OF THE VIC. DIV. W.I.A.

Under ideal weather conditions, the Annual Convention of the Division was held at Ballarat on the week-end of November 27-28, 1954. Proceedings opened with a general assembly at the shack of 3AMH, which is a brand new one and located on one of the highest points of Ballarat, being 1,700 feet above sea level. After all had received their accommodation, preparations were made for the Dinner and Convention. Approximately 80 members sat down to an excellent repast, but before all could do justice to the meal, the ladies and children retired to the main dining hall so as to make room for the "Old man," owing to the seating accommodation being overtaxed. The usual toasts were honored and received.

The business side of the Convention got away to a good start, there being 25 items, which meant a long sitting. However, by good judgment on the part of the President, everything went along smoothly. The debates were well spoken and the outcome of the business will be for the good of members. The Kinnear Trophy for 1953-4 was won by the North East Zone and the President of the Division called on the President of the Zone to come forward to receive it, but unfortunately he could not be found, the result being that the trophy will be forwarded to the Secretary of the Zone in due course. At 11.15 p.m. the President closed the Convention, then the ladies, having returned from the pictures, joined with the "O.M.s." at supper.

Members were most delighted to welcome the President of the VK2 Division, Jim 2YC, accompanied by Vice-President Charlie 2AWQ, Hon. Secretary Harry 2ACH, and Council member Vince 2VC. Other VK3 members and visitors were: Chas. Godden and Frank Utchman, from Mildura; Graham and Mrs. Colley, from Traralgon; Keith Scott, Maffra; Neil Hamilton, from Coleraine; Jim Heard, from Wangaratta; Clyde

Case, travelling from Birchip, unfortunately for him his car broke down at Stawell and he could not proceed to Ballarat.

Some of the highlights were: Bob 3IC came equipped with tx hunting gear on his motor bike; some wag named him "The man from Mars." Jack's (3VZ) rx broke down just as he was on the hidden tx hunt. On Sunday morning, more than half of the gathering developed hay fever. The most disappointed man at the Convention was Frank 3OF, owing to the fact that the six metre band was not open.

After the demonstrations and talk, there should be many more converts to mobile equipment. It is understood that 3SX will be one of the first. The Federal Secretary and the President of the VK2 Division had a very long session, evidently talking Institute matters. Don 3ALQ and party had the misfortune to lose their 7 Mc. xtal, thus depriving them from taking part in the Scramble.

In summing up, the Convention was an unqualified success, thereby proving the policy of running them in the country centres. Special praise goes to Bill Sadler and members of the South Western Zone.

On Sunday, the social side of the Convention opened with all hands at the shack of 3AMH. More car loads of visitors arrived for the day's doings and a count of cars revealed 35. A hidden tx hunt started the day's activities, and after much turning of loops, those who were participants, moved off. Several members went on a tour of the S.E.C. power station and the remainder went on a bus tour of the city. Unfortunately for the hunters, the tx "went on the blink" just after the start and another one had to be procured in a hurry, however all went well.

After lunch, the assembly point was the Botanical Gardens, one of the show

places of Victoria. Here things really got going, numerous cars were equipped with l.f. and v.h.f. gear and the boys "went to town." A "contest" was held, with one station at a time, 10 minutes being allowed to make as many contacts as possible on any band. A treasure hunt for the children resulted in much fun for them, and the guessing of a tuned circuit provided many weird answers. After the prizes were distributed and the usual camera barrage had their go, the cars made their way home, with everybody having had a wonderful time.

It would be an idea if a "Get Together" with other Divisions could be arranged at some suitable time and place, as it seems that a closer liaison could be a distinct advantage to all members of the W.I.A.



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- ★ LET SAFETY FIRST BE YOUR MOTTO.
- ★ STAMP OUT THOSE CAMP FIRES.
- ★ OBSERVE CARE IN HANDLING HIGH TENSION.
- ★ DRIVE SAFELY.
- ★ DON'T NEGLECT THE XYL.
(Avoid the Dog House.)

★ ★

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Simple S Meter

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There are many and varied circuits for S meters and here is another to add to your receiver. There are two adjustments for correctly setting the needle deflection and zero set.

With this circuit it is possible, with the right equipment, to calibrate the scale in db to the input of the receiver.

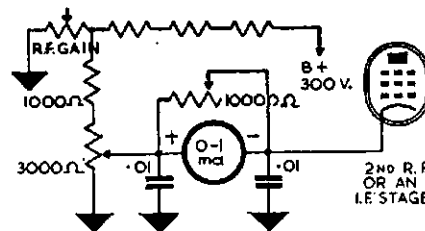
Maximum deflection is controlled by a 10,000 ohm wire wound potentiometer and zero set is controlled by a 3,000 ohm potentiometer.

Some experiment may be needed to get the right voltage balance across the meter.

For c.w. reception the meter should be isolated from the circuit by opening both leads to the meter.

The circuit values are the ones in use in a BC348 receiver. With suitable modification of values, this circuit can be used with any type of receiver.

* 72 Orr Street, Shepparton, Victoria.



Tap on to the B+ line just before the r.f. gain control. The 3,000 ohm potentiometer can be mounted next to the meter for the zero level may vary from band to band. The 10,000 ohm potentiometer can be mounted anywhere.

The negative side of the meter goes to the cathode of a tube controlled by a v.c.

These values work on the writer's BC348. They may not on yours, so be careful as meters are easily damaged. When you have the meter working right, you will have an S meter that works like a charm and does not over swing on those local signals.

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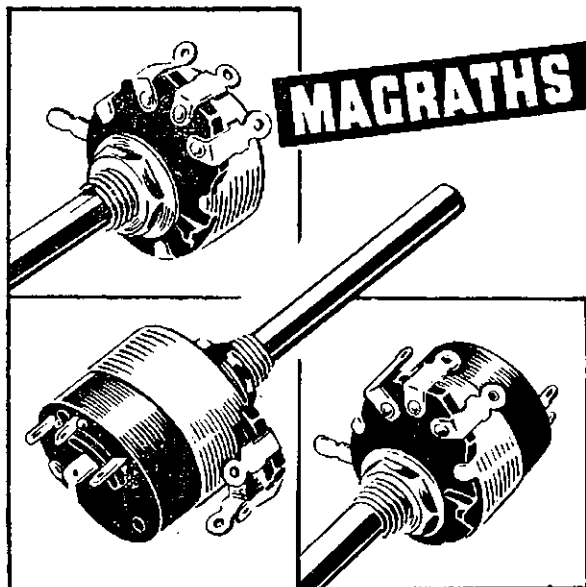
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DX COUNTRIES OF THE WORLD

The list of Countries as hereunder, and as amended from time to time in Federal Notes, is the Official List to be used in connection with the issue of the Australian DX C.C. Award.

The list below shows first the Country, the Zone number in parenthesis (as used by the "CQ" W.A.Z. Award) and the Amateur Prefix.

| | | | |
|--|---|---|--|
| Aden & Socotra Is. (21) VS9 | Egypt (34) (MD5) SU | Liechtenstein (14) HE1 | Saudi Arabia (Hebjaz & Nejd) (21) HZ |
| Afghanistan (21) YA | Eire (Irish Free State) EI | Luxembourg (14) LX | Scotland (14) GM |
| Alaska (1) KL7 | England (14) G | Macau (24) CR9 | Seychelles (39) VQ9 |
| Albania (15) ZA | Eritrea (37) 16, ET2, M3 | Macquarie Is. (30) VK1 | Siam (26) HS |
| Aldabra Islands (39) | Ethiopia (37) ET3 | Madagascar (39) FB | Sierre Leone (35) ZD1 |
| Algeria (33) FA | Faeroes, The (14) OY | Madiera Is. (33) CS3, CT3 | Sikkim (22) AC3 |
| Andaman & Nicobar Is. (26) VU5 | Falkland Islands (13) VP8 | Malaya (28) VS2 | Singapore (28) VS1 |
| Andorra (14) PX, 7B4 | Fanning Is., Wash'ton Is., Christmas Is. (31) VR3 | Maldives Islands (22) VS9 | Solomon Is. (28) VR4 |
| Anglo-Egypt. Sudan (34) ST | Fiji Islands (32) VR2 | Malta (15) ZB1 | Somaliland, Brit. (37) VQ6 |
| Angola (36) CR6 | Finland (15) OH | Manchuria (24) C9 | Somaliland, French (37) FL |
| Antarctica (13, 29, 30) VK1, CE7, LU, VP8 | Formosa (24) C3 | Marianas Is. (Guam) (27) KG6 | Som'l and, Ital. (37) MD4, 15 |
| Argentina (13) LU | France (14) F | Marion Is. (and Prince Edward Is.) (38) ZS2 | South Georgia (13) VP8 |
| Ascension Island (36) ZD8 | French Equa. Africa (36) FQ | Marshall Islands (31) KX6 | South Orkney Is. (13) VP8 |
| Australia (inc. Tas.) (29, 30) VK | French Indo-China (26) FI | Martinique (8) FM | South Sandwich Is. (13) VP8 |
| Austria (15) (MB9) OE | French Oceania (Tahiti) FO | Mauritius (39) VQ8 | South Shetland Is. (13) VP8 |
| Azores Islands (14) CT2 | French West Africa (35) FF | Mexico (6) XE, XF | Southwest Africa (38) ZS3 |
| Bahama Islands (8) VP7 | Fridtjof Nansen Land (Franz Josef Land) (40) UA1 | Midway Island (31) KM6 | Soviet Union: |
| Bahrein Island (21) MP4B | Galapagos Is. (10) (HC8) | Miquelon and St. Pierre Is. (5) FP | Europ. R.S.F.S.R. (15, 16, 17) UA1, 2, 3, 4, 6 |
| Baker, Howeland & Am. Phoenix Is. (31) KB6 | Gambia (35) ZD3 | Monaco (14) 3A1, 3A2 | Asiatic R.S.F.S.R. (17, 18, 19, 25) UA9, 0 |
| Balearic Islands (14) EA6 | Germany (14, 15) DJ, DL, DM | Mongolian Rep. (Outer) (23) (JT) | Ukraine (16) UB5 |
| Barbados (8) VP6 | Gibraltar (14) ZB2 | Morocco, French (33) CN8 | Belorus'n S.S.R. (16) UC2 |
| Basutoland (38) ZS8 | Gilbert, Ellice & Ocean Is. (31) VR1 | Morocco, Spanish (33) EA9 | Azerbaijan (21) UD6 |
| Bechuanaland (38) ZS9 | Goa (Portu. India) (22) CR8 | Mozambique (37) CR7 | Georgia (21) UF6 |
| Belgian Congo (36) OQ5 | Gold Coast (and British Togoland) (35) ZD4 | Nepal (22) NE1, VU7 | Armenia (21) UG6 |
| Belgium (14) ON | Greece (20) SV | Netherlands (14) PA, PI | Turkoman (17) UH8 |
| Bermuda Islands (5) VP9 | Greenland (40) OX | Nether. West Indies (9) PJ | Uzbek (17) UI8 |
| Bhutan (22) | Guadeloupe (8) FG | New Caledonia (32) FK | Tadzhik (17) UJ8 |
| Bolovia (10) CP | Guantanamo Bay (8) KG4 | New Guinea, Nether. (28) PK7, JZ | Kazakh (17) UL7 |
| Bonin & Volcano Is. (Iwo Jima) (27) KA0 | Guatemala (7) TG | New Guinea, Territory of (28) VK9 | Kirghiz (17) UMB |
| Borneo, Brit. Nth. (28) ZC5 | Guiana, British (9) VP3 | New Hebrides (32) FU, YJ | Karelo-Finnish Republic (16) UNI |
| Borneo, Netherl'ds (28) PK5 | Guiana, French, and Inini (9) FY | New Zealand (32) ZL | Moldavia (16) UO5 |
| Brazil (11) PY | Guiana, Netherlands (Surinam) (9) PZ | Nicaragua (7) YN | Lithuania (15) UP2 |
| Brunei (28) VS5 | Guinea, Portugese (35) CR5 | Nigeria (35, 36) ZD2 | Latvia (15) UQ2 |
| Bulgaria (20) (9B3) LZ | Guinea, Spanish (35) EA0 | Niue (32) ZK2 | Estonia (15) UR2 |
| Burma (26) XZ | Haiti (8) HH | Norfolk Island (32) VK9 | Spain (14) EA |
| Cameroon, French (36) FE | Hawaiian Islands (31) KH6 | Norway (14) LA, LB | Sumatra (28) PK4 |
| Canada (2, 3, 4, 5) VE, VO | Heard Island (39) VK1 | Nyasaland (37) ZD6 | Svalbard (Spitzbergen) (40) LA, LB |
| Canal Zone (7) KZ5 | Honduras (7) HR | Oman, Sultanate (21) VS9 | Swan Island (7) KS4 |
| Canary Islands (33) EA8 | Honduras, British (7) VP1 | Oman, Trucial (21) VS9, MP4H | Swaziland (38) ZS7 |
| Cape Verde Is. (35) CR4 | Hong Kong (24) VS6 | Pakistan (22) AP | Sweden (14) SL, SM |
| Caroline Islands (27) KC6 | Hungary (15) HA | Palau (Pelew) Is. (27) KC6 | Switzerland (14) HB |
| Cayman Islands (8) VP5 | Iceland (40) TF | Palestine (20) ZC6, ZC8 | Syria (20) YK |
| Celebes & Molucca Is. (28) PK6 | Ifni (33) EA9 | Panama (7) HP | Tanganyika Ter. (37) VQ3 |
| Ceylon (22) 4S7, VS7 | India (22) VU | Papua Territory (28) VK9 | Tanger Zone (33) EK, KT1, CN2 |
| Chagos Islands (39) VQ8 | Iran (21) EP, EQ | Paraguay (11) ZP | Tannu Tuva Rep. (23) UA0 |
| Channel Islands (14) GC | Iraq (21) (MD6) YI | Peru (10) OA | Tibet (23) AC4 |
| Chile (12) CE | Ireland, Northern (14) GI | Philippine Islands (27) DU | Timor Portugese (28) CR10 |
| China (23, 24) C | Isle of Man (14) GD | Pitcairn Island (32) VR6 | Togoland, French (35) FD |
| Christmas Is. (29) ZC3 | Israel (20) 4X4 | Poland (15) SP | Tokelau (Union) Is. (31) |
| Clipperton Is. (7) FO7 | Italy (15) I | Portugal (14) CT1 | Tonga (Friend.) Is (32) VR5 |
| Cocos Island (7) TI9 | Jamaica (8) VP5 | Principe and Sao Thome Is. (36) CR5 | Transjordan (20) ZC1, JY |
| Cocos Islands (29) VK1, ZC2 | Jan Mayen Is. (40) LA, LB | Puerto Rico (8) KP4 | Trieste (15) AG2, MF2 |
| Colombia (9) HK | Japan (25) KA, JA | Qatar (21) MP4Q | Trinidad & Tobago (9) VP4 |
| Comoro Islands (39) FB8 | Jarvis and Palmyra Is. (31) KP6 | Reunion Island (39) FR7 | Tristan da Cunha and Gough Is. (38) ZD9 |
| Cook Islands (32) ZK1 | Java (28) PK | Rhodesia, North. (36) VQ2 | Tunisia (33) (FT) 3V8 |
| Corsica (15) FC | Johnston Island (31) KJ6 | Rhodesia, South. (38) ZE | Turkey (20) TA |
| Costa Rica (7) TI | Kenya (37) VQ4 | Rio de Oro (33) EA9 | Turks & Caicos Is. (8) VP5 |
| Crete (20) SV | Kerguelon Is. (39) FB8 | Rumania (20) YO | Uganda (37) VQ5 |
| Cuba (8) CM, CO | Korea (25) HL | Ryukyu Is. (Okin.) (25) KR6 | Union of S. Africa (38) ZS |
| Cyprus (20) (MD7) ZC4 | Kuwait (21) (VT1) MP4K | Saarland (15) 9S4 | United States of America (3, 4, 5) WN, K, W |
| Czechoslovakia (15) OK | Laccadive Is. (22) VU4 | St. Helena (36) ZD7 | Uruguay (13) CX |
| Denmark (14) OZ | Lebanon (20) OD5, AR8 | St. Paul & New Amsterdam Is. (39) FB8 | Vatican City State (15) HV |
| Dodecanese Is. (Rhodes) (20) SV5 | Leeward Is. (8) VP2 | Salvador (7) YS | Venezuela (9) YV |
| Dominican Republic (8) HI | Liberia (35) EL | Samoa, American (32) KS6 | Virgin Islands (8) KV4 |
| Easter Island (12) CE0 | Libya (34) 5A1, 5A2, 5A3, (MCI, MD1, MD2, MT2) | Samoa, Western (32) ZM | Wake Island (31) KW6 |
| Ecuador (10) HC | | San Andres and Providencia Archipelego | Wales (14) GW |
| | | San Marino (15) (M1) | Wallis Island (32) FW8 |
| | | Sarawak (28) VS4 | Windward Is. (8, 9) VP2 |
| | | Sardinia (15) IS | Wrangel Island (19) |
| | | | Yemen (21) (4W) |
| | | | Yugoslavia (15) YT, YU |
| | | | Zanzibar (37) VQ1 |

FIFTY MEGACYCLES AND ABOVE

AUSTRALIAN V.H.F. RECORDS

50 Mc. FROM MACQUARIE ISLAND

Macquarie Island boys will be taking six metre gear with them. Look for them on 50.94 Mc. Operation is expected to commence early in January.

NEW SOUTH WALES

The November meeting of the V.h.f. Group was again well attended. The lecture for the evening was given by Mr. Vic Cole, VK2VL, who at very short notice replaced Mr. Phill Phillips who became ill within hours of the lecture. Vic's lecture followed his previous one on condenser manufacturing problems. This time dealing with the design, manufacturing techniques and testing of electrolytic capacitors. Many interesting points were discussed and those present learnt something of the problems associated with this very essential component.

The fixture for November was a hidden tx hunt held on Wednesday night, 3rd. Harry 2AJZ was the fox and is to be congratulated on his effort; the location was Caravan Head, on the southern bank of George's River and the starting place was Temple Park. To appreciate the difficulties in this hunt, you really want a map of the area as there were many hazards, the crossing of the river had to be made by going in the opposite direction to what the beam indicated, however he was located by Cliff 2LG within the hour, with 2HL and 2OA within 100 yards when time was up. Those taking part then homed on Ted 2XX's shack where a gathering of 31 partook of an excellent supper (it was rumoured that three days later, Ted was still washing up), and much discussion on the usual topics associated with v.h.f. activities including inspection of Ted's 50 ft. tower which we are very sorry to report has since been blown down in a very severe storm.

Another fixture which featured v.h.f. activity was the Annual Woy Woy "Do." Ted 2ABO, as guest of Lt. Commander Throm, took his 2 mx portable gear aboard a naval launch and braved his Trafalgar Day efforts by really going to sea. Operating under the call 2ANP, the official station of the Naval Radio Club, they proceeded up the coast to Broken Bay and thence to Woy Woy, maintaining 2 mx contact with portable stations proceeding by road and several home stations. The results were excellent and the venture was very successful.

There was also the usual hidden tx hunt. John 2ANF was the fox, the location was only three-quarters of a mile from Woy Woy, but required a trip of at least 15 miles. First in were 2ANU and 2AET in a dead-heat, followed by 2HL eight minutes later. Among those active on 144 Mc. during the day were 2ANP, 2AJZ, 2ANF, 2HL, 2ZW, 2CE, 2ANU, 2JX, 2AHA, 2AH, 2YR, who were accompanied by 2ABO, 2OA, 2ABZ, 2APQ, 2VU, 2AVK, 2YM, 2APX and 2PU.

On the technical side of the activities, interest is being shown in Skeleton Slot Antennae. Don 2NO has constructed stacked slots and is very pleased with the results, while Don 2FU is constructing a similar antenna. Details of this antenna were in a recent edition of "Wireless World." ZHO and 2APQ are constructing a three over three over three, spaced a full wave apart.

On 8th and 9th of January, Operation Rooftop is to take place from Mount Kogelako, when 2HO and 2APQ hope to work some long distances. VK3, VK5 and possibly VK6 and ZL are requested to keep a lookout for 2HO on 144.75 or 144.2 Mc. during that period. Several Sydney portables will also be operating in the field.

Activity on 50 Mc. is increasing with the advent of the Ross Hull Contest. VK4s and VK5s have made short appearances. At one period there were 20 stations operating in and around Sydney. These were 2XX, 2HO, 2HE, 2WJ, 2ANF, 2AH, 2AKK, 2AJE, 2BG, 2RU, 2AVK, 2AZN, 2ABH, 2ABR, 2HL, 2JH, 2AWZ, 2JU, 2APL, and 2ABZ. This should be a good indication of activity during the Contest. It is reported that 2WH has been working some DX 50 Mc. 2ANU and 2VU have been heard in Sydney working cross-band 50-144 Mc.

144 Mc. activity in the south western districts is good. 2AJO, 2KJ, 2BQ, 2ZAA and 2RS having good contacts. We also hear 2LH has been working VK4s.

Several new calls have been allocated and should be active on 144 Mc. shortly. Bill 2ZAB and Don 2ZAK are busy building gear and should be heard soon.

In accordance with usual practice, there will not be a meeting of the Group in January. The first meeting for 1955 will be the first Friday in February when we trust all will have recovered from the festive season.—2APQ.

VICTORIA

After some very stormy conditions, the weather was kind to the Fox Hunt for this month, most of the river bridges were open again after the floods of the previous evening and altogether made perfect weather for the hunt. On the first run into the northern suburbs, the fox car, 3LN, was successful in evading the hounds, but on the second run the 3YS-3ABA combination made the first catch and in fact they made four catches for the evening and were accused by some of the competitors of using a tow rope. 3ZAA and Norm Dench also made a catch on the second stop. On the third run, 3ALY was first, 3VZ second, and 3YS third. Two had trouble during the evening, Eric 3ADU spent much of his time under the car adjusting his brake cables, and Jack 3A1K found that the water had got into his generator, which succeeded in putting him off the air. Max 3BQ acted as control station and cross bearings were given by 3ZAC. We thank them both for their co-operation. The final location at Alf's (3IE) home was a secret one even from Alf. It was arranged with his wife and she managed to keep Alf out of the joke. However Alf eventually turned up to his own home equipped with his thermos flask and his little tin of cakes, much to the amusement of the others. Many thanks Alf and Ethel for your friendly hospitality.

The 6 mx band has started to open up for the summer DX season and on Thursday, 11th November, at 1830 hours, 3ATN, of Birchlip, worked VK6LC, also 3TA and 3RR, of Horsham, report hearing signals on 6 and 2 mx from three States. 3TA also reports hearing the Melbourne and Adelaide 90 megacycle frequency modulation stations regularly.

At the V.h.f. Group meeting it was arranged to hold the first Field Day for 1955 on 23rd January and the second Field Day on the same day as the National Field Day. Further particulars will be published when this date comes to hand. Berry 3APB gave a very interesting discussion on the workings and history of the VK2 V.h.f. Group and the members showed their interest and appreciation in his lecture by keeping Berry busy answering their numerous questions. As Herb 3JO was absent, 3YS took the chair and passed a hearty vote of thanks to Berry. The meeting concluded with a lecture by Len 3LN on a push-pull converter, using 6J6s throughout. All coils were gold plated and the whole constructed on a piece of 3/16 inch thick channel aluminium.

Very bad weather caused the curtailment of Field Day activity. Only three portables braved the elements, 3VZ going to Arthur's Seat, 3LN going to Mt. Bullengook, and 3IE who went to Beckett's Park. 3VZ was kept very busy during the afternoon and made many contacts with Melbourne, but was unsuccessful in the direction of Tasmania. We are hoping for better weather for the first Field Day of the New Year.

On the DX session from 8 till 9 each Thursday evening, 3BQ had another first when he worked 3AKR and 3AGD. 3ANQ broke through several evenings and 3BQ has made a QSO each time. 3ZAA made Eric 3ANQ's first contact with a Z call.

The V.h.f. Group was well represented at the State Convention at Ballarat when 22 of the gang were in attendance. Six were equipped with mobile gear and really enjoyed the working of mobile on the way up to the Convention. On the return journey, 3ZAA, 3VZ and 3LN worked mobile at very close range so that they were able to tune the super-regen. rx's out of regeneration. This gave a particularly noise free copy and not a single word was lost on the whole way home, in fact due to technical arguments, the whole journey passed very quickly. In the Pentland Hills, together with 3ALY, they stopped and worked several of the Melbourne stations at good strength. Max 3BQ reported hearing 3LN's tone signal during the afternoon entertainment at the Botanical Gardens near Lake Wendouree. He also heard other unidentified carriers from the Ballarat area. 3ALW was portable at Black Hill just outside Ballarat for most of the afternoon and worked all of the mobiles and 3ZL.

SOUTH AUSTRALIA

The 6 mx band has been open this month of November to VK2, VK4 and VK6, and the usual DXers were well on the air. 5MK, 5MT, 5JO, 5ON and 5RO were among the first to contact VK6s in Albany and Perth. Clem 5GL has been carrying out mobile tests with his "sea-power" 8 mx portable and except for one or two shadows when near Uralda in the Adelaide Hills, he was copied at good strength throughout the journey.

Les 5AX, at Gawler, has fired up a couple of those co-axial line osc. for 576 Mc. working and he is valiantly enticing 5EF to drink of

TWO-WAY WORK

| Band Mc. | Stations | Date | World Rec'd |
|----------|-------------------|----------|-------------|
| 50 | VK5KL-WTACS/KH6 | 26/8/47 | 5355 10500 |
| | VK3IM-VR2CB | 30/12/53 | 2405 |
| | VKT8Q/LZ-VK0DB | | 2211 |
| 144 | VK3GM/3-VK7LZ/PF | 9/3/52 | 317 1400 |
| 288 | VK3AFJ/3-VK3AAF/3 | 21/3/54 | 63.8 |
| 576 | VK3ANW-VK3AKE | 11/12/49 | 81.6 |
| 1215 | | | 100 |
| 2300 | VK3ANW-VK3XA | 18/2/50 | 9.1 150 |
| 5650 | | | 109 |
| 10000 | | | 800 ft. |
| 21000 | | | |
| 30000 | | | |

It is in the interests of all v.h.f. enthusiasts to notify F.E. through Divisions, if you can better the above figures. Please give exact details of both stations' locations for checking, when submitting your records.

the exhilarating waters. A couple of 6 el. Yagi's for 576 Mc. has been the result so far and it seems to be a toss up whether the 576 Mc. link gets going before the 50-144 Mc. one. He already has a 6 mx converter with which he works Les cross-band break-in (sounds like h.f./v.h.f. to me—what shall we do about reporting that one Warwick?) and has promised to get busy on a 2 mx tx which I presume he will have finished by the time these notes are read! Les is beaming a 100 watts from a 4E27 towards Adelaide each Wednesday night on 50 Mc. Is that d.c. input or r.f. output? Les' Cross band to 2 mx with 5MT and 5RO is no trouble at all. The line-up in the tx, which is v.f.o. controlled, is EF50, 6AG7, 6BW6 and final 4E27; all steamed up ready for the Ross Hull Contest. Did you hear that the Contest Committee had the trophy? It's a very fine piece of work and, in spite of the many frustrating delays, Federal Executive has done a fine job of work in designing it.

Some interesting news for the DX hounds concerns the KR6 Amateurs on Eyukyu Island, who report that their 6 mx beams will be firing south during the coming months.

All the best to the household for 1955.—5XU.

WESTERN AUSTRALIA

50 Mc.: Our "old faithful" v.h.f. band duly provided a series of DX openings during November. 5MK, 5JO, and 5ON broke through to Perth on the 12th for the first signals heard outside of VK6 since early February. I believe 6LC in Kalgoorlie and 6WG in Albany were in amongst them during the afternoon as well. Since then the band has opened once or twice, but conditions had not, up to the time of writing, produced signals like last year's openings.

One item of extreme interest, however, is the reported reception of two VK6 stations by VR2CG during the afternoon of 13th November. Unfortunately call signs were not copied and times do not seem to be available, so everybody has been kept guessing as to who it was! The band was open to VK4BT from 1300-1400 EST on this day, which certainly ties in.

In a contact with VS2C/ZUW/ZEB, the information was gleamed that there is NO VS2 activity on 50 Mc. at the moment, contrary to previous reports.

One item of news just to hand prompts a little sober thought by the 50 Mc. gang—the proposed Television Channels for Sydney and Melbourne lie in the 49-70 Mc. band.

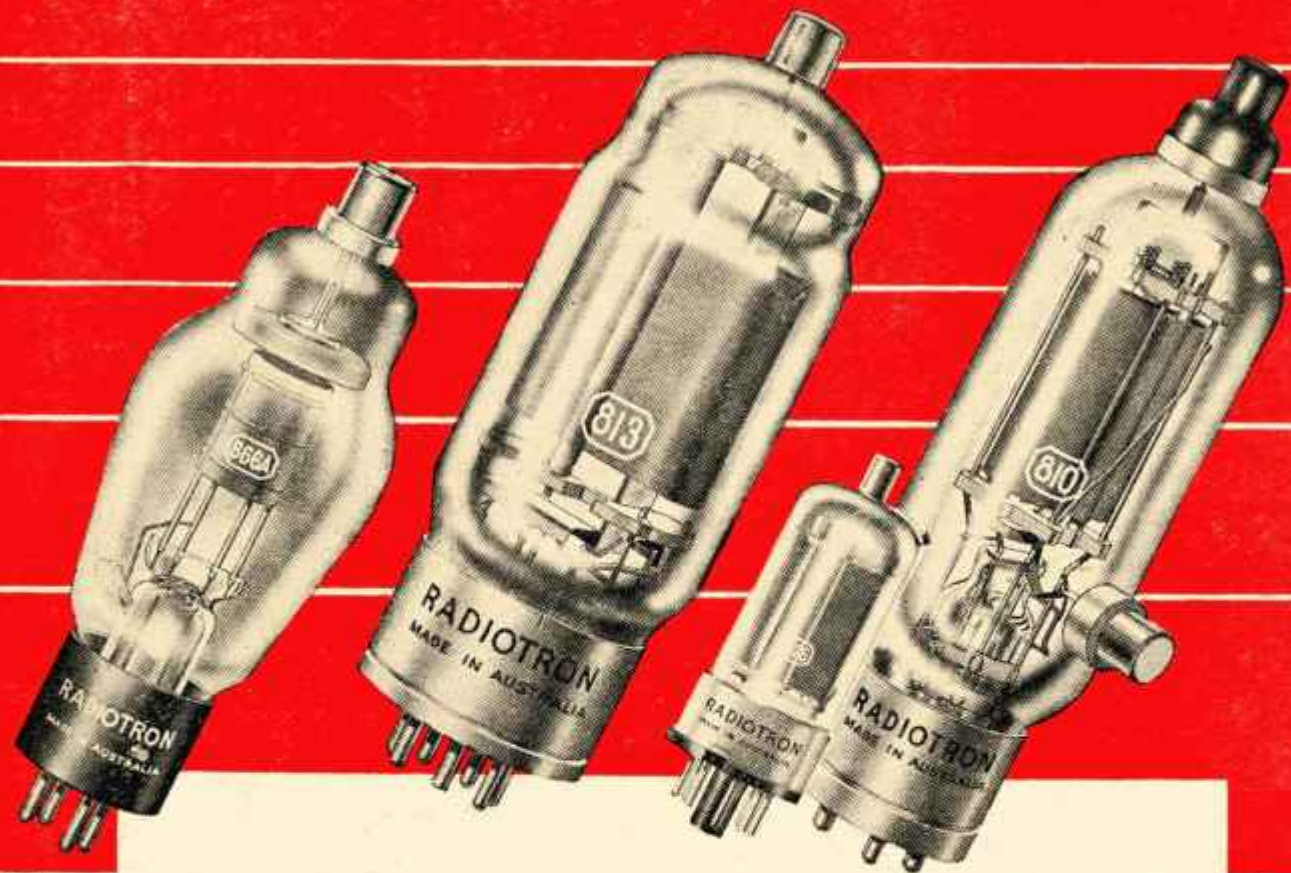
144 Mc.: During November quite a flock of Z calls hit the two mx band. First of the new batch was Lionel 6ZAE from Kalamunda with a spanking signal from a 2E26 and v.h.f. rhombic beamed on the metropolitan area. Len 6ZAT and Don 6ZAK followed soon afterwards with modulated oscillators. However, a spot of concentrated labour on the crystal controlled rigs soon produced stabilised signals from both; low power at present, but the "full gallon" to follow. Rumour has it that Lionel has a QQE06/40 on the stocks, so that should reach the grids of a few rx's before long.

Quite a few of the gang were successful at the last A.O.C.P. exam and it was very pleasing to note that Associate Don Brown was well to the fore. Be hearing you before long DM!

Quite a silence from the two before calls on 144 Mc. of late. 6AG has not been in evidence of a Sunday evening and only heard briefly on Sunday mornings; checking the news relay with 6HK. 6JT is still presumably on his Departmental travels, as was 6AW, but Denis should be well back in action by this. Tests with Don 6DW (120 miles) were once again successful, but QSB proves very deep and rapid. I wonder what that path to Bruce Rock would be like if the Darling Scarp (approx. 1500 ft.) wasn't in the way?—6HK.

(Continued on Page 13)

RADIOTRON POWER VALVES



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SHORT WAVE LISTENERS' SECTION*

Hello chaps! Well things are looking up. As you all know by now, last month's issue of "A.R." proved a big surprise. S.w.l.'s. have been allotted a section of the magazine for their own use. To hold this section, we must prove to the Editor that the s.w.l. can make itself into an essential cog in the wheel of Amateur Radio and assist in accurate reports of Amateur transmissions throughout the world.

To keep this page on its feet, we must receive from s.w.l.'s. anywhere throughout VK land regular monthly reports of your activities. If you have any ideas which would assist other fellow s.w.l.'s., then send them along to me. If possible we will publish each month besides the report of monthly meetings and band activities. Hints and Ideas that we think would assist you in your hobby. So chaps, how about it, you are the pioneers in this new section of the Wireless Institute of Australia.

VK3 S.W.L. MEETING

The members of the VK3 Division S.w.l. Group met in the club rooms, 191 Queen Street, at 2015 EST. Among those present were Len Poynter, President, and Secretary Gerrard Lane and Arthur 3AHD. After the reading of the minutes, we welcomed the following new members to the Group. They are Ian Woodman, Gramme Daw, David Tanner, and A. Harris. Welcome to the Group chaps, and I do hope that you will receive lots of happy hours with the gang.

Meeting Dates for the first term of 1955 will be at 3 p.m. as follows: January—Tuesday, 25th; February—Tuesday, 22nd; March—Tuesday, 29th. Keep these dates free. All new faces will be welcomed.

Believe that our friend, Dave Rankin, passed the limited A.O.C.P. with flying colours. Good luck Dave and hope to hear you on the air very soon.

S.W.L. CONTEST

Open To All S.w.l.'s. Throughout VK

Discussion also took place regarding our first Contest, which is to be held from 1st January. The Contest will take the following form: Contest time will be between 0001 GMT, 1st January, 1955, and will close at 2359 GMT on

* John Wilson, 37 Rayment St., Alphington, Vic.

30th March. Closing date for receipt of QSLs will be last mail to arrive on the day of 30th June. Results will be made available over 3WI on Sunday, 10th July at 1130 hours and will be published in "A.R." for the month of August.

There will be four sections in which you will be able to enter.

Section One.—Largest number of QSLs received from Amateur Stations throughout the world and dated between 1st January and 30th March, 1955.

Section Two.—Largest number of QSLs received on the Broadcast Short Wave bands between 3 and 30 Mc.

Section Three.—Largest number of QSLs received from Overseas Broadcast Stations operating between 550 and 1650 Kc.

Section Four.—Largest number of QSLs received from all Sections combined in the form of a grand total.

Awards will be given to the winners of each Section. QSLs may be in the form of cards or letters of verification.

The Contest is open to all S.w.l.'s. throughout Australia and overseas.

If you intend to enter, send your name and QTH to the Contest Committee (S.w.l. Group), W.I.A. Rooms, 191 Queen St., Melbourne, C.I.

NEWS ON THE AMATEUR BANDS

21 Mc.: News of this band over the past weeks proves quite good. From Frank Nolan and Jeff Morris, the following reports are to hand: KH6ZA, KH6AVH, KH6AVQ—all at S9 signals; W2JAC, M.A.R.S. stations heard were A13AO, A13AH, A14AA, A12AA plus many ZLs from S7 to S8 signals.

14 Mc.: Over the last few weeks 20 mx has been excellent between 1200 and 1500 GMT. Frank and Jeff heard: KA2RR, KA2AK, JA6CA, KA2NY, KA3AZ, KA7IM, KA2YA, KH6SL, KH6AQ, KH6AXH, KC6ZB, K1TAF, KR6AZ, KR6AF, KR6OU, KR6OC, KR6AQ, W0JYI, W0KOL, KA4IM, ZB6AT, ZM6AP, ZM6AR, VR2CM, VR2CW, VK1AC, VK1DY, VK1DJ, VK9HO, VK9FN, 4X4GB, 4X4DK, LU1DFG, OA3C, OA2A, OA5G, HC2JR, I1SM, I1YJ, I1CDH, I1BUA, CT1CL, CT1FY, OE13JM, G3BUU, GM8NM, GM9AA, FK8LL, YV5FV, CS3AC, KW6WB, CE3PV, CE2CC, CE3MJ, V56CZ, VR3A, VR2CM, VR2AS, VR2BZ.

VR2CY, VR2CX, VE7RR, W5YLL, W5ZFC, TI2GC, TI2CHV, TI2RC, FY2CK, FY1MK, PY6RU, XZ2SO, XZ2OM, ZC5VR, KJ6AZ, W5ZBL, W7VY, F08AC, 457YL, VQ6LG, VQ4AQ, VU2AK, VU2ES, VU2CY, KA4IM, From Gerrard Lane: ZL1CH, KH6SL, JA7KR, KA7JU, TI2RC, VK1AC, CX5AF, LU7FBF, W7IIS, KV4VV, VS1FE, JA2JW, KS7BC, From Gordon Hepburn, of VK2, KH6BY, G5L, KA2YA, 7JM, 21LM, 2NY, 7V, KR6AV, KG6RG, KV6AF, KT1WX, KH3PC, HC2JR, HP3FL, HR1BG, HC1LW, XE2KW, LU7HJ, 4DMG, TI2JV, 4JG, 2RMA, CT1CL, 4V4DK, YV5EU, I1BDV, 5A3TE, VS6RE, 6DL, VR2CY, 6DL, 2CM, 2CW, 2AS, 4DF, FK3AK, ZM6AT. At my location: VR3A, 5ATCF, VQ6LQ, 4X4VO, 4X4PK, VU2GM, 45TYL, G3FMD, HZ1AB, CT1SY, KT1WX, F9AE, F9EA, G2AG, 45TYL, YC5EC, VE3CM, VU2CQ, EA2CQ, VE7RR, CQ1CL, CN8SS, ZC5DR, OE13WD, ZS1SV.

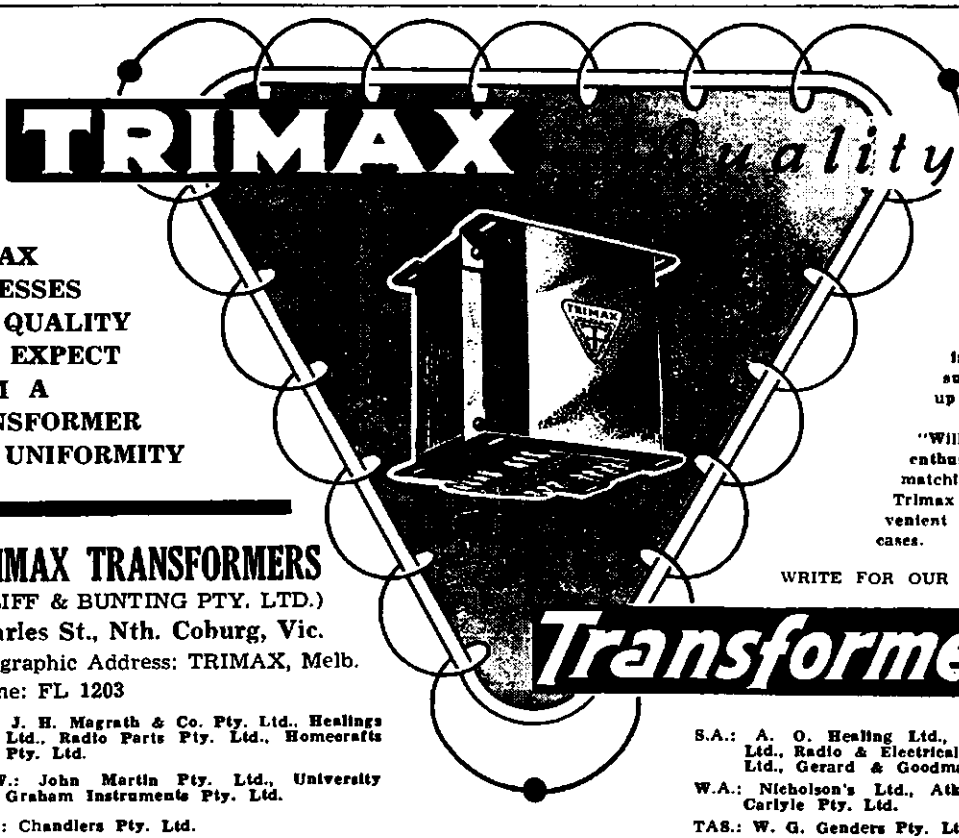
BROADCAST SHORT WAVE BANDS

From Gerrard Lane: Reported from U.S.A. that KCBR is operating on 6.40 Mc. with an S9 signal at 2100 hours EST. Radio Indonesia on 9.40 Mc. at 2125 EST. TCNA Guatemala on 9.675 Mc. with S9 at 2115 EST.

A new one is KN8H (V.O.A.) on 9.50 Mc. at 2000 with an S8 signal. Programme at this hour is in English. Radio Moscow is now operating on 9.615 and 11.77 Mc. between the hours of 2010-2030 EST. VLXA in Western Australia is now operating on 4.897 Mc. at 2145 with quite strong signals. KRCA (V.O.A.) on 6.05 Mc. at 2200 EST. A new one is YDF in Indonesia on 6.045 Mc. at 2200 with programme in English. Also from this same country, Radio Indonesia is on 5.010 and 4.810 Mc. at 2215 and 2240 respectively. Radio Australia's outlet VLGN on 17.840 Mc. is quite good at 2155 EST. GSV in Britain on 17.810 Mc. in the European Service of the BBC is heard at 2155 EST.

DZB2 in Manila on 3.32 Mc. at 2220 EST. This station has had QRN. It is heard R4-S6. WLWO, the Crosby Network, is heard on week days on 11.40 Mc. at 0745 EST at R5 S8. DX session is heard from 0715 on Sundays. Verification from this station is by card. OLRZB is heard week nights at 1645 EST on 11.750 Mc. at strength S7-8.

Once again the New Year is with us and I would like to take this opportunity to wish all s.w.l.'s. everywhere pleasant DX for 1955 and may you all be blessed with a very happy New Year. 73 to you all.—John Wilson.



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DX ACTIVITY BY VK3AHH†

PROPAGATION REPORT

3.5 Mc.: The only conditions observed on this band during the month of November were regular openings to North America (0740-1130z) and sporadic break-throughs from South America around 0800-0900z.

7 Mc.: The seasonal increase in noise was the only noticeable change of general conditions on this band—otherwise propagation conditions were again reasonably good. North America and the Pacific Islands were represented between 0700 and 1500z. Central and South America openings were reported between 0800z and 1300z. Europe was predominant between 1400z and 2100z and also, rather sporadically, around 0600-0800z together with North Africa.

14 Mc.: This band showed some regularity in its conditions to Europe, Africa, and South East Asia around 1100-1530z. Communication to North America was possible during sporadic break-throughs spread over the whole twenty-four hours of the day. South and Central American openings prevailed around 0830-1300z.

21 Mc.: Conditions were changeable and presented openings to many continents, but stations consistently operating on this band reported comparatively weak signals. European openings were reported between 0800z and 1230z. The American continents and Pacific Islands broke through between 2000z and 0400z, while the band opened to Africa around 0600-1000z.

27-28 Mc.: As was to be expected, short-skip conditions can now be mentioned. Overseas openings were those to the Pacific Islands, the Far East and North America, reported from Queensland.

NEWS AND NOTES

While the months December and January are periods of restful summer holidays for most people, they mean a maximum of work for those who are connected with preparations of the Australian Antarctic Expeditions. Each year, with the relief expeditions depart from the mainland with our best wishes for a good trip and a good time. It is our pleasant duty to greet those who return after their year's service as Australian representatives in the first line of the front of science.

Welcome home to the 1054 Macquarie Island team and particularly our fellow Bams: Chas VK1AC, Gordon VK1GA, and Dave VK1DJ!

May 1955 be an especially good year for VK1DC and VK1ZM on Macquarie Island and VK1RA and VK1AWI in Mawson, MacRobertson Land, Antarctica. Good luck and bon voyage!

The 1954 Mawson team, including Bill VK1EG and the Heard Island party (the last to stay there, see "A.R." 9/54), including George VK1DY and John VK1PG, will probably return around February-March, 1955.

By the time these notes reach you, VR2BZ/ZM7 will have been on Tokelau Island again (from W6YY and VKs 3AHC, 3AXP), and it is hoped that around December 11-12, '54, at least a few VKs are lucky!

With reference to Bob G2RO and his trips around the globe, the following itinerary has now come to hand (from VR2RO, VK3XO) for the period December, '54, to February, '55:—Departure from Solomon Islands (VR4), 7/12/54; departure from Sydney, 13/12/54; departure from Melbourne, 18/12/54; arrival on Cocos Island (ZC2), 20/1/55; arrival on Mauritius (VQ8), beginning of Feb., '55; arrival in Kenya (VQ4), 6/2/55; arrival in West-Africa, 12/2/55. Details about further movements will be published when they become available.

Activity in French-Guiana is shown by FY7YC (mainly on 21 Mc.) and FY7YE.

W0A1W intends to work from Guadeloupe, FG7-land, this summer (from SDXC bulletin). Also, a DXpedition to Cocos Island (T19) is planned by two Ws.

Frank HPSFL is again looking for VKs on 80 mx. Let's hope that someone is successful. Frank can be contacted for arrangement of skeds at his 40 mx sked time with Aussie 4TN on 710 Kc. at 1145z (on phone) (from 5WO).

A list of short wave broadcast frequencies, received from Chris VK7XW, was very much appreciated as contribution to our publication of a black list of non-Amateur stations in exclusive Amateur bands.

QTHS OF INTEREST:

OA2A—Box 51, Pacesmayo, Peru.
 C3AR—OARMA, APO 63, C/o. Postmaster, San Francisco, Calif., U.S.A.
 EA9DE—Via EA2CA.

† Hans J. Albrecht, 10 Belgravia Ave., Box Hill North, E.12, Vic.
 * Call signs and prefixes worked.
 z—zero time—G.M.T.

ACTIVITIES

3.6 Mc.: Chas IAC reports VKs, and here at 3AHH this is the log: W and LU3EL.

7 Mc.: IAC worked KL7PI*, JAs*, YU3BC*, KL7AY*, OZ2KL*, OZ1TX*, SM5BLO*, KG6*, KH6*, VE*, VR2*. Ivor 3XB QSOed HK17H*. Kevin 3AKR worked JAs* on phone, and Norm SALT heard HP3FL. Ken 7KM mentions KP4CC*, CN8*, FO8AK*, KC8, KM6*, VE*. Eric BERS198 heard CT1CF*, DL4RX, EA7EW, F8KA, HA5KBA, HB9AO, HB1MK/HE, IIARK, IT1AI, LZ1KSI, ST2NG (2015z), YU2CE, HB1IN/Air Mobile.

14 Mc. C.W.: IAC: VP8PV*, LU8EG*, VS2*, KV4*, OH*, VP8AA*, CX5CO*, KG6*, VK1PG*, YV5*, FY7AN*, SM*, VK1EG*, LU0EAB/MM*, JAs*, VP8BE*, VS6*, Noel 2AHH C3AR*, HB9*, ET3GB*, VQ3CF*, VSSKU*, ZS1C*, Jack 2JA: VQ6LQ*, KZ5*, ZM6AL*, ZS1JA*, VR2*, VS8*, MGAT*, OE*, DL*, VP8CJ*, FK8*, VK1PG*, Ken 3KR, VK1EG*, CX2BP*, CE0AD*, Lee 3XO: JA*, I*, VU*, FY7V*, VQ8KT*, VSSKU*, ET3S*, F1*, VR2*, CT3*, VK1EG*, ZK1*, PY*, SM*, DL*, VP8*, OH*, ON*, HB*, G*, ZB1*, VP8*, FA*, Lance 3ZA: SU1CN*, PY5ETG*, VQ6LQ*, VR2*, CP3CA*, DU7SV*, PA0*, GI4RY*, ON4*, MP4QA*, LZ1KSP*, HA5YSA*, 457NX*, F1BAF*, KV4*, VU*, VSSKU*, VY5DE*, ODL5L* and VP8AZ, VQ8CB, ZS, EA8AY, VQ4RF, PJ2AN, ST2NG, LUISE, LU8EN, FY7YB. Bob 4RW: HA5KB*, VSSKU*, John 5HI: CE0AD*, ZD2F6*, ZS3*, Ray 5BK: VR2*, F1BAZ*, JAs*, SP9KJ*, VQ4ENU*, DL*, KV4*, Austin 5WO: VQ6LQ*, 7KM: VS2*, VR2*, HB9*, LU4DMG*, DU7SV*, VS8*, JAs*, BERS198: CE3QW, CE0AD, CR9AF, CN8GU, CT3AB, DUISCS, ET2AB, FA3OA, FB8XX, FK8, FO8AC, HB9IX/MM, HZ1AB, HS1D, KX6, KZ5BD, KV4, KC8, LU4DMG, MP4BBL, OA4BN, PY2BB, SM8CWC, VK1EG, VK1DY, VK6KL, VP8AZ, VSSKU, VQ6LQ, VQ8CB, VY5DE, ZM6AL, ZM6AR, ZS, ZC3AC.

14 Mc. Phone: IAC: TIRC*, PY1MK*, PY4PI*, VP8AA*, PY4KL*, VS2*, LU3FA*, KA*, KR6OG*, HC1JR*, KL7*, KW6*, PY2AHS*, PY4CB*, CESMJ*, LU6AJ*, PY1NC*, VS1*, KR6OO*, 2AHH: G*, VS2*, VU*, F12BB*, VQ3RJB*, KR6*, VR3A*, LU8UE*, CE3PV*, LU3EQ*, VQ6LQ*, plus Europeans*. John 3HW: VQ6LQ*, Stan 8TE: CE3PV*, CT1FY*, DL*, EA*, ET2MZ*, F*, F18AO*, Gs*, G13HCG*, HB1MX*, HB9*, HK3CP*, HZ1AB*, KA*, KH6*, KR6OO*, LU8FP*, MQ4QA*, OE*, PA0*, P1, SUIHN*, SV1WO*, VE*, VS9GV*, KW8AA*, ZS2ST*, YV5BS*, VY5EU*, YV5FR*, ZB1CH*, ZF5CQ*, 457BR*, 4X4FV*, 5A2CL*, 5A3TF*, Neville 3ACN: CE3PV*, Gs*, EI2W*, KV4*, CN8MM*, OD5BA*, GM3DZB*, Y1ZAM*, GD2FRV*, PK2MM*, F*, HK3FV*, KR*, ZCSVR*, VU*, KA*, 457YL*, Don 3ADI: VQ5*, VQ6LQ*, 4RW: I*, Gs*, GM*, EA*, PY2CK*, CN8MM*, Ern 8EN: HB9*, ZCSVR*, OE*, 5HI: CE3PV*, CE3IT*, LU3EB*, YV5FK*, YV5EA*, YV5BS*, KP6AK*, KV4*, OA4CC*, OA2A*, HB9*, 5WO: VU*, I*, 457YL*, MP4BBL*, G*, DL*, 4X4DK*, GM*, 457LM*, VS9MM*, MP4QAH*, F12BB*, CR7AR*, EI5I*, EA*, F*, ET2TY*, 4X4C*, VQ4AQ*, OD5AB*, OD5BA*, HZ1AB*, HB9*, OE*, GD2FRV*, CN8MM*, MP4KAC*, YV5EU*, KV4*, CE3PV*, HP3FL*, OA2A*, BERS198: CN8MM*, CS3AC, ZM6, Jim Hunt: ZS3P, 5A3, ST2NG, CN8MM, VQ4AQ, VQ6LQ, VQ8AR, ET2, KT1, VQ8CB, C3AR, XE2KW, VP8BU, VY5EL, HP, PY2CK, Lus, and many Europeans.

21 Mc.: IAC: W4VU/MM*, 2ID: SM*, G*, GM*, GW*, Norm 2ALJ: W6*, KH6*, JA*, 457YL*, Percy 8PA on c.w.: HS1VR*, SM*, ON4*, KR6OH*, PA0*, DL*, F*, and AP2K, ODL5X, OK, HB9, FA8RW, KH6, VR2, and on phone W4VU/MM*, HC1FS*, VS1FE*, KR6ZB*, KW6BB*, KA*, W6* and HB9, GD, VS2, LU, CP5EC, CO8AB, 4X4FV, VR2, ZM6AR, T12RC, W3OZA/MM, W2JAC/MM, G, Alan 3YT: Ws*, KH6*, KA*, SM*, HS1*, ON4*, GW*, VS2*, G*, DL*, VS8*, PA0*, OH*, OD5*, VS1*, F*, KC6*, KC6*, DU7*, JA*, KJ6*, and ZM6, CTI, VU2, 457, OH, HCl, CE3, ZS1, VQ4, 3AKR: 457YL*, KR6*, Don 2ALJ: Ws*, 457YL*, Eric 4EL: HC1FS*, OH*, GM3DHD*, G*, DL*, SM*, F*, I*, FA8RJ*, CE3QJ*, DL*, ZC41P*, PA0*, GW3UO*, ZS8s*, HS1VR*, OA4ED*, CP5EK*, HC1MB*, HC1FS*, KW6BB*, KW6FS*, VR2*, FO8AB*, 457YL*, KL7SG*, KR6OH*, KC6ZB*, ZS5*, 4X4FB*, VU*, DU7SV*, VS1*, VS6*, KA/JA* and more than 50 Ws*. 4RW: W6*, KH6*, VS2*, HC1FS*, KR6OA*, GW*, G*, ZM6AS*, 457YL*, FO8AB*, PA0*, KW6*, KC6*, DL*, SM*, 8EN: W4VU/MM*, 5WO: VS1FE*, JA*, Jim Hunt: G, GM, DL/DJ, SV0WK/SV9, ZB1, CTI, OH, SM, 4X4BL, 457YL, VU, VSI, DU7SV, VS6, ZCS, T12, FO8, HC1FS, CE, VQ2DT, VQ4RF.

27-28 Mc.: Up in Queensland, 4EL worked KA2KS*, KA2KC*, JA1CJ*, KH6AV* and heard Ws. Good short skip conditions were reported by 2ALJ, 5HI and Jim Hunt.
 Rare QSLs arrived at 2AHH: VP1GG, OD5AB, VQ4EL, SKR: VK1EG, 5HI: T13JT, T15RA,

T12ACQ, MP4BAF, YV5EU, KG4AT, 5WO: OE13WD, HC1LW, HC1MB, BERS198: JA1CR (3.5 Mc.), Z1OKF, VE3DKJ (3.5 Mc.), VQ4AQ (7 Mc.), Y12AM, Y03RF, ZB2A, 5AHH: FJ2AJ (7 Mc.).

Thanks to the Southern California DX Club and their Bulletin, W8NTR, and VKs IAC, IZM, 2ID, 2AHH, 2ALJ, 3HW, 3JA, 3KR, 3PA, 3TE, 3XB, 3XO, 3YT, 3ZA, 3ACN, 3ADI, 3AHC, 3AKR, 3ALQ, 3ANT, 3AXP, 4EL, 4RW, 5EN, 5HI, 5RK, 5WO, 7KM, 7XW, and s.w.'s BERS 198 and Jim Hunt.

To you all, wherever you may be, a Happy and Prosperous New Year!

FIFTY MEGACYCLES & ABOVE

(Continued from Page 10)

TASMANIA

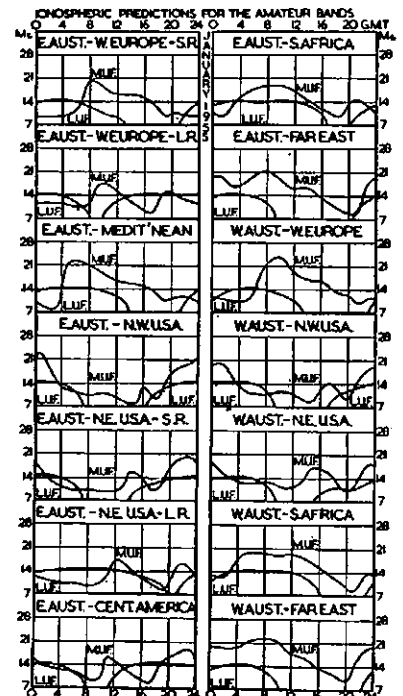
144 Mc.: Although we have no new developments to report this month, interest in the band is still increasing. 7DS, at Longford, has now procured for himself a tx and hopes to be on shortly. When operating, this station should supply the necessary link between Hobart and Launceston stations. 7LX in Launceston is also building a tx. Ken will bring the number of stations operating in Launceston to five.

7LE, who operated from Mt. Arthur recently, expects to make another visit to the mountain in the near future and there is also a possibility that Len will also be able to operate from Flinders Island. If time permits, Interstate stations will be advised of the itinerary.

50 Mc.: The first opening of the season heard here at 7LZ was on 18th November when 4BG was heard at 1910 hours; his signal fluctuated between S1 and S7 and was audible here for approximately two hours, however no contact was made. Our next opening occurred on 21st when VK4 stations were heard S9 at 1030 hours, unfortunately I had insufficient time to operate and when next I listened at 1225 hours, the band was full of ZL stations. 7LZ contacted ZL1NI, ZL1AGF, ZL2ABX, ZL2DS and ZL2KT, and 7BQ, after lining up his new xtal controlled converter, was able to QSO ZL2KT. VK4 stations again came through in the evening and good contacts were made. No other signals were heard until the evening of 26th, when VK2 and VK4 were contacted. Now with the opening of the Ross Hull Contest less than two hours away, we are still waiting to hear another sig.

7XW is now operating on this band on 51.6 Mc. Although Cris is at present only using a dipole antenna, he should be able to give some Interstate stations a new Tasmanian contact.—7LZ.

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| Cat. No. 582 | Single Section 60 pF. | 18/5 |
| Cat. No. 583 | Split-Stator 25 x 25 pF. | 16/11 |
| Cat. No. 584 | Butterfly 34 x 34 pF. | 17/11 |
| Cat. No. 585 | Single Section 100 pF. | 23/7 |
| Cat. No. 586 | Single Section 140 pF. | 24/7 |
| Cat. No. 587 | Butterfly 15 x 15 pF. | 20/6 |
| Cat. No. 588 | Single Section 27.5 pF. | 16/4 |
| Cat. No. 589 | Single Section 64 pF. | 18/5 |
| Cat. No. 738 | Single Section 100 pF. (double end plates, for use in Oscillators and V.F.O.'s) | 33/10 |
| Cat. No. 739 | Butterfly 8 x 8 pF. | 20/6 |

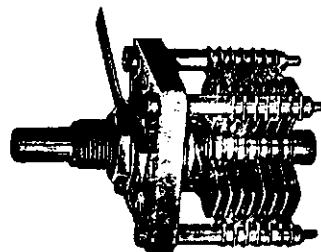
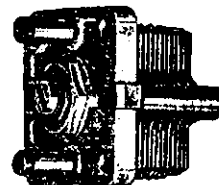
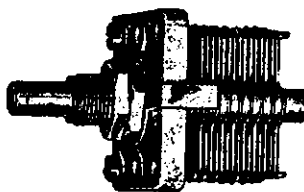
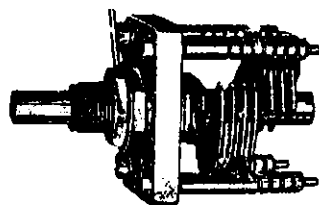
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FEDERAL SEASON'S GREETINGS

As the old year closes, and the new year opens, Federal Council and Federal Executive wish to offer Season's Greetings to all who are connected with the world of Amateur Radio both within the Institute and without.

The New Year is a time of looking both ways. Back at past achievements and forward to projected ones. In this regard it is appropriate to express special thanks to that staunch band of workers who make our Institute the success it is. The Magazine Committee, Federal Contest Committee, QSL Managers, Correspondents, Traffic Officers, and hosts of others play a very meaning part in the smooth running of a complex unit. Each and all deserve particular commendation.

Much has been accomplished during 1954 to make the radio hobby even more interesting. It is with confidence that the Wireless Institute of Australia awaits the developments of 1955.

T.V.I. BOOKS

With increased activity in planning for t.v., it is also significant that Amateurs should plan in order to avoid giving interference to this new medium.

Federal Executive has just landed a shipment of Remington Rand's latest book on t.v.i. This contains data invaluable in overcoming interference and is a splendid addition to the Amateur's technical library.

Those members desiring the latest edition are asked to send a letter to the Federal Secretary, enclosing 7d. in stamps, and a copy will be forwarded.

U.H.F.-V.H.F. DISTANCE RECORDS

In another section of the Magazine will be found the first of the v.h.f.-u.h.f. records.

These are in no way complete and as information is sent from Divisions, these will be amended. Members are requested to notify their Divisional Secretary of outstanding performances, in order that a complete State and Federal Listing may be prepared for a later issue of "A.R."

FED. CONTEST COMMITTEE

The Contest Committee met on the 23rd November at the residence of the Secretary, 5RR, and had the pleasure of unpacking the Ross Hull Trophy as the opening business of the night. All members of the Committee were most impressed with the trophy and were unanimous in the opinion that F.E. had certainly done a good job, and deserved all the good remarks that had been passed during the week when the trophy had been on display in the window of Gerard and Goodman in Bundle Street. It now goes without saying that this Committee endorses the section in the rules of the Ross Hull Memorial Contest that alludes to a trophy.

Correspondence produced several letters of interest, one being from the VK2 Division containing the number of licensed Amateurs in that Division for the purpose of the R.D. Contest, one from the Editor of the New Zealand magazine regarding the lateness of the information received by him in connection with the Ross Hull Contest, and one from Federal Executive. We were pleased to receive the letter from VK2, and we are taking the necessary steps to publicise the Ross Hull Contest so as to reach the maximum of ZL Amateurs in time for the Contest, and we left the letter from F.E. for consideration until later.

Certificates for all Contests in the past are now in the post and we would appreciate hearing from any Amateur who still is without a certificate for any Contest that he considers he is entitled to. Help us to help you in this regard, don't wing it, your fellow Amateur, wing it to us; we have been winged to by experts and we thrive on it.

It was agreed by the Committee that the four winners of the previous Ross Hull Contest Trophy should hold the trophy for a period of two months each and then return it to the Committee who would despatch it to the next winner for two months. When this period for the four winners has been completed, then the trophy will be ready for presentation to the 1954 winner, who will hold it for the full year as stated in the rules of the Contest.

It is unfortunate that each of the four winners cannot hold it for the full twelve months, but it is felt that they will understand the

difficulty and be only too pleased to co-operate with us. Incidentally, the four winners are 5QR, 5BC, 4KK and 6BO in that order. The trophy is to be photographed and then will be despatched immediately to Reg 5QR who, incidentally, is a member of the Contest Committee.

FEDERAL QSL BUREAU

RAY JONES, VK3EJ, MANAGER

Bill Storer, VK1EG, at Mawson, had knocked up 88 countries up to 3rd December. Bill is fed up with the tactics employed by Amateurs in a few countries. While he is QSO other stations, they keep calling repeatedly and if no QSO results, they commence long CQs on the frequency. Early in January most of the personnel are going up the fiord about 30 miles on the ice wall exploring. Roy VK4FJ, who is handling the QSL angle for Bill, reports that he is right up to date and all cards received have been answered by the same route as they came in, excepting those which arrived by air-mail without return airmail postage being included. These have gone out either surface mail or via Bureau.

VE3DKD, using 500 watts to a long wire, seeks VK contacts on 80 mx. The call sign is that of the R.C.A.F. at Camp Borden, Ontario. All contacts will be QSLed. Other stations on 80 mx seeking VK contacts are W2PEO, of Larchmont, N.Y., using a kw. to a pair of 304TH feeding an end fed long wire, and W9PNE, of Lancaster, Ill., using 200 watts to a 538 feet long wire fed at 133 feet.

Fred Sellens, ZL2MY, now 73 years old and of course retired, spends much time chasing contacts on 7 and 14 Mc. c.w., but he also welcomes VK contacts and requests direct QSLs to his new QTH at 4 Plymouth Street, Palmerston North.

Treb. BERS195 commences two months furlough from Xmas, 1954, and plans a motor tour of VK2 and VK4 for most of the period.

Geoff Warner has been allotted the call sign of VK2AVW, with QTH C/o. O.T.C. Radio Receiving Centre, Bringley, N.S.W. He is settling in well, but has tons of work on hand, so is giving Amateur Radio a miss for some time.

Frank Anear, VK9WZ (now F/Sgt., congrats), states he knocked back a southern posting, desiring to stay at Mornote for a little while longer. Frank would like to make DX C.C. before leaving, but says DX is poor and to date has only 52 confirmed and not many outstanding. That was in early November, so possibly by now is much nearer the century. He says they have a round up on 7080 Kc. each Sunday morning with eight stations taking part.

The J.A.R.L. advise of their decision to issue seven new certificates. All claims must be sent to the Overseas Committee, J.A.R.L., Box 377, Tokyo, accompanied by verifications by registered post. After checking they will be returned by registered mail with the award. All authorised bands may be used. C.w. or Phone is permissible. Contacts must be with Japanese nationals only and must date after July 30, '52.

Details of the transmitting awards are set out hereunder and the figures in parenthesis indicate the number of International reply coupons that must accompany the award. It is hoped that an agreement can be made with the W.I.A. so that a recommendation will be sufficient for the award(s) and thus avoid the postage and possible loss of cards. They are also planning an Asian DX award, details of which will be supplied at a later date.

A.J.D. (All Japan Districts)—Contact with one station in each of 10 JA call areas (10 I.R.C.).

W.A.J.A. (Worked All Japan Prefectures)—Contact with all of the 46 prefectures (10 I.R.C.) J.C.C. (Japan Century Cities)—Contact with 100 different cities. There are 380 cities in Japan (10 I.R.C.).

The remaining four awards are for listeners. (Details would be welcomed by s.w.'s.—Ed.)

SILENT KEY

It is with deep regret that we record the passing of:—

Alex. W. Kelly, VK5XO—November, 1954.

W. A. MacGregor, VK9MC.

NEW SOUTH WALES

The November meeting of the Wireless Institute of Australia (N.S.W. Div.) was held at the usual venue on 26/11/54, and in the absence of the President, the chair was ably taken by Vice-President, Bill 2YB, with Stan 2EL acting as Secretary. Visitors welcomed to our midst were W4VUU/MM, Ellsworth; Greg 2ANP, Cyril Ribbs, Bob Ridgley, ZL2AR, Lionel Dooland, and Harry 2AGU. Apologies were received from 2ACH, 2YC, 2AWQ, and 2ACD.

A very interesting lecture was delivered by VK2DD, John Rooks, who took as his subject "Communications as applied to the Sydney Department of Civil Aviation Telecommunication Centre," and he proceeded to illustrate the progress made in this field here in Australia and to outline the methods of operation at the major airports in this country, leaving all with the thought that Australian Radio Engineers have placed us at the peak of effi-

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MIC 36



£6/18/6

Housed in attractive plastic case, this Microphone is ideal for home recording and public address, etc. Response unexcelled for its size and price. The performance is not affected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s. Recommended load resistance not less than 1 megohm dependent on low frequency response. Can be supplied complete with switch and floor stand adaptor as required at a small extra cost.

This omni-directional Microphone is robust in construction, with a pleasing appearance. Vibration, shock or low frequency wind noise will not affect the performance. The low frequency cut-off is dependent on the load resistance. The cut-off is given by the quotation, $F = 80 \div R$, where $F =$ c.p.s., $R =$ megohms. An adaptor (floor mounting) is available at low extra cost.

MIC 22



£9/18/6

SPECIFICATION

Output level = -50 db ref. 1 volt/dyne/cm².
Output impedance—equivalent to approximately 0.002 uF. (0.8 megohm at 100 cycles).
Frequency response—substantially flat from 40 to 6000 c.p.s.
Recommended load resistance—not less than 1 megohm, dependent on low frequency response.

Designed to meet even the most exacting requirements, this Microphone incorporates the world famous floating crystal sound cell construction. Its special characteristics are that its fine performance is not affected by vibration or shock. The fidelity is not impaired by low frequency wind noise.

MIC 16

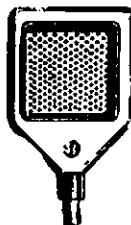


£24/19/6

SPECIFICATION

Recommended load resistance—not less than 1 megohm.
Output level -65 db ref. 1 volt/dyne/cm².
Frequency response—substantially flat from 30 c.p.s. to 10,000 c.p.s.
Directivity—non-directional.
Size—2½" spherical diameter.
Connector—Standard international 3-pin.

MIC 28



£5/19/6

Designed to give freedom of movement, this Microphone is small and non-directional. Housed in a soft moulded rubber case, which gives protection against shock, it is provided with a pin at the rear of the case for pinning to the lapel.

SPECIFICATION

Output level—approx. -55 db ref. 1 volt/dyne/cm².
Recommended load resistance—5 megohms.
Frequency response—level throughout the whole of the audible spectrum.
Capacity—0.0015 uF. at 1000 c.p.s.
Impedance—100,000 ohms at 1000 c.p.s.
Cord—6 ft. shielded cable.
Size—1-9/16" wide x 2¼" long x 1" thick.

MIC 35



£2/15/-

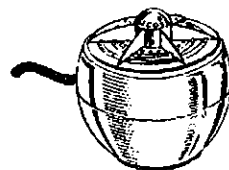
substantially flat response from 50 to 5000 c.p.s.

SPECIFICATION

Output level: -55 db ref. 1 volt/dyne/cm².
Cable—approx. 4 ft. of co-axial supplied.
Weight—6 ozs. unpacked, 7 ozs. packed.
Dimensions—microphone only 2¼" x 2¼" x 1"

This Microphone has been designed for the high quality public address and home recording field. High sensitivity and flat characteristics are obtained by a specially designed acoustic filter. Housed in an attractive plastic case with an unexcelled response for its size and price. Unaffected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s.

MIC 33



£6/18/6

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MIC 32 insert, £2/15/6; all others, £1/19/6.



(MIC 32 illustrated)

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(MIC 23 illustrated)

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gency in the methods of handling Aircraft Communication.

Following the lecture, a vote of thanks was tendered by Mr. Magee and the general appreciation of Mr. Rooks' efforts were shown in the usual manner.—2FA.

SYDNEY SUBURBS

There is plenty of activity on most bands at present, but conditions have not always been too kind. 2ABC is heard working the big time, VK3, on 21 Mc., but has found out it does not do so freely of others even up there. The congratulations of all go out to Alf, Ted's brother, on his success in the A.O.C.P. examination recently, and we all hope that he will be heard frequently now, good luck Alf. 2AGW works the G boys the long way round with gusto as in days of old; does it nicely the other way as well; do hear from Japanese Portuguese that Bert walks in his sleep, goes QRT at 11 p.m., but his echo lingers. hi! 2APT, 2FA, 2ACD still after DX, all beams appear to be working well, but Horrie in an effort to get out is rebuilding and at the same time decontaminating a v.f.o.

2AAB in between looking after the library is on 21 Mc. occasionally. 2AKV and 2AQH are heard again on 20 mx, but operation by the latter is also on 21 Mc. This looks like a good band with potentialities, must look into the matter. 2YI appears to be busy with shift work, while his cobber 2OQ is really going to town with the new beam. 2FM gets out nicely, has a new set-up now, shifted the tx since he got off the chain and visited 2APT. 2BF in other parts and meanwhile his YF Betty has been ill in hospital, but much improved at this date. 2JN also in hospital and it appears will be there many weeks; all wish you the best Jack. 2AVS gone on the big game fishing since the trip north with Greg; at least he did catch something.

The following notes sent by 2NO, who is still going strong. 2ASE is due to appear at any moment with a new rig for 2 mx, says his XYL goads him that everyone else is on so why not 2ASE? Ern listens around a fair bit in the meantime. Latest station to appear in this Eastern sector of the Metropolis seems to be Max 2GE who has nice phone on 20 mx. More 2 mx stations are needed in the coastal area, where we are "on the edge of beyond" and where the Westerners don't normally point their Yagis. 2NO has plans to break out on 21 Mc., but is steadily progressing with a 20w. rig to succeed the pip squeak at present in use on 144.85 Mc.

A letter to hand from ex-GSPO, Ted Ironmonger, Lieut. Comdr., tells of his now restricted Amateur activity. Ted is serving on that mighty battler, H.M.S. Vanguard, and has been hearing VK stations loudly on 21 Mc. Even though Vanguard's captain is an Amateur (GBIL), it simply isn't done to tune one of those QRO Naval tx on to Amateur bands and call CQ DX. Ted may be heard however in the near future from his home in Notting-hamshire.

A newcomer in the Bondi area soon to take the air is Ken Squires who has passed his A.O.C.P.; congrats old chap; he was aided on the c.w. by Andy 2AX to whom his thanks go. Does anyone know if 2XB is still interested in Amateur Radio? At one time, Tom's fist was a familiar signal on the c.w. DX bands from the Bondi area. Tom may be busy with plans connected with large sized c.r.o.'s.

Heard actively with 20 mx s.s.s.b., along with the other pioneers, is Vince 2VA; he pays 40 mx a visit occasionally, but mainly sticks to his brass pounding on 20 mx. There is something to the c.w. side of DX work which youths who sneer at smoke signals can never understand. The OT's grew up that way with radio as an infant and the kick is still there, despite congestion. 2VA's elevated location would be a cinch for 2 mx. Don 2PU is planning to use skeleton slots for a new 2 mx beam in his Rose Bay location. 2EM recently paid a visit to 2NO, but does not appear to be interested in 2 mx activity.

VK2 MEMBERS VISIT BALLARAT, VIC.

Hon. Secretary Harry 2ACH, Vice-President Charlie 2AWQ, President Jim 2YC and Vince 2VC attended the VK3 State Convention at Ballarat. Leaving Sydney at 4.30 p.m. on Friday, they breakfasted with the 2EU's at Albury, visited Don 2RS, and arrived at Ballarat at 1.30 p.m. on Saturday, after going by a "short cut" navigated by ex-Victorian Charlie 2AWQ. The rest of the team reckon they are the first party to traverse the route since the days of the very early explorers like Hume and Hovell, but Charlie insists the VK3s drive good cars along it.

Most enjoyable 24 hours was spent at the VK3 Convention where the VK2 Hon. Sec.,

2ACH, met his opposite numbers in VK3 and on F.E., and Charlie and Jim renewed old friendships, and everybody became up to date on W.I.A. affairs of VK2, VK3 and F.E. The type of Convention, the enthusiasm and the keenness of the debates on the items was a revelation to the visitors, while the organisation could not be surpassed. The hospitality to the VK2s was the "usual VK3 standard—Al and How!" Twenty-four hours, unfortunately, soon pass and it seemed no time before the N.S.W. representatives were being farewelled on their way home, leaving John 2AQF, of Deniliquin, to represent VK2 till the end of the Convention.

Neville 3ACN spoke of the good roads to, and the beauties of, Bendigo, so the Chev. was headed in that direction on its way back to Albury. At one stage, the President 2YC managed to get a glance at 2AWQ's jealously guarded map of Victoria and found he was west of Hay, in N.S.W., but was assured that "things were different" down in VK3 and we were "heading" for Albury alright.

Near Benalla a short developed in the ignition wiring and there was a period of very intense activity before leads were disconnected and smoke ceased pouring from underneath the bonnet. After supper at 2EU's, at Albury, which we did, strangely enough, reach, repairs were effected and was demonstrated how necessary it is, in addition to two driver/mechanics like 2ACH and 2AWQ, and a registered chemist to provide headache and hangover drafts and carsick tablets (2YC) to have an electrical contractor like Vince 2VC to repair the car wiring. Must have been done properly, too, as it hasn't broken down again—yet! Thanks to the two back seat "navigators" Harry and Charlie drove fairly well, even excellently at times—like the time one of them "got the chook." Wasn't he annoyed when the navigators refused time off to drive back and get it. The Hon. Sec.'s appetite added greatly to the expense, and it is agreed that 2YC work out a diet chart for him on our next trip.

Arrived home Monday at 11.30 a.m. for our 9 a.m. start, tired and happy—well, some happy, some not so happy. You see out near Camden, Charlie, coasting along at 50 odd, was passed by a beautiful blonde vision in a sky blue Spacemaster, and we never saw her or the car again. Harry feels strongly that is a reflection on "the old girl" as he terms the Chev., but Charlie points out that we did at once strike a long "30 mile an hour limit" zone and he holds that to a beautiful blonde, that's only "another man made law," perhaps!

SOUTH WESTERN ZONE

News is very scarce again this month, due I think to the QRN on 80 mx. New stations on the air this month in this zone are Andy 2WK and John 2ARD at Cooma; good to hear you chaps about. Ted 2AXD, at Griffith, getting more active now he has the sea power working OK. 2AJO and 2JK still keeping nightly skeds on 144 Mc. Stan 2AID, at Wagga, home after appendix op. I would like to wish all in the zone and also all those outside our zone all the very best of good cheer at Xmas and a bright and happy New Year, and hoping that 1955 will be as successful as was 1954.—2AJO.

HUNTER BRANCH

The November meeting of the Hunter Branch was held at 8 p.m. at the Tighes Hill Technical College on 12/11/54. Nineteen members were present to see the films shown, these being "By Design," "Morning Paper" and "R.A.A.F. Diary." After the general business of the meeting had been disposed of, a session entitled "Ask me another" was held. A panel of "experts," namely, Lionel 2CS, George 2AGD, and Harold 2AHA had been appointed to answer any questions on Amateur Radio asked by any member. The questions asked were mostly about crystal filters and beams. Harry 2AFA made a welcome appearance at the meeting. We would like to see you at the meetings more often Harry. Norm 2ANA has had a week in hospital, but is OK again now.

At the Woy Woy Field Day on 21/11/54, the Hunter Branch members turned up in force and again carried off a fair share of the prizes. Harold 2AHA won the Woy Woy Scramble; the Hidden Tx Hunt on 144 Mc. was found simultaneously by Ken 2ANU and 2AET; Mrs. Swain, XYL of 2CS, won a Tx, also the Push the Penny competition; Keith 2DG won the gent's prize for the lucky number; in the "Copying Morse through QRN" competition, Jim 2ZC was first, with Ken 2KG second; the "Pick the Valve" competition was won by Ken 2KG with Harold 2AHA second. Other Hunter Branch Amateurs and Associates sighted were 2AGD, 2ANA, 2AOR, 2AUH, 2XY, 2OT, 2XT, 2FP, Ray James, Bob Bailey, 2VU and 2SF.

For the January meeting of the Branch to be held on the 14th, at the Tighes Hill Technical

College, the lecturer will be Angus Robertson, and the title of his lecture will be "Some Fundamental Aspects of Aerials." The lecture for the February meeting is expected to be "Plotting the Wave Patterns of Aerials."

VICTORIA

The meeting of the VK3 Division was held on Wednesday, 1/12/54 at the usual location. Approximately 50 members plus their families were present. Various films were shown, this being considered the best form of entertainment for a family night. I wonder how many of the kiddies present had nightmares that night? Didn't sleep so well myself, but then I had a crayfish supper.

Very little official business was transacted, but even then things did not wind up till after 11 p.m. We did, however, admit a few new members including Messrs. Ardern, Ferguson, Hubal and Osborne as Associates, and 3APB as a full member. Welcome fellows. May we see you at the meetings in the future.

Whilst waiting for the show to start, an unidentified chap engaged me in conversation. Following my usual pattern, I was very watchful when he started asking awkward questions about my source of info on VK3 matters. Luckily for me that I didn't let anything slip as he turned out to be Brian 5CA. Mr. Parsons will never know how close to valuable info he came, nor how close my spies were to being shot at dawn. The meeting gave Brian a welcome as only VK3 can. Brian tells me he came to VK3 in search of a pair of 24Gs. A less charitable type could suspect that he was checking on the local lassies. If he was he'd only be following the fine example already set by you know whom.

The next A.O.C.P. class will commence on 4th February, so if any of your friends are interested in joining, tell them to contact the rooms before that date.

There will not be a meeting in January, as the Radio Theatre will be closed for the school holidays. The next meeting is scheduled for 5th February, but at the time of writing I have no indication of the agenda item.

By rights I should write up the Dinner, but as what I have heard from several who were there, least said is soonest mended. It was only indisposition that kept me away this year. From what I've heard, I'd like to see the effect of a vote of all members. Council will possibly rap my knuckles over this, but the spending of £18 on an Annual Dinner in which the majority of members obviously have no interest, appears hard to justify. After all, it is the members in general who are footing the bill, and their wishes should be ascertained.

From the grapevine I learn that the Convention was a howling success and I'm living in hopes that somebody will send me some notes on the event before the deadline for copy comes round. For the time being, we'll change the subject.

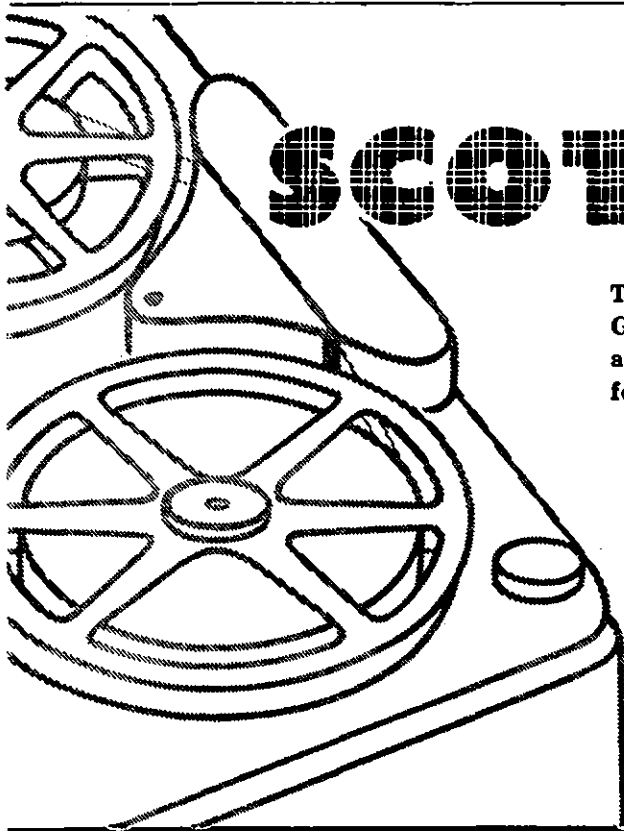
Not having been active for over a month, nor likely to be for another three or four months—not even listening—have practically no idea of what is going on apart from what I hear if I run into any of the lads round town (which is not very often). Would appreciate anybody passing on any gen they may happen onto. What about it Mrs. 3LN, or are you restricted to reporting for the V.h.f. Group? Your assistance last month was very much appreciated.

By the time this hits print, the festive season will be right on us. Possibly it is now a little late to wish everybody a Merry Xmas, but I'm in nice time to wish one and all a very Happy New Year. May it see an improvement in conditions on the bands and new distance records on the v.h.f. bands.

80 METRE TRANSMITTER HUNT

An 80 mx Tx Hunt was held on Sunday afternoon, 14th November, in very pleasant sunny weather. The tx, which was hidden on this occasion by Bob 3OJ, was located in some thick bushes down the bank of the Dandenong Creek out past Mt. Waverley, and was some 300 yards through fairly dense scrub from the roadway. It was quite a tricky one and it took the winners, Alf 3IE and Jack 3VZ, fifty-eight minutes to locate it. They were followed four minutes later by Eric 3ADU and Len 3LN. 18 minutes later was third, Berry 3APB and family newcomers to the hunts and an ex-VK2, experienced a little difficulty in finding their way over our Victorian roads and turned up with a very broad grin on their faces a trifle late, in fact they only just got there in time for tea and received a great hoy from the gang. Heather, Berry's XYL, said they had made up their minds they would find that tx even if it took them all night to do it.

Nearby the location of the hidden tx was a wide grassy opening on the banks of the Dandenong Creek and it made an ideal spot for a picnic. Fifty of the gang attended the



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Plus or minus 1 db 20-15,000 c.p.s.

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| Type 762—15 watts. Prim.: 5,000, 3,000 ohms P.P. Sec.: 15, 12.5, 8, 8.7 and 2 ohms. | Type 898—15 watts. Prim.: 10,000, 8,000 ohms P.P. Sec.: 15, 12.5, 8, 8.7 and 2 ohms. |
| Type 920—15 watts. Prim.: 5,000, 3,000 ohms P.P. Sec.: 500, 250, 166, 125, and 100 ohms. | Type 897—15 watts. Prim.: 10,000, 8,000 ohms P.P. Sec.: 500, 250, 166, 125, and 100 ohms. |

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hunt and it was very much enjoyed by all. The majority of them sat down to a picnic tea together, sitting on their car seats on the ground, they formed a huge circle which after tea turned into an S9 QSO, which could have gone on for hours but a sharp unexpected shower of rain broke up the party about half past six; however all agreed they had a most enjoyable outing and get together—Mrs. 3LN.

NORTH EASTERN ZONE

Syd 3CI is specialising in 2 mx antennae and he says beams get results. Alan SUI likes construction work and he is reported to be on a compact portable rig for six and two mx. Les SALE is down in the list of good scores in the R.D. Contest, along with Col 3WQ who was extra good; others were Keith JJC, Howard 3YV, Ken 3KR, Hugh 3AHF, Frank 3ZU and Peter 3AFP. It would be correct to draw attention here to Rex's (3UR) effort on that occasion, right up near the top.

George 3GD is reported as being interested in Radio as ever, while Tom 3TS had poles for the a.c. running past his property early in November. Doug 3IJ sailed for VK7 in the "Taroonna" on 1st Nov., but is not in the new call sign list yet, as is Jack 3AKC being down for an altered address. Des 3EP has now got on to the 20 mx DX with vee beams and some success.

A new member to make a welcome appearance on the November hook-up was Brian 3AF in Shepparton. Alex 3XT was reported just off 3700 Kc. recently, but nothing has been heard lately of Jim 3JK or Henry 3HP. The current heavy QRN on 80 mx would hardly be what is deterring Jack 3FF, as he has been "brought up tough" on 600 mx in the tropics. Stan 3AGT and Lex 3AIL have not been heard lately, neither has Johnny 3ACK. Chas 3ACW is heard of from time to time and his last civic appointment had "pro temp" after it; but no satisfactory way of regular contact with Des 3CO has been worked out yet.

Vic 3ABX has been missed and opportunity has not been taken to enquire after Ron 3AQQ, but a request by Murray's (3HZ) XYL for some holly was noted recently. Associate Jim at Miepoff was reported as a "ball of muscle" recently. Although this time there is nothing on Associates Vern and Clarry in Cobram.

The members of the North Eastern Zone wish all members of the W.I.A. and readers of the magazine a Happy and Prosperous New Year with interesting listening.

EASTERN ZONE

The November meeting was held at Balmsdale at the shack of Alan 3AFA. Films of interest were shown, but owing to two projector lamps giving up the ghost, we were not able to screen all those available. Apart from the Sunday night hook-up Amateur Radio seems to be in the doldrums around this neck of the woods. There seems to be a slump in enthusiasm these past few months. How about you fellows with Eddystones, SX28's, etc., chasing the wogs out of the rig and getting on the air?

Keith 3SS and Graham 3QZ were among those fortunate enough to visit Ballarat for the State Convention. Associate Bill Higgins of Heyfield, who missed out in the last A.O.C.P. exam., will most likely be a candidate for the January exam. It's about time Alf and Laurie had a shot at it too.

By the time this news appears, the December meeting will have been held at the ranch of Ossie 3AHK, as has been usual the past few years. Of the Sale boys, there is nil to report, not having been seen or heard for some time.

QUEENSLAND

November meeting was highlighted by a very fine lecture by Don 4GP on "Matching of Lines, Velocity Factor, Standing Waves, and Smith Calculator," very ably presented and interesting to all present. Many groans were heard when Don cut up a few feet of co-ax, but it was all in a good cause and all those present must have went home with a new approach to that ticklish job of matching.

Vince 4VJ gave us a fine film on whaling off Tangalooma, with all the necessary comments on a well presented and photographed colour film. One was impressed by the work involved in this industry off our coast. Vince must have put a lot of work into it, to correlate all the details he gave during the screening.

Amongst those there at the meeting, noticed a few faces we haven't seen for some time, namely 4HG, 4KO, 4SF from Ipswich, also 4KS from Brisbane. Visitors included Dean Johnstone, who ably supported Don 4GP with all his gear.

To those who know of any listener who may be interested in a listeners' section, it is proposed to hold a meeting during February with plans of setting up a section here in this Division.

OBITUARY

ALEX KELLY, VK6XO

Amateur circles in VK6 were shocked to read this month of the sudden and untimely death of Alex Kelly, VK6XO, at the age of 42 years. Educated at Saint Peters College, he early showed an interest in Amateur Radio and was first licensed in the year 1927 with the call sign of VK6AW. He will be remembered as one of the early operators of the West Suburban Radio Club and later from the country town of Lyndoch, where his c.w. activities on all bands placed him in the forefront of the Amateurs of that period. He served in the Signals Section of the Army with distinction in the Far East during World War II, and upon his return to VK he did not immediately renew his Amateur license owing to pressure of business. In 1952 he applied for his old call sign, but as it had been granted to the late Hal Austin, he was allotted the call sign of VK6XO.

He recently was appointed to the position of Manager of the Loxton Co-operative Winery and Distillery, and was supervising some welding on top of one of his Company's large vats of over proof spirit, when it exploded and threw him to the ground, 60 feet below, killing him instantaneously.

To his sorrowing wife and daughter we extend our deepest sympathy and understanding, and deplore the untimely passing of one of Nature's Gentlemen.

The Brisbane gang are investigating the possibilities of holding a display in the coming Industrial Fair next year, so would like all who have time on their hands, gear, or ideas, to come along to the next meeting, and see what can be done regarding it. This also applies to any ideas for the holding of an annual convention apart from our annual general meeting.

From the Ipswich area, the interest of the gang up there is gradually brightening, and they are all in their usual 20 mx hook-up again, that is when there is no DX about. The whole crowd was out in force one Saturday afternoon to give Leon 4FW a hand to erect a 2 el. 20 mx beam, which Leon had his doubts about, but after collecting a VQ6 and AP2, among many others, he hadn't heard before, maybe he isn't so doubtful. Harold 4HG is about most evenings getting among the DX with 15w, and makes the boys up there wonder how he does it. Norm is still promising to put on a 5 gallon when he gets his new tower up with that super 2 el. beam. I hope he lets me know when its going up, I'll give the orders and look after the keg. Merv. 4MW has been trying out all kinds of ideas on sky wires. Have you ever tried the bed mattress Merv.? Might be an idea on winter nights, hi! Jack 4SF has been taking things easy after his effort in the DX contests, but is still about when a new country bob up. Believe he is after the DX C.C. before Christmas, but there is no mention of what Christmas. Maybe he still believes in "Santa."

Well chaps, on behalf of the Council, I take this opportunity of wishing you and yours all the best for the year 1955, and hope it brings you what you wish yourself.

SOUTH AUSTRALIA

The monthly general meeting for November of the VK5 Division was held at the club rooms to a very representative gathering, and the guest speaker was the President of the Division, Gordon 5XU, who chose for his subject, "Transmitting Arrays." Due to a misprint in the local paper, the title of the lecture was given as "Transmitting Rays," and it goes without saying that lecturer took great pains to explain to his attentive audience that the said misprint was due to the fact that the VK5 Division had appointed a first-class Dill (5PS) as correspondent to the local paper and therefore the misprint was only to be expected. The audience loudly applauded, and I regret that I was not present at the start of the lecture to refute those remarks, because it would have given me great pleasure to tell all present just what they could go and do.

The Vice-President of the Division, John 5KX, was in the chair for the evening and introduced the lecturer with a few well chosen remarks. In VK5 we have come to associate many of our lecturers with their subject, as for example, Clem 5GL with crystals, Gordon 5XU with aeriels, etc., Jack 3JD with v.h.f., and Warwick 5PS with helifer dust, etc. Bearing this in mind, it goes without saying that the lecture for the night was an outstanding success and was enjoyed by all present.

Gordon, being a science master at the local Prince Alfred College, it naturally follows that he knows all the tricks about getting his audience interested right from the start and holding that interest until the end of the lecture. He never talks down to the listener, but always manages to discuss his subject from the angle of the ordinary Amateur and spares no effort to explain even the smallest detail if he considers it at all necessary to force home his point. The lecture on the arrays was given in two parts, the first part being a theoretical description of v.h.f. aeriels, both verbally and on the blackboard, including reflectors, directors, etc., and then part two consisted of a practical demonstration using a dipole on 144 Mc., and the effects of adding reflectors and directors, ad infinitum, whilst viewing the practical result on a microphone at one end of the lecture table. The "oohs" and "aahs" that greeted the increase in meter readings as the various elements of the demonstrating array were added or taken away, must have sounded like music to the ears of the lecturer, because it was an entirely spontaneous indication of the success of the practical side of the lecture.

The more I see of these experts in the field of lecturing, the more I realise that the successful ingredients of their lecture are to be found in the practical demonstrations which they always use as the "piece de resistance," and there is no doubt about it, visual education is the outstanding form of education. The vote of thanks to the lecturer, ably proposed by Tom 5TL, was enthusiastically received by all present, and if I might add my humble opinion, this type of lecture is just what the doctor ordered and will do more to keep up the attendance at the monthly meetings, than dozens of solid theoretical lectures unsupported by practical demonstrations.

Very little general business was handled at the meeting and aside from reminding members of the coming Xmas "Get-together" and the annual picnic in January, the chairman was not over-exerted. The question of a proposed 10 mx contest was discussed, but the opinion was so luke-warm in view of prevailing conditions and lack of any interest in the band at the moment, that no support was forthcoming from the members present. A letter was read by the Secretary, Reg 5RR, from the VK6 Division, which congratulated the VK5 Division on winning the R.D. Contest, and when it is remembered that the VK6 Division was the runner-up in the Contest, then it goes without saying that the gesture was much appreciated by the members present, and as I have said before, will further strengthen the cordial relations existing between the two Divisions. VK6, we salute you. May we be as good a loser as you, when it is our turn.

Among the welcome visitors were the two sons of John 5UL, R. S. Hambridge (2RH), Tom 5TL, Len 5OC, and Mr. Cuffing. To these gentlemen we say the usual "pleased to see you all," and we hope that you enjoyed the evening. Come again sometime, we will be pleased to see you all. The meeting closed at the hour of 10.30 p.m., and when I left it was well past that time, but there were several unofficial meetings being conducted in several parts of the room, and for all I know they will still be there next meeting night when we go to open up the rooms!

It was good to see Tom 5TL and Len 5OC at the meeting. Tom was down from Renmark for a couple of weeks before he leaves for Alice Springs, and Len is now permanently domiciled in the city after a time at Woomera. Keep your ears open fellows for Tom when he gets up to Alice, he operates on most bands aside from conducting the morse code class on one night a week.

How unlucky can one be? I have been lucky enough to dodge planting a lawn in the front of my QTH for some time now, and was beginning to think that all the hard work associated with such a project was still in the dim future. However, I had a contact with Launce 5LD the other night, and the first question that he asked me was as to how my new lawn is coming along? My XYL was in the shack, and need I say more? I am now reduced to the merest shadow of my former self, and if it were not for the fact that Launce publicly stated over the air that he had nothing but admiration for the writer of these notes (and Doc heard it, too), I would strike his name off my little red book. I could almost hear Doc grinding his teeth, or should it be tooth, when you passed that remark, Launce. Nevertheless, I will bet that you say that to all the journalists that you meet!

I had a chat on the telephone the other day with Uncle Vic. (ex-West Suburban Radio Club), who is without doubt the grand old man of Amateur Radio in VK6. Confined to his bed for more years than I care to remember, he has never lost his inherent cheerfulness, nor his deep interest in Amateur Radio, although for reasons best known to the authorities, he is no longer heard on the air, but

spends all his time listening to the activities of the Amateurs throughout the world. His name was synonymous with broadcasting on the 200 mx band in the old days and it is remarkable the number of people who still say, "What has become of Uncle Vic, does he still broadcast?" I can say without hesitation that Amateur Radio and his indomitable spirit has kept Vic going through all the years of suffering and confinement in his sickroom, and I would strongly advise any Amateur who feels that his own particular lot is not all it should be, to give Uncle Vic a ring on the phone one day and see just how tough life can really be to some people. We salute you Vic, "Everybody Happy!"

WOOMERA RADIO CLUB

The monthly meeting of the Woomera Club was held to a capacity gathering of members, and after the usual business was disposed of, a discussion on the club's equipment was held. Arising from this discussion, it was decided to revert to the original circuitry of the tx which will facilitate its operation. The antenna tuning unit will be built on the wall and will be thus available for use with any other tx's that may be built, and it was also decided to purchase a BC221 type frequency meter which would be available to the members for lining up their own equipment. Last, but not least, the rx is to be thoroughly overhauled and trimmed up, and just in case they have too much spare time and nothing to do with it, they will also pull down the beam in the near future because it was somewhat bent in the gale that swept through the town recently. Special mention was also made at the meeting to the many pleasant contacts that members have had with the Adelaide boys each Sunday, and also how these contacts are looked forward to by all the operators of 5WC. The Season's Greetings were extended to all Amateurs of the Club, and also that 1955 will see a repeat of the pleasant contacts of 1954.

5FF is using a small tx with Clamp tube modulation and is putting out a signal from it that has to be heard to be believed, in fact Ray says that it is almost as good as the big tx, which speaks for itself. Apparently all of the available pieces of wood have been devoured by the infernal machine, because a terrific burst of activity is at present noticeable from Ray's shack. 5FY is busy working on a QRP rig for use down South in the Xmas break, and if all that Ron tells me is correct, I will have to put a fuse in my antenna in case his signal from this rig tangles with it.

John Guyas is now in possession of his limited certificate and is pressing on with his "See-Wubbleyou" in order to get his full certificate. Nice work John, hurry up with that c.w., then you will be one of my mob! Ted ex-5JE may be coming good again after a fair spell, and it is hoped so. I believe that he was down in the city recently, but I did not see him and can only quote gossip.

The transmissions of 5WI on 40 mx are received up at Woomera at extra good strength and also the re-broadcast on 80 mx is peaking to S9. Another signal that makes the 5WC shack shudder at times is that of 5EF from Gawler. 5AX used to be heard from Gawler at the same shuddering strength, but he has probably hibernated up in his 8 mx beam and won't be heard for some time yet.

Just to prove that I am on the air on 40 mx, I have been keeping an ear open for 5WC myself, but as yet nary a signal have I heard. It is possible that I am listening at the wrong times, but I don't think so. It would give me great pleasure to put one of these so-called shuddering signals into Woomera, and dally give my 5w rig a pep talk in this regard. Strap everything down Ron, you never can tell with me.

SOUTH EAST AREAS

5CH is still building, but the shack is now almost completed and there should be a lot more activity from Claude in the near future. He is still keeping his 2 mx skeeds with the boys, but of course that is of no interest to me and is only included in my notes to annoy the v.h.f. scribe. 5TW is another one who is heard on 2 mx occasionally, but from all reports to hand, Tom has been fairly busy keeping the wolf from the door and has not had much time for Amateur Radio. 5FD is fast earning the reputation of 5JA, but as John is a keen member, present at the monthly meetings without fail, he cannot as yet share the position proudly held by the other John. After all, he must still have his share of interest to attend the meetings.

5JA, so my typewriter automatically prints, still has nothing to report. I still include John in these notes each month in the hope that I will eventually wear him down and force him on the air in self preservation. So far, no good. 5KU is quite pleased with the world of Amateur Radio and, rightly so, with his excellent score in the R.D. Contest. Erg must cer-

tainly have stuck to that key in earnest to have run up such a high score in the c.w. section. Nice work OM. SMS is another one who has reason to feel pleased with himself on the outcome of the R.D. Contest in the phone section, and we hope that Stuart will put the tube that he won, as the VK5 highest scorer, to good use. To you, also, we say nice work OM.

5CJ is finding 40 mx much more suitable for keeping skeeds and renewing acquaintances with the boys, to say nothing of the better conditions existing on that band these days. Have not seen any mention of the fire fighting lately Col. Have you cleaned up all the faults in the apparatus? The S.E. boys hope to welcome the first of their limited call signs very shortly in the person of Les McGrath, who has passed the exam and is anxiously awaiting the signal to go. Welcome to our air Les, and hope to hear you some day. Of course you realise that you are one of Gordon's (5KU) mob as yet, but I know that you won't be long in becoming one of my mob. Col. will explain the reason for the snobbery on my part!

Mount Gambier is being declared a city in January, and great will be the celebrations thereof, with the English cricketers visiting the town, or city, as the case may be, also the Davis Cup squad and many other special events. In view of this, it was suggested at the monthly meeting of the boys that it would be a good idea if the R.D. trophy could be on display at Mount Gambier for that particular week, both as a gesture to SMS and 5KU for their good work in the contest, and also as a means of getting some good publicity for Amateur Radio. At the moment of writing, I am not able to say if this could be arranged, but I feel sure that if it can be arranged it will certainly be a good idea. Here's hoping!

It is customary for the various scribes at this time of the year to close their Divisional notes with some passing reference to the year just passed and to the year that has just commenced. This, of course, permits such brilliant and witty journalists as the ex-VK5, who is the scribe for the Division that I once had the honour of being President, if only for ten minutes, to launch into a flow of words which cause all other scribes to bite their fingers to the elbow in sheer jealousy, and decide immediately to cease writing for the magazine until their salary is doubled. However despite such competition, and also the fact that I am a man of few words (all right, all right, I will get to the point) I sincerely wish all and sundry a happy new year and wealth, health, and happiness to you and yours. May the coming year bring you all the DX that you wish for, and last but by no means least, may the coming year lead all Divisions to achieve the high standards already attained by the Premier Division of the W.I.A. What Division is that? Well, that such ignorance should be in these days of free education!!

I close these notes with another of my little stories containing a proverb for the benefit of all, and will condense it somewhat because I don't like the look of exasperation in the dear Editor's eye. Bless Him! Once upon a time there was an island king who had a gold throne, and every night he used to haul it up to the top of his grass hut by means of a stout cord. One morning he was lowering the gold throne down from the roof when the cord broke and the throne fell on him and killed him. Now for the soul-shattering proverb! People who live in grass houses should never stow thrones. Oh I am a one!

WESTERN AUSTRALIA

At the November general meeting of the Division those present listened with interest to Mr. Jack Jewell's talk on the function and purpose of the Amateur Advisory Committee. Mr. Jewell, as a Radio Inspector of the Wireless Branch and Chairman of the Committee in this State, could naturally speak with authority on this subject, and he clarified a number of points about the Committee's operation which may have been in doubt in the past. A vote of thanks was moved by Rolo 6EQ in typical style and seconded by Skipper 6WS.

The second half of the programme was provided by a lecture from Ted Pearce, 6TF, entitled "Level Crossing Flashing Signals." Ted certainly knew his subject and with the aid of diagrams and apparatus, illustrated how well the safety angle is looked to by modern rail transport in general, and the W.A.G.R. in particular.

One of the Division's regular events held again this year was the Annual Picnic, conducted on Sunday, 21st November, at the South Perth Zoo. It went off as a free and easy day enjoyed by those who were there, but the attendance was somewhat disappointing.

6TR returned safely from his holiday trip to Albany, and despite the fact that he had other

commitments, managed a tour of the shacks. A little mobile work on 50 Mc. was indulged in with 6WG and 6KJ, but the gear in the car was not overworked. I am also informed that 6LT is still alive and interested in Amateur Radio! Where have you been Norm? 6MK has been heard on 7 Mc. with the 32V3, using the 14 Mc. beam, but with a wary eye on the co-ax for hot spots! A half wave works a lot better Tom, or have you memories of an earlier effort involving 250v. a.c. and 6MK?

28 Mc. provided a spot of interest towards the end of November when 4EL broke through with an S8-9 signal. Since then, 10 mx converters have been rolling off the assembly line in some of the shacks. I can almost hear the died-in-the-wool 28 Mc. addicts pricking up their ears! Still, it's about time the band began to show signs of life.

Joe 6FD, of Bunbury, has been doing quite well on 20 mx, judging by the stations heard calling him. A visit to 6EC at Munding proved very interesting indeed as Eric was able to demonstrate his new "Station" t.v. camera tube in action. Unfortunately pictures as viewed at the time were negatives, but an additional stage in the video amplifier chain to reverse the phase of the signal was to be installed to correct this. On pointing the camera out of the shack window, it was easily possible to pick up such details as leaves blowing in the breeze, etc. Eric is certainly to be congratulated on his very fine achievements in the field of Amateur Television.

Judging by the DX column last month, 6Z1, 6NF's next door neighbour, has been getting amongst 'em on 14 Mc. 6NF has not been idle either, and has been very successful with the Europeans on 21 Mc. 6RU to be heard looking for that new country. Very rare now though, as I believe Jim has over 200 confirmed up to date. He was also on 21 Mc. for the first time a few weeks back, but I don't think an 813 likes 1/2 mil. drive very much. Jim! 6KW has been active again, so conditions must be on the improve and household chores on the wane, eh Ron?

Well now's the time to wish everybody the Season's Greetings. Christmas has come and gone, but the New Year is still young, so let us hope that it will be a prosperous one, and bring lots of choice DX!

TASMANIA

NORTH WESTERN ZONE

There was a combined meeting of the zone on November 28 at the home of Mr. K. Hancock, where a good attendance viewed a piece of equipment, brought by Devonport members, which is intended to be used as two-way radio for the Devonport Fire Brigade. The equipment was well designed and was built by the Devonport members of the W.I.A. and will be put into service shortly. It consists of a base station of about 40-50 watts crystal controlled on a specially allocated frequency with transceivers in each vehicle, and is expected to have a working range of 20 or so miles. The work is a great credit to the members who built it.

It was resolved that members should organise a search for radio interference with a view to having it eliminated with the assistance of the P.M.G. in order to clear the district ready for t.v. reception.

At the meeting it was noted that two of our members were in hospital. Sam TUV has been there for some time and expects to be well again early in the New Year, and Murray 7MR, who has just recently taken ill.

It is gratifying to note that two of our Associates have passed the A.O.C.P., namely Murray Diprose, who has the call of 7SO, and Roy Nichols, who had previously passed the limited license and is now awaiting his new call sign. Rumours have it that TWA is making extensions to his beam with a view to adding elements for 10 and maybe 20 mx.

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See Page 2 for Conversion Details

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All Amateurs are urged to keep these frequencies clear during, and for a period of 16 minutes after, the official Broadcasts.

VK2WI: Sundays, 1100 hours EST, 7146 Kc. and 2000 hours EST 50 and 144 Mc. No frequency checks available from VK2WI. Intrastate working frequency, 7125 Kc.

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VK4WI: Sundays, 0900 hours EST, simultaneously on 3560 and 14342 Kc. 3560 Kc. channel is used from 0915 hours to 1015 hours each Sunday for the W.I.A. Country hook-up. No frequency checks available.

VK5WI: Sundays, 1000 hours SAST, on 7146 Kc. Frequency checks are given by VK5MD and VK5WI by arrangements on all bands to 50 Mc.

VK6WI: Sundays, 0930 hours WAST, on 7146 Kc. No frequency checks available.

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AMATEUR RADIO

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EDITORIAL



TELEVISION AND THE PROGRESSIVE AMATEUR

Exactly five years ago "Amateur Radio" published one of its first editorials concerning Television and discussed the necessity for members taking an interest in new techniques with regard to the prevention of harmonic radiation.

This raises the question of how many Amateurs do keep pace with modern electronic developments. Some, fortunately, due to their vocation, are of necessity required to give their attention to the progress of their particular science. Some, however, follow more mundane paths of life and the media of their hobby is only participated in during leisure hours.

At this juncture it is worth noting that progressive science does not wait for its friends and the Amateur must spend some of his time mastering new problems, studying new ideas, and experimenting with new pieces of equipment. The nearness of Tele-

vision and its kindred t.v.i. offers a convenient starting place for this renaissance.

With new fields of endeavour and new methodology, the Amateur will find a world where he will regain some of the delights of discovery he experienced when he first started his career in the world of electronics.

The use of frequency modulation, applications of the cathode ray tube, time bases of various forms, beam antennae and a thousand or more Television developments can be applied with profit to Amateur Radio. A knowledge of principles will pay dividends when the matter of t.v.i. is under consideration.

The progressive Amateur will still be "on the air" when Television arrives, using its advantages and benefiting by its techniques, because he has kept abreast of his hobby.

FEDERAL EXECUTIVE.

THE CONTENTS

| | | | |
|--|----|--|----|
| Command Receiver Roundup | 2 | Amateur Call Signs | 12 |
| Economical Relay Operation | 5 | Fifty Megacycles and Above | 13 |
| 144 Mc. Heterodyne Frequency Meter | 7 | DX Activity by VK3AHH | 15 |
| Writing an Article for "Amateur Radio" | 9 | Prediction Chart for February .. | 15 |
| A.R.R.L. Contest | 9 | Federal, QSL, and Divisional Notes | 17 |
| National Field Day, 155 | 10 | Correspondence | 20 |

COMMAND RECEIVER ROUNDUP*

UNDENIABLY the most popular items of war surplus gear are the "Command Set" Transmitters and Receivers. Because of the tremendous interest they still have for many of our readers, last issue we published an article on the Transmitters. Now we take pleasure in presenting the Receivers.

The most commonly available Command Receivers are the BC453, covering 190-550 Kc.; the BC454, covering 3-6 Mc.; and the BC455, covering 6-9 Mc. They all use the same basic six-tube superheterodyne circuit employing a 12SK7 r.f. stage, a 12K8 mixer, two 12SK7s as i.f., a 12SR7 second detector and b.f.o., and a 12A6 audio amplifier, with the filaments of the 12.6 volt tubes wired in series-parallel for operation from 25 volts.

In the case of the 3 to 6 Mc. unit the i.f. is 1415 Kc., and in the higher frequency model the i.f. is 2830 Kc.

The receivers are quite sensitive and stable, but the two units that cover the Amateur 3.5 and 7 Mc. bands leave much to be desired from the selectivity standpoint. Nevertheless, they make excellent "first" or standby receivers. To improve the selectivity of these two units, the reader is referred to an article by K. B. Pounsett ("A.R.," June, 1953, p.2) on Double Conversion of Command Receivers.

The BC453, 190-550 Kc., receiver has proved to be an extremely useful gadget around many Amateur shacks. It uses an 85 Kc. i.f. amplifier, which is very selective. By tuning the main dial to 455 Kc., the standard intermediate frequency of most communications receivers, and using a wire connected to the antenna post of the BC453 with the other end wrapped loosely around the lead from the last i.f. transformer to the second detector in the communications receiver, the combination becomes an extremely selective "dual-conversion" receiver†.

Some Amateurs, however, just take the i.f. transformers from the BC453 to build a selective i.f. channel in less space†.

MODIFYING THE RECEIVERS

To use the receivers in Amateur service entails adding a gain control, a beat-oscillator switch and a phone jack, and building a power supply. Also, as it is easier to obtain 12.6 volts than 25 volts, it is usually necessary to rewire the filaments in parallel for 12 volt operation. When this is done, the six volt equivalents of the original tubes may be substituted and the receivers then operated from a six-volt filament source.

The circuit and values of the components of the Command Receiver in its original form are shown in Fig. 1.

* Compiled from articles by Lt. Paul H. Lee, W4RXO, and Herb S. Brier, W9EGQ, "CQ," May, 1952, and February, 1954, respectively.
† "Lazy Man's Q5-er," Technical Topics, "QST," January, 1948, p.40.
† "New Simplified Q5-er," W6NRM/W9TCJ, "CQ," July, 1953, p.25; "Triple Conversion for the Communications Receiver," W6SAI, "QST," September, 1948, p.53.

The logical place to mount the new gain control, phone jack, and beat-oscillator switch is on the front panel in the space occupied by the adapter box. Remove the screws holding the box in place. Unplug it and remove the aluminium box holding the socket into which the adapter plugged. Mark the wires that were connected to pins 1, 4, and 5. Remove the rest. Cover the hole in the panel with a flat piece of aluminium upon which is mounted a midget 25,000 ohm wire-wound potentiometer, flanked by a s.p.d.t. toggle switch and a small phone jack.

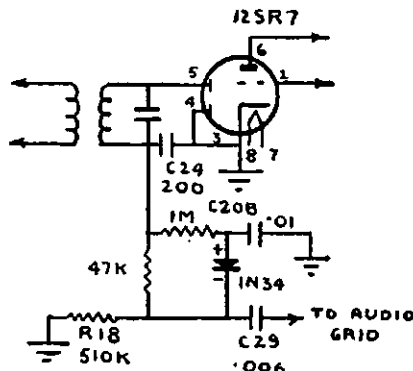


Fig. 2.—The Noise Limiter Circuit.

Ground the middle terminal of the potentiometer and one terminal of the switch to the ground lug of the phone jack. Connect the No. 1 wire to the left-hand terminal of the potentiometer (viewed from the back with terminals down), wire No. 5 to the switch, and wire No. 4 to the phone jack.

To rewire the filaments of tubes for parallel operation, ground one filament pin of each tube socket and connect the other filament pins of each socket together and to Pin 2 of the three-terminal plug at the rear of the receiver. Pins 2 and 7 are the filament terminals on all tubes, except the 12SR7, on which they are pins 7 and 8.

Connect power to the three-terminal plug thus: B— and one side of the filament circuit to pin 1; 12 volts a.c. to pin 2; and 200 to 250 volts d.c. at 50 Ma. to pin 3.

WARNING! Do not apply more than 250 volts to the receiver; otherwise there is danger of blowing some of the condensers in it.

Make a short sleeve, slotted on both ends, out of 1/4" inside diameter copper

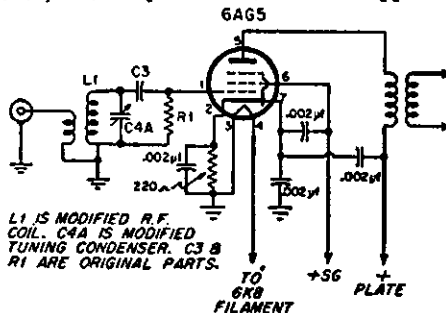


Fig. 3.—The New R.F. Stage.

tubing, and use it as a coupling between the splined tuning shaft and a piece of 1/4" shafting to which a tuning knob may be attached. A spinner-type knob is very handy for this purpose. Fill the sleeve with some type of adhesive which dries hard, such as Duco cement, before fitting it snugly over the receiver tuning shaft. It will withstand rough usage without coming loose.

Remove the bottom of r.f. stage grid resistor (R2 in Fig. 1) from the a.v.c. circuit, and connect it to ground, to permit this stage to run wide open for increased gain.

A word of caution is here in order. In any of the receivers, do not disturb the wiring between the 12K8 tube and the oscillator coil. In most sets these leads are fastened down with glyptal, and for a very good reason. Shifting these leads will greatly affect the oscillator frequency and stability. Hours of careful work can be ruined by movement of these leads.

A coaxial jack should be installed on the front panel in the place formerly occupied by the old antenna binding post. Merely drill a series of small holes around the circumference of a 5/8" diameter circle, and knock out the centre. Use self-tapping screws to secure the jack to the panel.

Replace the 12SK7 r.f. and i.f. tubes with 12SG7s, to give greater sensitivity and gain.

Use of the station receiver during the conversion of the 14 and 28 Mc. receivers is necessary, as it is a very simple matter to listen to the Command receiver's h.f. oscillator in the station receiver and check its frequency as we make changes. Subtract 1415 from the h.f. oscillator frequency, and you will have the receiver's operating frequency.

To bandspread the 14 Mc. band, the h.f. oscillator will have limits of 15,415 and 15,915 Kc. For the 28 Mc. band, the limits will be 29,415 and 31,115 Kc.

BANDSPREADING

For the 14 and 28 Mc. bands, the 3-6 Mc. receiver was chosen because their i.f. frequency of 1,415 Kc. offers a good amount of image rejection without sacrificing too much selectivity.

INCREASING THE BANDSPREAD ON 3-6 Mc. RECEIVER

By removing five of the eight rotor plates on the tuning gang, bandspread can be considerably increased on the BC454 (3-6 Mc.) receiver. Additional padding condensers must be added across the r.f. and oscillator portions of the circuit; 33 pF. NPO ceramics are satisfactory.

Signal to noise ratio can be improved by disconnecting the 620 ohm cathode resistor from the gain control line and grounding.

A good idea for a bandspread scale is to fit a white celluloid scale to the small tuning knob.

On the 7-7.15 Mc. band of the BC455 (6-9.1 Mc.) receiver, this dial will make approximately 1 1/2 revolutions to cover the band. Calibrations are made on the

outside edge of the dial from 7-7.1 Mc. and then are continued on an inner circle from 7.1-7.15 Mc.

In operation, a glance at the main dial shows in which 100 Kc. segment the receiver is tuned and the auxiliary scale indicates the exact frequency.

To make the celluloid suitable for drawing the scales, rub the gloss off with fine glass paper.

14 Mc. RECEIVER CONVERSION

Let's start on the 14 Mc. receiver. We have already performed the basic modifications. Remove the top cover and the shield can over the variable condenser. The receiver may operate without these shields for rough frequency calibration. With a pair of long-nose pliers, carefully remove rotor plates from the variable condenser until only one rotor plate is left in each section. This should be the slotted plate, for tracking adjustment.

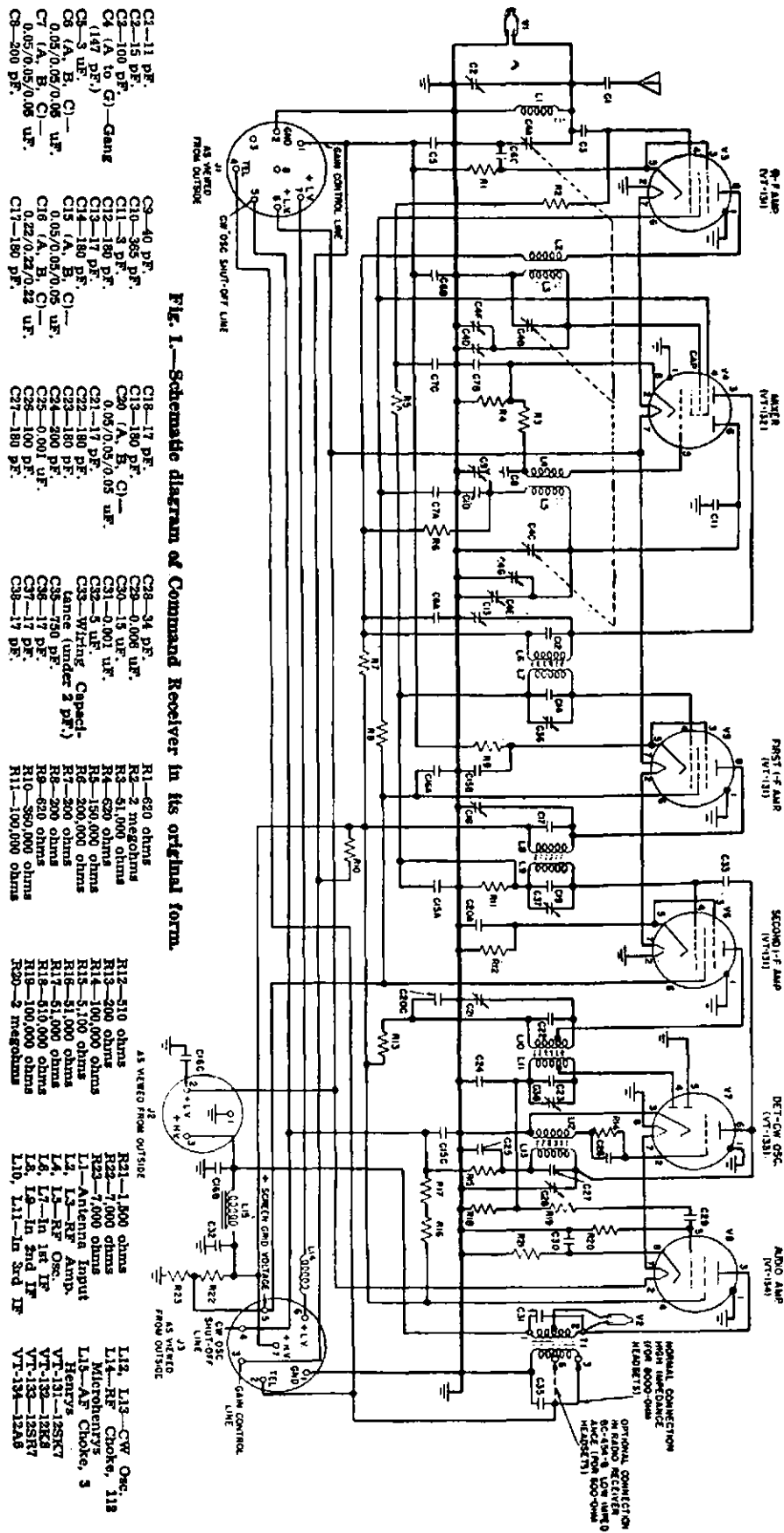
Now turn on the power and locate the receiver's h.f. oscillator by listening on the station receiver. The frequency will be much higher than it was originally, but we will have to go still further. Remove the plug-in coil unit from the bottom of the receiver, noting that it is polarized by the pin arrangement of the three coil plugs. Remove the oscillator coil from its shield can, and carefully remove the core from the coil. This should be replaced after re-winding, and its position is not too critical.

Remove only the large winding of the oscillator coil, and rewind it with about 10 turns as a start, spacewound. The wire size is not critical. We used number 24 enamelled wire. Put the coil back in its shield, replace the coil unit in the set, and turn on the power. The h.f. oscillator should now be somewhere around 15 Mc. on the station receiver. Check the bandspread for approximately the correct limits.

If you are very "foxy," you can use the original dial markings, with new figures, for the new frequency calibration. Slight adjustment of the number of turns, and the oscillator trimmers and padder, will give proper bandspread.

Tracking may be improved if necessary by bending the slotted sections of the tuning condenser rotor plate. Remember our limits of 15,415 Kc. (14 Mc.) and 15,815 Kc. (14.4 Mc.). Rewind the mixer and r.f. coils, using about 11 turns on each, spacewound. Rewind the mixer coil primary, using 18 turns of number 30 d.s.c., interwinding part of it with the secondary, to give increased gain. With the coils back in the receiver, and power on, adjustment of the trimmers should now bring in signals, using a short wire antenna. Slight changes in turns may be necessary, and adjustment of the slotted sections of the tuning condenser rotor plates may have to be made, to secure tracking of these two stages. Now replace the shield over the condenser, and fasten the coil unit securely in place.

Install the noise limiter circuit as shown in Fig. 2, in the ground return of the second detector diode circuit. Replace the bottom cover. Use the station v.f.o. or frequency meter for final receiver calibration with the shield in place. The top cover may now be replaced, and the 14 Mc. receiver is ready



ZEPHYR MICROPHONES

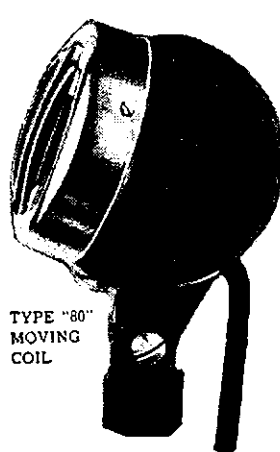


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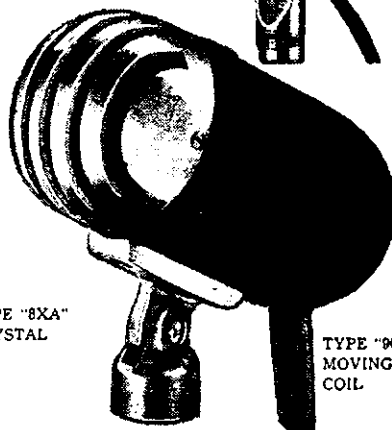
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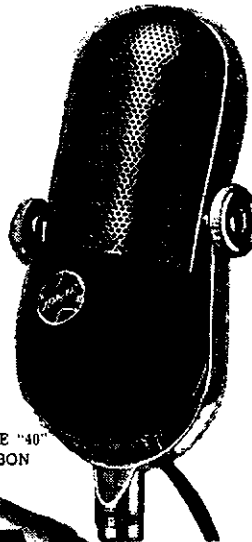


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28 Mc. RECEIVER CONVERSION

The conversion of the receiver for 28 Mc. is performed in a like manner, but with several additional improvements. First, remove the octal r.f. socket, and replace it with a 7-pin miniature socket, for a 6AG5. Replace the 620 ohm cathode resistor R1 (Fig. 1) with a 220 ohm resistor. Remove C6 and connect the small ceramic bypass condensers (as shown in Fig. 3) with as short leads as possible.

From the co-axial jack on the front panel, run a short length of small co-axial cable to terminals 1 and 6 of the oscillator coil socket, using terminal 6 for the shield. Tie terminal 6 to terminal 3 to ground the shield. Connect the 6AG5 filament and the mixer stage filament in series and use a 6K8 as the mixer tube. Each tube draws 0.3 amp. filament current.

Insert a 10,000 ohm 10 watt resistor between R22 and R23 (Fig. 1), to increase the screen voltage to approximately 140 volts. Connect the filaments of the two i.f. tubes in series, and use two 6AC7s in place of the 12SK7s in these sockets. Install the noise limiter circuit as shown in Fig. 2 in the ground return of the second detector diode circuit.

Now remove all but one rotor plate in each section of the tuning condenser, and use 6 turns on the r.f. coil, 5 turns on the mixer coil secondary, 9 turns on the interwound mixer primary, and 5 turns on the oscillator coil grid wind-

ing, all spacewound. Wind a one turn link of insulated wire over the ground end of the r.f. coil, and connect it to terminals 1 and 6 of the coil plug.

Using the station receiver, v.f.o. and frequency as before, align the receiver

for 28-29.7 Mc. coverage. In this case it will be easier to make a new dial plate than to attempt to make the receiver track to the old markings. As before, the final adjustment should be made with the condenser shield cover, and bottom cover, in place.

The preceding paragraphs cover in a few words many hours of work, but the results are well worth the effort. We now have a receiver that is hard to beat for sensitivity and good signal-to-noise ratio on 28 Mc.

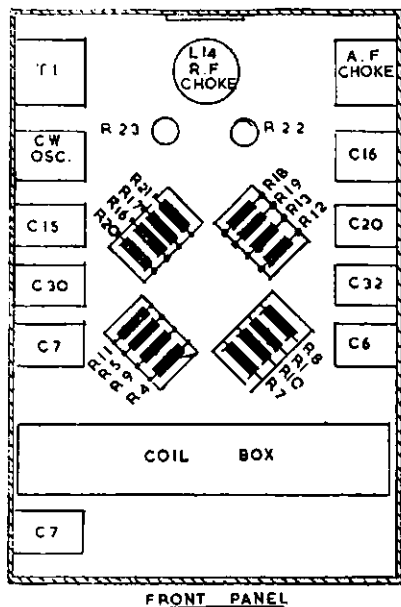


Fig. 4.—Underneath the Chassis. View of receiver, inverted, and with front panel towards you. There are several other resistors and condensers not shown in the above diagram, but they are easily identifiable by inspection.

DX C.C. MANAGER WANTED

Federal Executive would be pleased to hear from any member who would be willing to act as DX C.C. Manager. The duties of this interesting position include the checking of QSLs and the listing of the DX C.C. members. The present Manager will assist the incoming Manager in taking over the position.

Kindly forward applications to the Federal Secretary of the Wireless Institute of Australia, Box 2611W, G.P.O., Melbourne, or phone WF 5504.

Economical Relay Operation

BY H. E. HODGE,* VK3HE

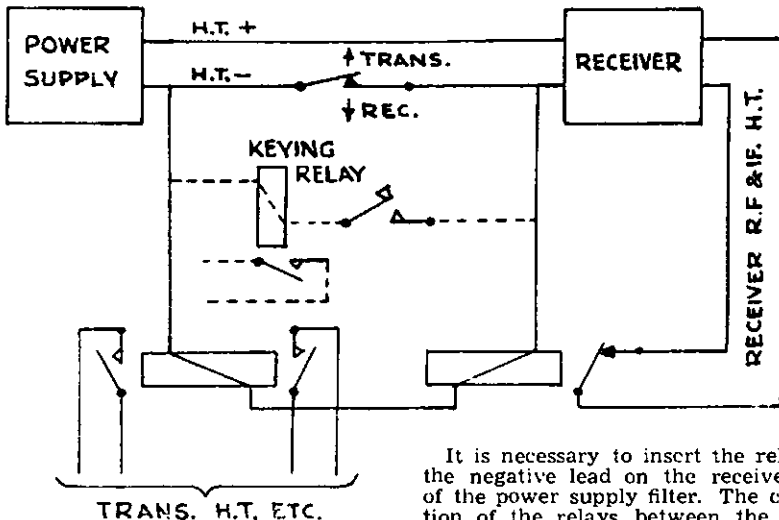
ALTHOUGH convenient, it is not always necessary to have a separate relay power supply available before relay switching of transmitters and receivers can be used. With many types of relays, it is possible to utilise the current drawn by the receiver from its power supply for their operation. The audio stages of the receiver must, of course, run all the time, and the receiver is disabled while transmitting by removing the h.t. from the screens, or screens and plates of the r.f.—and i.f. perhaps—stages of the receiver. This condition is already provided for in some receivers, such as the BC348.

The relays can be connected in various combinations as desired to adjust their current ratings to the receiver current.

This well known method, which is of the "something for nothing" variety, has been in use in the writer's Amateur shack for some years and has been the means of very satisfactory relay operation during that time.

Three different receivers have been used over the years, and each has provided adequate relay power. In the present case, the receiver power supply is a separate unit, and the relays—obtained from a disposals i.f.f. unit—are inserted in the negative lead from power supply to receiver. While receiving, the relay windings are short

circuited by the "receive/transmit" switch contacts, preventing their operation, but when the switch is thrown to "transmit," the contacts open—removing the short circuit from the relays, which operate with the receiver current



through them, closing h.t. circuits to transmitter, etc., and breaking the h.t. lead to the r.f. and i.f. tube screens in the receiver.

A fairly large reduction in the current normally drawn by the receiver can be tolerated while transmitting as the current required to hold the relays in, once operated, is much less than that required to operate them in the first instance.

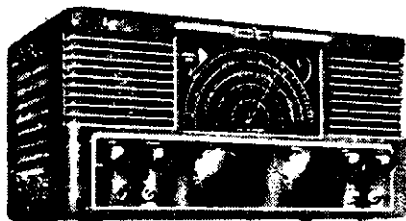
A keying relay may be operated, if desired, by connecting the key and relay in parallel with another relay or relays as shown in sketch, provided that the resistance values are suitable.

It is necessary to insert the relays in the negative lead on the receiver side of the power supply filter. The connection of the relays between the power transformer c.t. and negative was tried and found unsatisfactory, as the a.c. ripple there caused chattering of the relays.

* 60 Highfield Road, Canterbury, Vic.

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£87/3/9 (inc. Sales Tax, Speaker extra)

Width 16 3/4", depth 10", height 8 3/4".

EDDYSTONE MODEL "740"

FREQUENCY RANGE: Band 1—30.6 to 10.5 Mc.; Band 2—10.6 to 3.7 Mc.; Band 3—3.8 to 1.4 Mc.; Band 4—205 to 620 Metres.

VALVE LINE-UP:

| | | | |
|----------------------|-------|---------------------------|------|
| R.F. Amplifier | EA42 | Beat Freq. Oscillator | EA42 |
| Frequency Changer | ECH42 | Output | EL42 |
| I.F. Amp. and A.G.C. | EA42 | Noise Limiter and S Meter | EB41 |
| A.F. Amp. and Det. | EA42 | Full Wave Rectifier | EZ40 |

ELECTRICAL PERFORMANCE: Sensitivity is better than 10 microvolts throughout for a 15 db signal/noise ratio and 50 milliwatts.

SELECTIVITY: 30 db down 10 Kc. off resonance. Image ratio better than 15 db at 30 Mc. and greater at lower frequencies.

AUTOMATIC GAIN CONTROL: A change of input of 80 db affects the output by less than 25 db.

S METER: A socket at the rear accepts the Ct. No. 669 S Meter.

FINISH: Fine black ripple.

Weight 30 lbs.

DEPOSIT

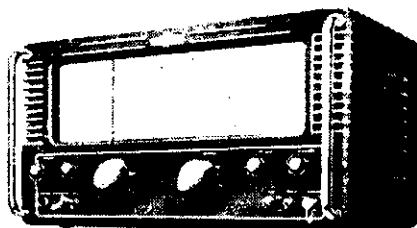
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Width 16 3/4", depth 10", height 8 3/4".

EDDYSTONE MODEL "750"

FREQUENCY RANGE: Band 1—32 to 12 Mc.; Band 2—12 to 4.5 Mc.; Band 3—4.5 to 1.7 Mc.; Band 4—1465 to 480 Kc.

VALVE LINE-UP: Eleven valves perform the following functions:—

| | | | |
|---------------------------|----------|-----------------------|----------|
| R.F. Amplifier | 6BA6 | N.L., S Meter Diodes | 6AL5 D77 |
| Mixer (S.F. to 1620 Kc.) | ECH42 | Output | N78 |
| Oscillator | 6AM6/Z77 | Beat Freq. Oscillator | 6BA6 |
| Freq. Changer (to 85 Kc.) | ECH42 | Rectifier | 5Z4G |
| I.F. Amplifier | 6BA6 | Stabiliser | VR150/30 |
| Det., A.G.C. and A.F. | DH77 | | |

ELECTRICAL PERFORMANCE: Double Conversion Superheterodyne. Sensitivity is better than 5 microvolts for a 15 db signal/noise ratio.

SELECTIVITY: is variable over the range 30 db to 60 db down 5 Kc. off resonance. Image ratio better than 40 db at 30 Mc., greater at lower freq.

AUTOMATIC GAIN CONTROL: Output level is maintained within 15 db for a 80 db change of input, above 3 microvolts at 8 Mc.

AUDIO OUTPUT: Max. output is 3.5 watts. Pick-up terminals are fitted and audio stages give linear amplification over a wide frequency range.

S METER: Socket at the rear accepts Cat. No. 669 Signal Strength Meter.

FINISH: Fine black ripple.

Weight 40 lbs.

DEPOSIT

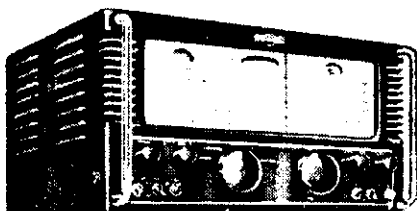
£43/7/7

Repayments

as low as

£4/3/7

per month



£206/18/4 (inc. Sales Tax, Speaker extra)

Width 16 3/4", depth 13 3/4", height 8 3/4".

EDDYSTONE MODEL "680X"

FREQUENCY RANGES: Band 1—30 to 12.3 Mc.; Band 2—12.5 to 5.3 Mc.; Band 3—5.7 to 2.5 Mc.; Band 4—2.5 to 1.1 Mc.; Band 5—1120 to 480 Kc.

CIRCUIT:—Fifteen valves perform the following functions—

| | | | |
|----------------------|----------|------------------------|-----------|
| Two R.F. Amplifiers | 6BA6 | Push-Pull Output | 6AM5/EL91 |
| Frequency Changer | 8BE6 | Beat Freq. Oscillator | 6BA6 |
| Separate Oscillator | 6AM6/Z77 | Noise Limiter, S Meter | 6AL5/D77 |
| Two I.F. Amplifiers | 6BA6 | Rectifier | 5Z4G |
| Detector and A.G.C. | 6AL5/D77 | Voltage Stabiliser | VR150/30 |
| Two Audio Amplifiers | 6BR7 | | |

ELECTRICAL PERFORMANCE: Sensitivity for 50 milliwatts, 15 db signal noise, 4 microvolts or better on all ranges.

SELECTIVITY: Bandwidths at 6 db down—Minimum 14 Kc.; first intermediate 7.5 Kc., second intermediate 4 Kc., maximum 2.5 Kc., and greater with crystal switched in and phased.

AUTOMATIC GAIN CONTROL: 9 db change of output for 100 db change of input, above 1 microvolt at 9 Mc.

FINISH: Polychromatic Grey.

Weight 47 lbs.

DEPOSIT

£69/18/4

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144 Mc. Heterodyne Frequency Meter

DR. ROBERT H. BLACK,* VK2QZ

IN a previous article†, while discussing an approach to stable variable frequency operation at 144 Mc., it was suggested that the method could readily be applied to the construction of a frequency meter. Such a frequency meter has now been built and this article describes it.

The circuit diagram shows that the crystal oscillator and frequency multiplier are standard—commencing with a crystal in the region of 4.5 Mc., output is obtained (by ten times multiplication) at about 45 Mc. In the author's case the crystal was set up at 4495 Kc. and output was thus at 44.95 Mc.

to ensure stability of the variable-frequency oscillator.

Calibration consists first of all in accurately measuring the frequency of the crystal. The variable frequency oscillator is then set so that it covers the required range and is then calibrated at 10 Kc. intervals. A table is drawn up and this calibration is converted to the corresponding 144 Mc. band frequencies. In the present case this latter set of frequencies was obtained by the formula:

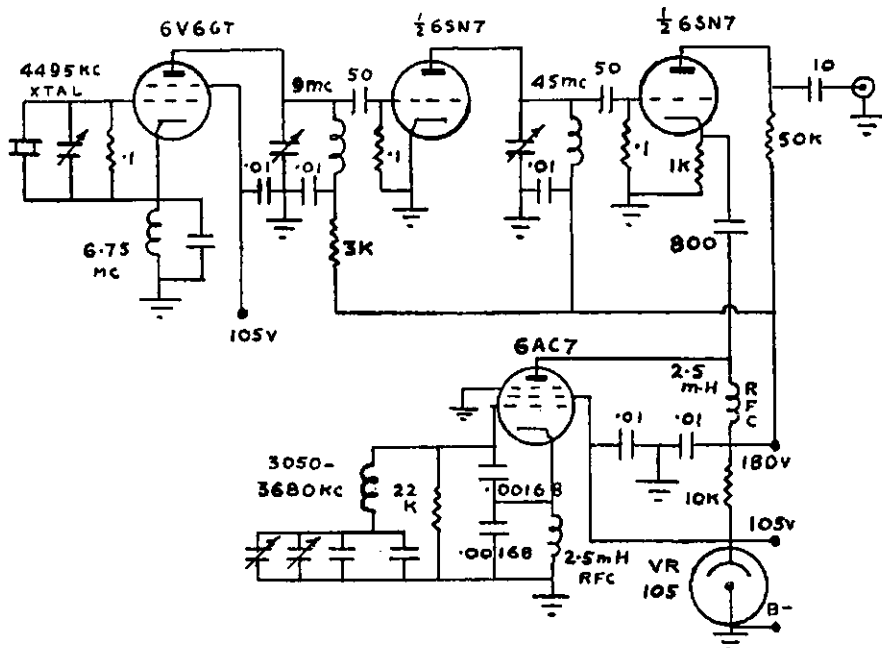
$$144 \text{ Mc. freq.} = 3 (10 \times \text{crystal freq.} + \text{v.f.o. freq.})$$

typed out as a list on several small sheets of paper and bound as a small book with stiff cardboard covers. In addition to the 144 Mc. range, incidentally, the oscillator is calibrated over the 3.5 Mc. band and so its output is available for use on the lower frequency Amateur bands.

A suggested set-up is one using a 5000 Kc. crystal (which can be adjusted accurately to frequency, using WWV) and output from the frequency multiplier at 45 Mc. The 3 Mc. output from a Bendix (perhaps amplified) could then be mixed with the 45 Mc. signal. Measurements at 144 Mc. could then be made with the same ease and order of accuracy which is available with the Bendix at its third harmonic frequency.

To conclude, one must answer the question: "Why bother about accurate frequency measurement on 2 metres?" The author was not able to hear VK2WH, whose frequency is 144.002 Mc., until he set up the receiver on that frequency and waited for the signal to appear—which it did.

It may be suggested that a week spent building a frequency meter is a lot of effort to hear just one signal, but one has heard of types spending months looking for the hundredth or two hundredth country on the lower frequency bands.



The tubes used were 6V6GT/6G6G as trit oscillator with output at 8990 Kc. and one triode of a 6SN7 as a quintupler. The second triode of the 6SN7 was used as the mixer with grid injection at 44.95 Mc. and cathode injection at a frequency varying between 3050 and 3680 Kc. It was found that sufficient output was available at 144 Mc. when a 50,000 ohm resistor was used instead of a coil tuned to either 48 or 144 Mc. in the plate circuit of the mixer.

The variable oscillator uses a 6AC7 in a Clapp circuit. The grid coil was obtained from some disposals gear and the dial gave 3,000 divisions for the 180 degrees excursion of the variable capacitor. The range of the meter at 144 Mc. is from 144.000 to 145.890 Mc.

The screen voltage of the 6AC7 (and of the crystal oscillator) is regulated by a VR105. The whole unit is built in a steel box measuring 7" x 7½" x 5½"; the power supply being a separate unit. The usual structural precautions were taken

Crystal check points were available at three points as shown in the following table:—

| V.f.o. Freq. | V.f.o. Harm. | Xtal Harm. | 144 Mc. Freq. |
|--------------|--------------|------------|---------------|
| 3210.7 Kc. | 7th | 5th | 144.482 Mc. |
| 3371.3 Kc. | 4th | 3rd | 144.964 Mc. |
| 3596 Kc. | 5th | 4th | 145.638 Mc. |

A further check on the v.f.o. calibration is available using its third harmonic and WWV on 10 Mc.—the corresponding 144 Mc. band frequency being 144.850 Mc.

The signal obtained with no aerial on the output terminal of the meter is adequate for beating with most signals; stronger signals can be reduced by rotating the beam or more output can be obtained from the meter by attaching a small piece of wire to the output terminal. The ease with which zero beat can be obtained with this meter contrasts markedly with the critical tuning when a high-order harmonic of the Bendix is used for frequency measurement at 144 Mc.

The dial readings and the corresponding 3 Mc. and 144 Mc. frequencies were

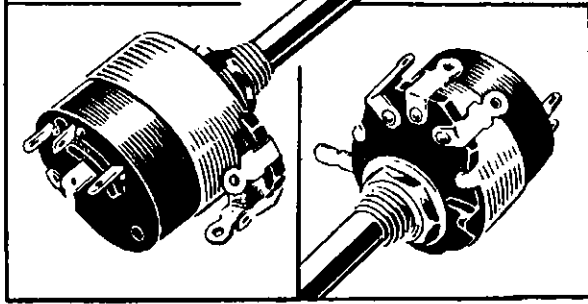
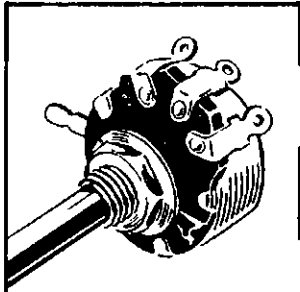
A.O.C.P. CLASS

The Victorian Division A.O.C.P. Class will commence on Thursday, 3rd February, 1955. Morse and Regulations are held on Monday and Theory on Thursday evenings from 8 to 10 p.m. Persons desirous of being enrolled should communicate with the Secretary W.I.A., Victorian Division, 191 Queen Street, Melbourne (Phone FJ 6997 from 10 a.m. to 4 p.m.), or the Class Manager on either of the above evenings.

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."

* "The Chalet," 2 Yerton Avenue, Hunter's Hill, New South Wales.
† "Amateur Radio," December, 1954.



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Writing an Article for "Amateur Radio"

Dear Reader,

One of the purposes of this magazine is to publish technical articles. One of the biggest headaches of the Magazine Committee (and in particular of the Technical Editor) is the continual shortage of articles.

From what we hear on the air, there are enough people doing interesting things to positively flood us out with articles. But the articles never arrive, the pen is never put to paper. Why?

Strangely enough, one of the commonest reasons seems to be just plain shyness at committing things to print. Next is ignorance of how to go about it. Well, we do want YOUR article and if you read on we will tell you how to go about it.

WHAT CAN YOU WRITE ABOUT?

Anything which may be of interest to any other Amateur. If it interests more than one, so much the better. The easiest thing to write about is something you have built, big or small. (There is a terrific demand for small articles of the Hints and Kinks variety.) Test equipment, v.h.f., mobile, antennae, gear for the newcomer, receivers, transmitters are all needed. There is also a place for theoretical or instructional articles, but don't try these without a bit of experience. If in doubt, ask the Editor if he thinks the subject would make a suitable article.

HOW DO YOU WRITE IT?

Technical articles should be written in as simple and direct a manner as possible. The "level" should be chosen to suit the subject and the type of reader for whom the article is intended. Most articles will be intended for that mythical being, the average reader. Simple sentences are usually far more effective than long involved sentences.

Plan your article along logical lines so that the reader does not have to jump backwards and forwards between the various sections. For example, a simple constructional article could be organised as follows:—

- Introduction: Scope and aim of the article, advantages of the equipment, etc.
- Circuit: General description.
- Layout and Construction: Special features.
- Operational Details: Alignment, testing, etc.
- Results achieved.

If possible, type your article and always use double spacing; otherwise use lined paper and remember that your article will have to be read by printers and other persons who may not be acquainted with technical terms, so write legibly. For preference use a paper size of 8" wide by 5½" deep (half quarto) and leave 1" margins. The printer, quite rightly, charges us for the extra time involved in handling articles written on the backs of tram tickets, brown paper, confetti, etc.

Write on one side only, number each sheet, and write your name and the title on each sheet.

Articles should be as brief and concise as possible; "padding" should be avoided at all costs. Never hesitate to submit an article simply because it appears to be of less than average length.

Use standard English and avoid jargon such as "short" for "short circuit," "amp." for "current," "volts" for "voltage," etc.

When finished, get someone to read it out aloud. You will soon see if it has continuity and is legible to a person other than yourself.

Sketches and circuit diagrams should be drawn on separate sheets of paper with the figure number, title and your name on the top. Almost invariably these will have to be re-drawn by our volunteer draughtsmen. This is one of the hardest yet least known jobs of the Magazine Committee. If you have draughting knowledge or can get it done by a friend, then help us to ease the draughting bottleneck by supplying circuit diagrams ready for the block makers.

The width is the important measurement. If the drawing will occupy one column in width, make your drawing 4½" wide, as it will be reduced in processing to half size. Two and three column drawings should be 9" and 13½" wide respectively.

All lettering should be 3/16" high and make all lines heavy to help reproduction.

To avoid wastage of block costs, all lettering should be kept within the confines of the drawing; we have to pay on the maximum width and height taken by the block maker, in calculating the cost.

At present we cannot afford to print photographs, the blocks cost too much. But we are always happy to print photographs if the author supplies the blocks.

As the circuit is usually the heart of the article, you cannot take too much care in seeing that it is correct, that the values of all components are given and that it is arranged so as to be easily read. There are two systems for giving the component values; one is to print the value by the component, the other is to label them R1, R2—C1, C2—L1, L2, etc., and give a table of values underneath. The first system is probably easier to prepare and to read, whilst the second is the only way of stating voltage ratings, wattages, etc., of components. We have no fixed ideas as to which to use. Probably a compromise system is best where usual components are marked with values and unusual components marked R1, etc., and commented on underneath.

WHAT THEN?

Having written the article and prepared the diagrams, send them to the Sub-Editor of your State. His address appears in the heading of Federal and Divisional Notes in the March, June, September and December issues of "Amateur Radio." The Sub-Editor col-

lects all notes and articles for the State and sends them to the Editor. On receipt here, the Secretary of the Victorian Division will acknowledge receipt to both the Author and the Sub-Editor concerned. If you do not receive acknowledgment in say three or four weeks, contact your Sub-Editor and ask him what's happening.

The normal delay for draughting, block-making, and type setting is about six weeks. Articles and blocks have to be in the printer's hands not later than the first of the month prior to the month of publication. So the shortest possible time in which an article can be published is approximately three months. Circuits which involve a lot of draughting might take longer.

Looking forward to your article,

We remain, your humble servants,
THE MAGAZINE COMMITTEE.

AWARDS FOR TECHNICAL ARTICLES

The Council of the Victorian Division, W.I.A., have decided to make an annual award of up to £5 available for the best article or articles printed in "Amateur Radio" from July issue to June issue of the following year. The judging to be carried out by the Magazine Committee of "Amateur Radio."

A.R.R.L. CONTEST

Phone: Feb. 11-13 and March 11-13
C.W.: Feb. 25-27 and March 25-27

In the 21st A.R.R.L. Contest two week-ends are devoted to c.w. and two to phone operation. The rules are the same as those of last year, with this exception: U.S. and Canadian Amateurs will send a signal report plus their State or Province (instead of indicating input power). This information is of special interest to overseas stations aiming to fill in States for W.A.S. and Provinces for W.A.V.E.

Phone Section: 2400 hours GMT Feb. 11 to 2400 hours GMT Feb. 13; 2400 hours Mar. 11 to 2400 hours Mar. 13.
C.W. Section: 2400 hours GMT Feb. 25 to 2400 hours GMT Feb. 27; 2400 hours Mar. 25 to 2400 hours Mar. 27.

ERRATA

In the article, "An Electronic Keyer," December, 1954, issue, the author has drawn our attention to some errors in same. Under the heading of "Circuit," line 14, R5 should read R6. In Fig. 1, the 1 meg. resistor in plate circuit of VI should read R6. In the same diagram the power supply symbols should be reversed, i.e. h.t. positive is earthed and h.t. negative connected to circuitry.

NATIONAL FIELD DAY, 1955

RULES

1. The National Field Day Contest of the Wireless Institute of Australia will be held on **Sunday, 6th March, 1955**. The Contest will be of 12 hours' duration, commencing at 0900 hours E.A.S.T. and will continue until 2100 hours E.A.S.T.
2. The Contest is limited to portable stations operating within the Commonwealth and its Mandated Territories on a power not exceeding 25 watts input to the final stage with the aerial con-

nected, with a special section for fixed stations working to portable stations, and a special multiplier which, it is again hoped, will encourage the use of low power equipment.

3. A portable station for the purpose of the Contest is defined as one whose power is not derived from either private or public mains, shall not be located closer than five miles airline from the home of the operator(s) and shall not be situated in any occupied dwelling or building.

4. No apparatus is to be set up or erected on the site of the portable station earlier than 24 hours prior to the commencement of the Contest. A station may be moved from one site within a State to another within the same State during the Contest.

5. More than one operator may be used in the operation of the portable station, provided that all operators are licensed Amateurs.

6. Operation may be on any of the recognised Amateur bands, and more than one transmitter may be used, providing that only one transmitter is used at any one time.

7. When calling, c.w. stations will use the call "CQ NFD," and phone stations will use the call "CQ National Field Day" to indicate that they are portable stations. Attention is directed to the requirements for portable operation as defined in the P.M.G. Handbook for the Guidance of Amateur Operators.

8. **Sections:** The Contest is divided into four sections, namely:—

- (a) Open.
- (b) C.w.,
- (c) Phone,
- (d) Fixed Station.

The open section will consist of phone and c.w. Portable station participants may enter each of sections (a), (b), and (c), provided a separate log is entered in each case.

9. Logs must be forwarded to the Contest Committee through the **Divisional Council** for membership checking in time to reach Box 1234K, G.P.O., Adelaide, not later than Saturday, 2nd April, 1955.

10. Logs must be filled in in the following order: Date, Time (E.A.S.T.), Band, Emission, Power Input to the final stage with the aerial connected, Call Sign of the Station contacted, RST number sent, RST number received, location of station contacted, points claimed. The log must be headed with the title of the Contest, section entered, call sign of the competitor, location of the station. At the conclusion of the log a summary of contacts must be shown together with a description of the equipment used including h.t. voltage to the final stage, tube(s) in p.a. stage, antenna used, and call signs of all operators.

11. The completed log must be signed by each of the operators with a statement that the P.M.G. Regulations and the rules of the Contest have been observed.

12. The decisions of the Federal Contest Committee will be final in all matters concerning the Contest.

13. Failure to completely observe the conditions of rule 10 will lead to automatic disqualification of a competitor.

14. **Scoring:** For the purpose of the Field Day the following constitute VK Districts: VK2, VK3, VK4, VK5 (South Australia), VK5 (Northern Territory), VK6, VK7, VK9.

15. Serial numbers must be exchanged during the Contest. Failure to record current serial numbers will mean loss of all points for that contact. Serial numbers will be as follows: The first three figures will be the RST report in the c.w. section, followed by the serial number of the contact. Serial numbers may commence with any number between 001 and 100 for the first contact, increasing by one for each successive contact. In the phone section the first two figures will be the RS report as in the c.w. section, followed by the three serial numbers. In addition, the QTH must be given in all cases.

16. Points will be awarded as follows:

Portable Stations—

- (a) For contacts with a fixed station within the Commonwealth (Rule 14) including the competitor's own State 1 point.
- (b) For contacts with other portable stations within the same State 2 points.
- (c) For contacts with stations in Asia, Oceania, North America, 3 points.
- (d) For contacts with stations in other countries other than (a), (b) and (c) 5 points.
- (e) For contacts with other portable stations outside the competitor's own State 10 points.

In order to encourage QRP operation, for portable stations, the total number of points scored will be divided by the power input in watts (with the aerial connected).

If more than one transmitter and/or input power is used for portable contest purposes, the "power in watts" will be calculated as the average.

Fixed Stations—

- (f) For contacts with portable stations in the Contest within the same State 2 points.
- (g) For contacts with portable stations in the Contest outside the State 5 points.

17. **Awards:** An attractive certificate will be forwarded to the outright winners in each section, namely, Open, Phone, and C.w. Certificates will also be awarded to the winners of each section in each State, and to the fixed station in each State with the greatest number of points gained in contacting portable stations in the Contest. Further certificates may be awarded at the discretion of the Federal Contest Committee. The outright winners are not eligible for State Awards.

18. Certificates will be awarded to each operator of the winning stations, provided each operator has contacted at least 25% of the stations contacted.

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Spot Frequency Crystals Prices on Application.

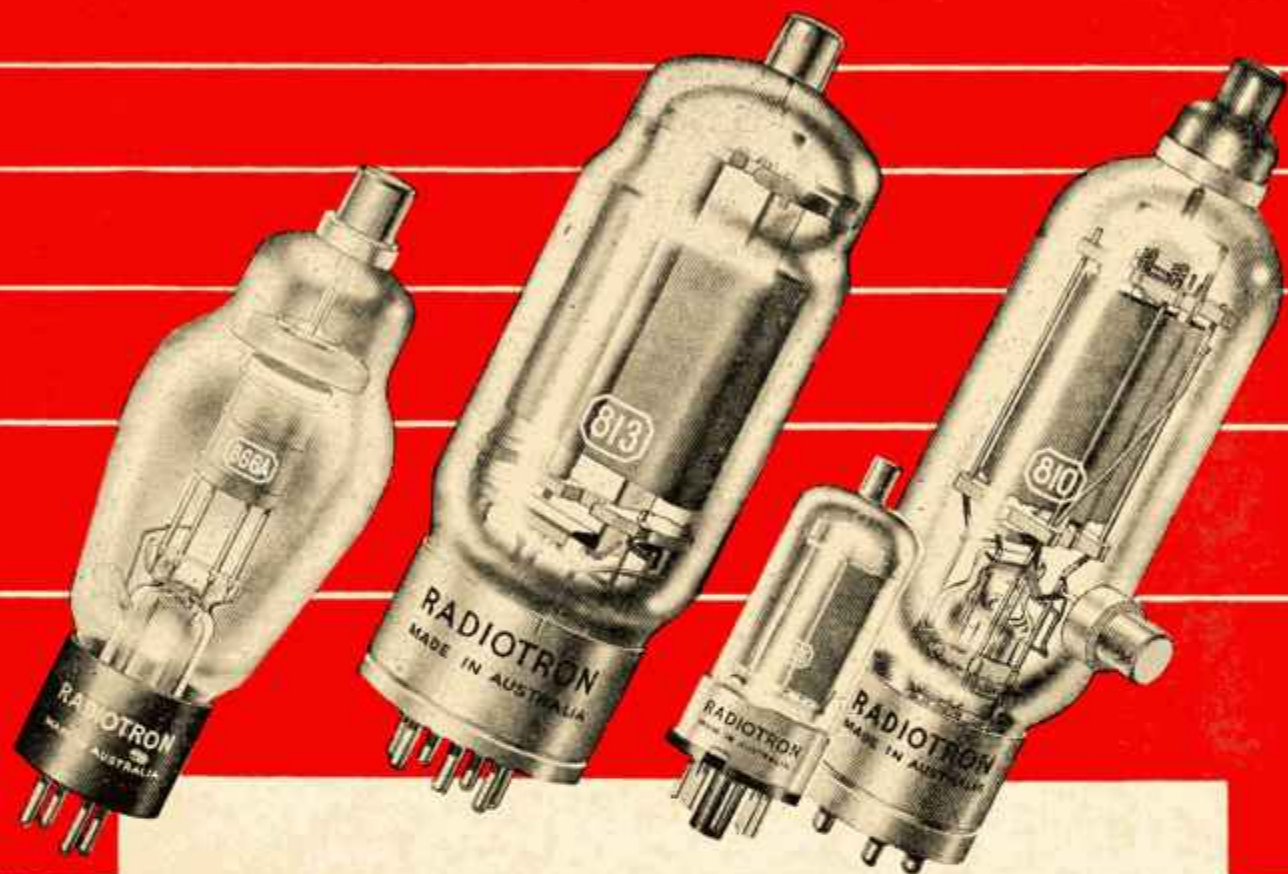
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THESE PRICES DO NOT INCLUDE SALES TAX.

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VICTORIA

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RADIOTRON

AMALGAMATED WIRELESS VALVE CO. PTY. LTD.

AMATEUR CALL SIGNS

FOR MONTH OF NOVEMBER, 1954

ADDITIONS

VK— New South Wales
 20N—R. L. Douglas, 9 Hillside Cres., Epping.
 2WO—H. F. Owen, 31 Walton St., Blakehurst.
 2ABG—T. J. Brown, 100 Woolooware Rd., Bur-raneer Bay, Cronulla.
 2AFL—G. J. Lee, 113 Victoria Rd., West Ryde.
 2ALR—L. R. Burston, Officers' Mess, R.A.A.F. Station, Canberra, A.C.T.
 2ANP—Naval Hdqs. Sydney, Amateur Radio Station, East Aust. Area, Potts Point.
 2AVW—G. A. Warner, C/o. O.T.C., Bringelly.
 2ZAT—J. Wakefield, Hargrave St., Armidale.

Victoria

3BX—G. W. Hitch, 31 O'Hara St., Blackburn.
 3AJL—W. R. Adey, 16 George St., Ashwood, S.E.11.
 3AQM—H. P. Morris, Station: Yacht "Pan-dora," Port Phillip Bay; Postal: 1 Raven St., Kew, E.4.
 3ZAG—I. W. Herbert, 7 Lower Main St., Stawell.

Queensland

4BE—A. F. W. Taylor, C/o. Dept. of Civil Aviation, Aeradio Station, Townsville.
 4XM—W. A. McDivitt, 149 Esplanade, Cairns.
 4ZAS—L. L. Sharp, 9 Dora St., Moorooka, Brisbane.

South Australia

5DW—D. W. Tacey, 23 Main Ave., Frewville.
 5FY—R. A. Catmur, C/o. Mr. A. V. Fergusson, Eighth St., Gawler West.

Western Australia

6ZAM—M. R. Meharry, 98 Kalamunda Rd., Kalamunda.

Tasmania

7PH—N. G. Williams, Launceston Airport, Free Bag Service, P.O. Launceston.
 7ZAH—L. J. Hodgkinson, Wellington St., Long-ford.

Territories

IDC—D. R. L. Callow, Macquarie Island (temp. license).
 12M—B. E. Shaw, Macquarie Island.
 90Q—D. F. Lloyd, C/o. O.T.C. Receiving Sta-tion, Port Moresby.
 9TC—T. M. Cole, C/o. R.T.C., Wewak.
 9YG—G. E. Smith, C/o. Weather Office, Norfolk Island.

ALTERATIONS

VK— New South Wales
 2KR—7 Paton Street, Woy Woy.
 2OS—28 Flanders Avenue, Muswellbrook 3N.
 2TE—37 Estelle Street, Maryville, Newcastle.
 2VQ—52 Lauderdale Avenue, Manly.
 2AAH—37 Myrna Road, Strathfield.
 2ACM—C/o. Dept. of Civil Aviation, Radio Construction, P.O. Box 41, Mascot.
 2ACS—Station: 32 The Circle, Griffith; Postal: Box 631, Griffith.
 2ARD—East Camp, S.M.A., Cooma.
 2AST—226 Concord Road, Concord West.

Victoria

3AB—16 Doncaster Road, North Balwyn.
 3BR—Police Station, Tangambalanga.
 3IQ—Yacht "Southlander," Hobsons Bay Yacht Club, Williamstown.
 3KP—6 Parkside Street, Malvern, S.E.4.
 3MH—18 David Street, Preston.
 3UE—12 Jellicoe Street, Box Hill South.
 3AC—5 Boorool Road, East Kew.
 3AC—C/o. Post Office, Bairnsdale.
 3AKC—8 Crisp Street, Wangaratta.
 3ALN—5 Farmers Street, Nhill.
 3APK—Ward 10, Geelong Hospital.
 3ARI—24 King Street, Ballarat East.
 3ARY—33 Washington Street, Essendon.
 3AXX—Station: 5 Paterson St., Carrum; Postal: Box 127A, Elizabeth St. P.O., Melbourne.

South Australia

5AO—19 Hardy Street, Goodwood Park.
 5HE—8 James Street, Plympton.
 5KH—Hills Road, Eden Hills.
 5KJ—90 Millswood Crescent, Millswood Estate.

Western Australia

6KU—35 Gairloch Street, Applecross.
 6SK—Lot 88, Evans Road, Mt. Helena.

Tasmania

7CJ—C/o. 7NT Radio Station, Kelso.
 7MC—35 Paterson Crescent, George Town.
 7SF—4 Mark Street, Hillcrest, Burnie.

Territories

9VG—C/o. Dept. of Posts and Telegraphs, Lae.
 9WK—C/o. R.T.C., Madang.

DELETIONS

New South Wales: VKs 2ZK (now operating under VK4BE), 2AAU, 2AOQ (now operating under VK90Q), 2AXM (now operating under VK4XM).

Victoria: VKs 3BN, 3DW (now operating under VK5DW), 3GF, 3KT, 3PH (now operating under VK7PH), 3SU, 3YG (now operating under VK9YG).

Queensland: VKs 4BN, 4LQ (now operating under VK2ALR).

South Australia: VK5WJ.

Western Australia: VK6DJ.

Territories: VKs 1BA, 1RL, 9GW (now opera-tion under VK2AVW).

South Australia

5ZB—E. B. Stephenson, 4 Piccadilly Circus, Colonel Light Gardens.
 5ZAB—B. C. Jellet, Norton Vale, Hynam.
 5ZAT—G. P. Tuck, 57 Cowra St., Mile End, Adelaide.

Western Australia

6ZAQ—D. A. Meadowcroft, 132 Eton St., North Perth.
 6ZAS—S. J. Stewart, 95 Railway Pde., Mt. Lawley.

Tasmania

7IJ—D. R. Twigg, C/o. D.C.A., Cambridge Air-port, Hobart.
 7RN—R. D. Nicholls, 30 Pearl St., Wivenhoe.
 7ZAB—P. E. Blundstone, "Barclay," White-mark, Flinders Island.
 7ZAC—D. G. Cartwright, 38 Mary St., Launceston.

Territories

1HH—H. J. Hicks, Macquarie Island.
 9VW—G. Stoble, C/o. Post Office, Port Moresby.

FOR MONTH OF DECEMBER, 1954

ADDITIONS

VK— New South Wales
 2SD—L. W. N. Squires, 27 Fletcher St., Bondi.
 2AUR—G. V. Randall, 8 Chisholm St., Inverell.
 2AVI—A. Isaacs, 43 Tupper St., Marrickville.
 2AXP—J. W. Porter, 91 Telopia Ave., Caringbah.
 2AZS—D. Sellars, 90 Sandringham St., Sans Souci, Sydney.
 2ZAS—S. D. Russell, "The Nook," Oakes Rd., West Pennant Hills.

Victoria

3WB—R. S. Beckett, No. 8 Married Quarters, School of Signals, Balcombe.
 3AED—P. A. Delahanty, Station: 33 Piccadilly St., Oakleigh; Postal: 21 Toward St., Murrumbeena.
 3AHU—H. C. Uther, Mornington Rd., Frankston.
 3AIW—L. H. Weller, Main St., Merrigum.
 3AKT—M. K. Tulloch, Fernshaw Rd., Heales-ville.
 3AQK—R. J. Hildebrand, 133 Simpson St., East Melbourne.
 3ZAJ—J. I. Kelleher, 3 Paine St., Newport, W15.
 3ZAQ—D. H. V. Rankin, 1879 Malvern Rd., East Malvern, S.E.5.
 3ZBH—R. J. Harrison, 7 Tiernan St., Foot-scray, W.11.
 3ZBS—B. M. Stares, 17 Daffodil St., Wendouree West, via Ballarat.
 3ZBW—D. G. Walker, The Lodge, Ormond Col-lege, Carlton, N.3.

Queensland

4VR—L. D. Rickaby, 33 Babbidge St., Coopers Plains, Brisbane.
 4ZAF—D. A. Fraser, Station: Cr. Locke and Ann Sts., Warwick; Postal: P.O. Box 131, Warwick.

ALTERATIONS

VK— New South Wales
 2EI—38 Fuller's Road, Chatswood.
 2NX—Korisset Road, Cooranbong, IN.
 2SQ—19 Jubilee Street, Dubbo.
 2AKN—21 Urunga Street, Baigowlah.
 2ASG—8 Duke Street, Grafton.

Victoria

3PW—3 Khartoum Street, Caulfield.
 3QC—Tone Road, Wangaratta.
 3VQ—4 Burgess Street, Beaumaris, S.10.
 3XJ—11 Vialis Avenue, Parkdale.
 3AMH—Station: Walker St., Ballarat North; Postal: 208 Eyro St., Ballarat.
 3AND—Coorio Avenue, Rosanna.
 3ARI—13 Barkly Street, Ballarat.

South Australia

5KX—297 Goodwood Road, Kings Park.
 5SR—60 McDonald Avenue, New Hindmarsh.
 7BL—Kelvedon Avenue, Taroona.

Tasmania

7RC—Station: Western Junction Airport; Postal: C/o. D.C.A., P.O. Box 416, Launceston.

DELETIONS

New South Wales: VK2KC.
 Victoria: VKs 3IJ (now operating under VK7IJ), 3VW (now operating under VK9VW), 3AQC.
 Tasmania: VK7ZAD (now operating under VK7RN).

QUAD II

**AMPLIFIER AND
QUALITY CONTROL UNIT**



The new Acoustical Quad II is truly an instrument designed for the home. Its beautiful styling is unparalleled in the high-fidelity industry. Its specifications are second to none and were deliberately obtained with up to 20% tube mismatch, to be certain that the Quad II will always exceed its published specifications.

It is the most distinguished audio achievement of recent years, combining Highest Engineering Standards with New Concept of Styling for the home.

SPECIFICATIONS:
 Gracefully styled. Finger-tip control. Full range fidelity 10 to 60,000 c.p.s. plus or minus 1/2 db. Push-button programme channel selection. Complete input flexibility. Built-in preamp; 1.5mV sensitivity upwards. Automatic circuit correction. Independent filter and filter slope controls. Bass and treble designed for musical balance, independent of harmonic filtering.

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FIFTY MEGACYCLES AND ABOVE

NEW SOUTH WALES

The last meeting of the V.h.f. Group for 1954 took place at the usual meeting place, Petersham Technical College, on 3rd December, when the evening was devoted to films and shots of various field stations at their location during the October Field Day and snaps of the havoc a storm made to Ted 2XX's tower. The first film was a story of the evolution of the motor car, from the horseless buggy type to the present streamlined version. The second film was the 1954 Redex Trial and those present decided the drivers taking part would not be allowed to take part in our 144 Mc. "Fox Hunts" as the experience in driving cross-country would give them too great an advantage.

During the interval between films the Group listened to an ABC feature on the work of the C.S.I.R.O. in the field of Radio Astronomy, discussion on various aspects of the equipment used brought to light many interesting features and several members had seen some of the equipment in actual operation.

The event for December was a Merry Xmas Scramble held on Wednesday night, 22nd Dec. A total of 24 stations took part. The idea was to work as many stations as possible and exchange Xmas Greetings. A very enjoyable night was had by those taking part. The results were 2ALD and 2ANF 1, 2APQ 20, 2WJ/F 17, 2HL and 2ALJ 14, 2ZAR, 2ABZ, 2AKK and 2CE 12, 2HO 11, 2AHP and 2AVI 10, 2PF, and 2ABH 9, 2ACK and 2ABR 8.

General activity on 2 mx has been limited to only two or three stations operating each evening as the holiday period has taken a few out of town and the Ross Hill Contest keeping those on 50 Mc. busy awaiting and watching for DX openings which so far have not been up to expectations. Only one or two really good openings to ZL, however, all VKs have been heard and VR2CG worked by several. Judging from comments, the VK4s have been giving a good account of themselves.

The February meeting of the Group, to be held on Friday, 4th, should be an interesting one. The lecture of the evening will be given by Mr. Barry Goodman, 2ZAG, his subject being "V.h.f. Antenna Theory and Design." So if you have any problems or pet theories regarding the antenna you intend to build, come along and hear what should be a very interesting lecture. Also sidelights on "Operation Roof Top" will be given by 2HO and 2APQ together with a recording of 2 mx signals heard at Mt. Kosciusko and no doubt comments from those who heard our signal from Mt. Kosciusko and made contact, not forgetting the "Admiral" 2ABO on his deep sea experiences regarding 2 mx.

Technical activities during Dec-Jan. period appeared to be trying to cope with the various festive gatherings associated with that period. One function which a number of the Group attended was the Gladesville Radio Club's Annual Barbecue when a very enjoyable evening was spent with all the trimmings in keeping with the season. Best wishes to the club and thanks for the invitations.

Three new stations appeared on 2 mx. Alf 2AVI's brother to Admiral Ted 2ABO; congratulations Alf on getting your ticket, may you have plenty of contacts; also Max 2AUA, of Herne Bay and Peter 2AQC, of Turramurra. Welcome to the v.h.f. bands, chaps, and all look forward to contacts with you; don't forget the V.h.f. Group meetings.

A visitor to Sydney over the Xmas New Year period was Noel 2APE, from Dubbo, and who was operating portable from Ramsgate and made contacts with many of the Sydney gang. Arch 2GU seems a bit discouraged with 2 mx as he has not contacted Sydney for some considerable time although he reports hearing signals. So what about turning your beams South and give Arch a call?

Very little has been heard from the North Coast regarding the 2 mx link to VK4 and to the Urunga Convention. The management Committee would like to hear some suggestions, so that this fixture can be arranged. So what about dropping a line to the Secretary, V.h.f. Group, Box 1734, G.P.O., Sydney, and let us know your thoughts on this project?—2APQ.

VICTORIA

Signals seem to be solidly on the up grade on the 50 Mc. band as several of the VK3s have worked VK6, 5, 4 and also VR2. The ZLs are also coming through at good strength. During the DX session, 3ANQ (Warrnambool) broke through with extremely good signals into Melbourne. He worked Max 3BQ and Len 3LN, reporting them both at S9. Also short-wave listener, Jim Hunt, of Frankston, reports having heard the following stations on 50 Mc.: ZL2ABX, ZL2KCT, ZL2DS, ZL2ACB, VKs 5MX,

5ZL, 4PQ, 4CU, 4GG, 4BT, 4NG, 4TY, 4PT, 4CB, 4HR, 4AF, 4RH, 4WD and 2ATS.

There was a record entry for the Fox Hunt in December when ten cars took the road. We welcome Ted Howell and Peter McEwan, David 3ZAY, Ian 3ZAM and Berry 3APB to the hunt for the first time. Max 3BQ again acted as control station and was ably assisted with cross bearings from Bill 3ZAC, Bob 3WY and Bob 3OJ, and we offer to them our thanks for their assistance.

As the Fox, 3LN, had been granted slight license as a Xmas gesture, the fox car turned up at the starting point with a noticeable amount of decoy camouflage. Immediately after the start, the fox car went home to Ascot Vale and changed the entire equipment into a different make of car, also changed the aerial into a hand-supported dipole which could be withdrawn close into the car when the occasion demanded it, and Len 3LN was back on the air within three minutes. Drivers were also changed. Phyl taking over the driver's seat and Len sitting on the floor of the back seat with the tx so that only one person appeared to be in the car. Under these conditions on the first run all cars were evaded. However the fox was able to slide past Berry 3APB without him noticing. All went well on the second run when the fox literally was able to circle Ted Howell and the 3VZ-3IE combination. Jack 3VZ had two welcome visitors in the car with him in Councillor Jim 3NY and Clem 3GY. However after a few miles, Jack 3VZ seemed to recognise that a particular car number seemed to be about whenever the signal was strongest and he made the first catch of the evening, followed only seconds later by the 3YS-3ABA combination and passenger Glen Jennings. There seems to be some doubt as to who was the actual winner, so perhaps we should call it a dead-heat as the stewards are still arguing it out.

On the last run, 3YS and 3VZ, with their newly gained knowledge of the different make of car, were again successful and the fox had the pleasure of driving past 3ALY, Ted Howell and the 3ZAY-3ZAM combination several times. However outside the final location, 3AIK, 3ADU and all other cars found the fox with the exception of Grame 3ZAA and Norm 3Pench. The final location was a secret from all including the host, Berry 3APB, who returned home with his supper which, by the way, was a decoy supper consisting of one potato, three slices of stale bread and a thermos of cold water. It would have been too bad if Berry had felt peckish on the way round and had decided to have a little nibble. Heather, Berry's XYL, hurriedly covered up Berry's confusion when he opened up his supper parcel by telling him that an excellent looking sponge cake, which Heather had made and decorated with the words: "A Merry Xmas to the V.h.f. Group" was his, Berry's contribution towards the supper. The gang soon made short work of Berry's contribution. Twenty-five of the gang participated in the post mortem and supper and we wish to thank Berry and Heather for opening their home to us and their friendly hospitality.

The December meeting of the V.h.f. Group took the form of a visit to the Monitoring Station at Mont Park where Mr. Oxnam and Mr. Roberts conducted a tour of the frequency measuring section and the short-wave receiving station. Twenty-seven of the Group thoroughly enjoyed the visit and a few disquieting pieces of information were gleaned. Of particular interest was a copy of the Berne Convention frequency assignment when we found that some sixty Commercials were officially assigned into the 20 mx band and about 300 assigned frequencies in the 7 Mc. band. This information certainly gave a jolt to those of us who had assumed that at least some of these frequencies were 100 per cent. Amateur assignment. An interesting evening concluded with a vote of thanks proposed by Fred 3YS.

At the next V.h.f. Group meeting on 16th February, at 8 p.m. in the W.I.A. Rooms, 191 Queen Street, Hans Albrecht, VK3AHH, will deliver an illustrated lecture entitled "Electronics in Meteorology." All are welcome.—3LN.

WESTERN AUSTRALIA

50 Mc.: It's happened at last! After a couple of false starts, at 0830 on 3rd January, VR2CG broke through to contact 6HK and 6WG for the first Fiji-Western Australia QSOs on 50 Mc. On this same day the band was open to all States of VK and ZL2 with good signals, providing the best day for DX experienced this season, but only a shadow of the conditions enjoyed during 1953-54. Still, we must be thankful for small mercies!

6EO has been in for his share of the DX but is still plagued by a power leak which reaches colossal proportions at times. As Rolo

AUSTRALIAN V.H.F. RECORDS

| TWO-WAY WORK | | | | |
|--------------|-------------------|----------|-------|-------------|
| Band Mc. | Stations | Date | Miles | World Rec'd |
| 50 | VK5KL-W7ACS/KH6 | 26/8/47 | 5355 | 10500 |
| | VK3IM-VR2CB | 30/12/53 | 2405 | |
| | VK7BQ/LZ-VK9DB | | 2211 | |
| 144 | VK3GM/3-VK7LZ/PF | 9/3/52 | 317 | 1400 |
| 288 | VK3AFJ/3-VK3AAF/3 | 21/3/54 | 63.8 | — |
| 576 | VK3ANW-VK3AKE | 11/12/48 | 81.8 | — |
| 1215 | | | | 100 |
| 2300 | VK3ANW-VK3XA | 18/2/50 | 9.1 | 150 |
| 5650 | | | | — |
| 10000 | | | | 108 |
| 21000 | | | | 800 ft. |
| 30000 | | | | — |

It is in the interests of all v.h.f. enthusiasts to notify F.E. through Divisions, if you can better the above figures. Please give exact details of both stations' locations for checking, when submitting your records.

would put it, "It can wear you a bit thin!" 6SJ returned from his Eastern States trip and was highly delighted to get among the DX by working into VK4 and VK5. Sid has asked me to register his appreciation of the fine hospitality offered by the gang in VK3 and VK5; 3LN, 3ATN, 3ATR and 5MK in particular. I think there will be quite a few new ideas incorporated in the rig as a result of his visit. 6GU has been having a run of outs with the DX, he finds that conditions at Fremantle are not always the same as in Perth. Signals appear to be up in one QTH and down in the other and vice versa.

6AW has been threatening activity again on 6 mx, but the lack of a suitable crystal appears to be a difficulty at present. Denis has a rx in operation which appears to work very well, and has been working crossband from 144 Mc. 6ZAE, 6ZAT and 6ZAZ have likewise been working crossband duplex. Cecil 6ZAZ has had a couple of 3 1/2 hour marathons with 6WJ in this way. At one stage Warren's rig looked like overheating, so out came a blower motor to cool it off, but it was the modulator, not the final that needed most attention! Some people can talk!

144 Mc.: Activity may be forcibly reduced on this frequency during the next few months as 6AT, 6ZAK and 6ZAE have all been absorbed by the N.S.T. scheme. At least the authorities must want some work done, as they saw fit to send each to a different service! Both 6ZAA and 6ZAZ now possess 30 ft. towers standing in a vertical position, which should have the beams in place by now. Wally proposes putting his old five over five up at about 40 ft. but Cec. has ideas of a 16 el. phased array. 6AW should have his new tower up shortly, and also favours the phased array, but only 12 el.

6RK on once again and putting out a very potent signal from his 615 and 3 el. beam. What was that back-to-front ratio Roger? 42 db? 6WJ has completed a converter for 2 mx at last. It works out very nicely and with a 5 el. beam, Warren hears all there is to be heard. 6ZAB was seen at the Xmas meeting and promised activity during January, not heard to date though. 6ZAM is another who is progressing towards emitting a signal. According to the grapevine, there's quite a deal of activity pending on the Goldfields from the "Z" call signs so there might be a good chance of some 350 miles DX before long.—6HK.

CALL SIGNS

It has been noted with concern that there has been a growing tendency during recent months for licensees of Amateur Stations, particularly when engaged in telephony transmissions, to omit the prefix "VK" when announcing station call signs.

Such practice is, of course, not in accordance with International requirements, and contravenes the Wireless Telegraphy Regulations under which stations operate. Regulation 60 states that the licensee of an Amateur Station shall at all times transmit the full call sign allotted to the station concerned.

"ACOS" CRYSTAL MICROPHONES and MICROPHONE INSERTS

A Complete Range For Every Purpose

MIC 36



£6/18/6

Housed in attractive plastic case, this Microphone is ideal for home recording and public address, etc. Response unexcelled for its size and price. The performance is not affected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s. Recommended load resistance not less than 1 megohm dependent on low frequency response. Can be supplied complete with switch and floor stand adaptor as required at a small extra cost.

This omni-directional Microphone is robust in construction, with a pleasing appearance. Vibration, shock or low frequency wind noise will not affect the performance. The low frequency cut-off is dependent on the load resistance. The cut-off is given by the quotation, $F = 80 \div R$, where $F =$ c.p.s., $R =$ megohms. An adaptor (floor mounting) is available at low extra cost.

MIC 22



SPECIFICATION

Output level = -50 db ref. 1 volt/dyne/cm².
Output impedance—equivalent to approximately 0.002 uF. (0.8 megohm at 100 cycles).
Frequency response—substantially flat from 40 to 6000 c.p.s.
Recommended load resistance—not less than 1 megohm, dependent on low frequency response.

£9/18/6

Designed to meet even the most exacting requirements, this Microphone incorporates the world famous floating crystal sound cell construction. Its special characteristics are that its fine performance is not affected by vibration or shock. The fidelity is not impaired by low frequency wind noise.

SPECIFICATION

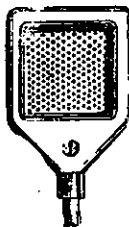
Recommended load resistance—not less than 1 megohm.
Output level -65 db ref. 1 volt/dyne/cm².
Frequency response—substantially flat from 30 c.p.s. to 10,000 c.p.s.
Directivity—non-directional.
Size—2½" spherical diameter.
Connector—Standard international 3-pin.

MIC 16



£24/19/6

MIC 28



£5/19/6

Designed to give freedom of movement, this Microphone is small and non-directional. Housed in a soft moulded rubber case, which gives protection against shock, it is provided with a pin at the rear of the case for pinning to the lapel.

SPECIFICATION

Output level—approx. -55 db ref. 1 volt/dyne/cm².
Recommended load resistance—5 megohms.
Frequency response—level throughout the whole of the audible spectrum.
Capacity—0.0015 uF. at 1000 c.p.s.
Impedance—100,000 ohms at 1000 c.p.s.
Cord—6 ft. shielded cable.
Size—1-9/16" wide x 2¼" long x ¾" thick.

MIC 35



£2/15/-

The MIC 35, undoubtedly the best value ever offered, is ideal for amateur transmitters, public address, etc. Housed in an attractive die-cast case, it features a high sensitivity and substantially flat characteristics. Provided with a built-in shunt resistance of 2 megohms, it will, when connected to the grid of the input valve, give a

SPECIFICATION

substantially flat response from 50 to 5000 c.p.s.
Output level: -55 db ref. 1 volt/dyne/cm².
Cable—approx. 4 ft. of co-axial supplied.
Weight—6 ozs. unpacked, 7 ozs. packed.
Dimensions—microphone only 2¼" x 2¼" x ¾"

This Microphone has been designed for the high quality public address and home recording field. High sensitivity and flat characteristics are obtained by a specially designed acoustic filter. Housed in an attractive plastic case with an unexcelled response for its size and price. Unaffected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s.

MIC 33



£6/18/6

MICROPHONE INSERTS

CRYSTAL MICROPHONE INSERTS

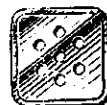


(MIC 32 illustrated)

These inserts are available in varying sizes ranging from as small as 15/16" square to 1-13/16" round, with various thicknesses from 7/32" to 9/16". Suitable for every purpose such as hearing aids, public address, tape recording, amateur broadcasting, etc., they have responses from 2250 c.p.s. to 3500 c.p.s. at 5 db to 30 db. Insert can be supplied with or without 10 meg. resistor as required.

MIC 32 insert, £2/15/6; all others, £1/19/6.

MICROPHONE INSERTS



(MIC 23 illustrated)

AMPLION (A'SIA) PTY. LTD.

EXCLUSIVE AGENTS:

SYDNEY, AUSTRALIA

DX ACTIVITY BY VK3AHH†

PROPAGATION REPORT

3.5 Mc.: Unfortunately, observations on conditions were restricted to European break-throughs between 1800 and 1900z.

7 Mc.: Openings on this band deteriorated during the month which is, to some extent, explained by an increase in the general noise. Long-path break-throughs to North America (1900-2100z) were reported beside the normal openings to W-land from 0700 to 1500z. European signals were represented, rather weakly, over the long route around 0900z and on the short path from 1600 to 2100z. The Far East and Pacific Islands were reported to be workable with some regularity between 0800 and 1400z.

14 Mc.: Conditions on this band have been reasonable at times. The African Continent was well represented between 1230 and 2200z, with long-path signals from North America around 1800-2300z. Europe and the Middle East were workable over the short route (1100-1600z) with South and Central America around 1000-1400z. South East Asia and the Far East have been reported from 0600 to 1500z.

21 Mc.: As can be expected for this season at conditions of minimum sunspot activity, DX openings on this band were unreliable and fairly unstable. Nevertheless, some break-throughs to the American Continents, South East Asia and Europe as well as Africa have been reported during the period 2200 to 1100z.

27-28 Mc.: These bands have shown some short-skip conditions to New Zealand and all States of Australia.

NEWS AND NOTES

There is a little ship rolling in the southern part of the Indian Ocean on the way to the southern-most continent—Antarctica. Heavy seas seem to be playing ball with the boat and the men aboard, but it is certainly not a trip for the sake of sea voyage alone! It is the expedition to Mawson, the Australian Antarctic Base established by the 1954 team there, and the new men now aboard the Kista Dan are looking forward to important research and new discoveries on that block of ice down south. Naturally, there are some Amateurs in the new party and they all promise to look for us VKs on the mainland! Let us hope that many contacts will result during 1955 with (see "A.R." 1/55) Eric VKIEM, Bob VKIRA, and Hugh VKIAWI.

Activity from the 1955 team on Macquarie Island has already been reported on the Amateur bands. As mentioned in last month's notes, their call signs are: Harry VKIHH, Bernie VKIIZM, and David VKIICD.

Wishing them a bon voyage and welcoming the boys back from Macquarie Island—namely, Chas VKIAC, Gordon VKIOA, and David VKIDJ—seemed to be, as in previous years, the privilege of Victorian DXers and Divisional office-bearers, this time represented by VKs 3BG, 3TE, 3TF, 3UO, 3YS, 3ZC and 3AHH.

A well-known DXer in a much hotter area than Antarctica, Don PJAJ, in Aruba, has given the following very desirable information on active Amateurs in that country: PJs 2AA, 2AB, 2AC, 2AE, 2AH, 2AI, 2AJ, 2AK, 2AL, 2AM, 2AO, 2AP, 2AQ, and 2AR. Most stations QSL 100 per cent. via Bureau or direct. Don will be pleased to send another card to anyone who might not have received one from him. The PJ Club has a high reputation as far as prompt QSLing is concerned and the boys definitely intend to keep it that way!

These are interesting items supplied by the NCDXC and the "DXer".

VQ8LQ who will return to VQ6 land in March, 1955, is ex-VI2BT, VU2NH, VU2DX, G3LQ, ZD1LQ and EL2LQ.

Operation from ZD9 may be expected soon.

W8RRG should now be in VP7 land and intends to stay there for a year. He also plans a short trip to HI land.

W8MHB plans to go to Cocos Island (TI9) around the 1st February.

Following the Ballarat State Convention of the Vic. Div., the Divisional Council formed an Olympic Games Committee at the December meeting, with, for the time being, two members, namely VKs 3TE and 3AHH. Our main task will be the examination and arrangement of possible connections between this important international event in Melbourne in 1956 and Amateur Radio in general—W.I.A. in particular—e.g. care for visiting Amateurs, special QSL cards, etc., etc. Due to the close relation to

the work as DX Editor, I shall answer all enquiries from Interstate and Overseas Amateurs and Societies in the normal course of such correspondence.

QTHs OF INTEREST

VQ8LQ—Box 11, Hargeisa, British Somaliland.
HK0AJ—Victor Abrahams, San Andres Island, via Rep. of Colombia.

FQ8AX—Jean Rozler, Box 172, Pointenotre, Fr. Eq. Africa.

HZ1AB—7244th Air Base Sqdn. M.A.R.S., A.P.O. 616, c/o. P.M. N.Y., C.

LU3DCX—Alberto J. Michelin, Belgrano 320, Villa Allianz, Gaseros.

LU3JL—Angel Bugari, Irigoyen 583, Diamantel (E. Rios).

EL2L—Sam Butler, Monrovia.

ZB2A—Via ZB2I or R.S.G.B.
Ex-TI2TG, K6IMI—Tom G. Gabbert, 1243, E. Meta St., Ventura.

DU9XW—Box 12, Iligan City, Philippine Islands.

ET3GB—Box 621, Addis Ababa, Ethiopia.

VP8TN—Public Works Department, Barbados.

ET27V—C/o. Kagnew Station, Asmara, Eritrea.

ACTIVITIES

3.5 Mc.: Well, I am on my own again! 3AHH's log shows DL3TG (1830z).

7 Mc.: Laurie 2AMB presents this excellent list: KR6SA*, YU3IC, IT1AI*, IT1ZWS*, G6ZO*, 1U9YG*, KB8AQ*, ZD6BX*, VS2CR*, JA*, KL*, DU7SV*, DU9WX*, and KC6CG. Gordon 3XU reports long-path Ws around 2000z. Ken 1KM worked JA*, Eric BERS195 heard CT1CF, DL1DX, EA4BH, GCSKAV, HB1MX/HE 12015z, HA6L, YU3EC, SM, 8CWC, 8CST, and 8CPA, tall aboard H.M.S. "Aels-wabben"†, HB9PS/MM (M.S. "Romandie").

14 Mc.: C.W.: Lymell 2GW: ZD6BX*, ET3S*, and FB8. Pete 2PA: VK1PG*, ET3LF*, VQ2DT*, VQ4FK*, VU2*, VS6*, VS1*, YU*, ZD8RD*, MP4BBL*, KL7*, KC6UZ*, FK8*, JA*, Gs*, DLs*, LA4RD*, SM*, GI4RY*, OH*, OZ7UU*, OE1GZ*, ET3GB*, KA*, VQ6R0*, YV5EC*, Frank 2QL: CE0AD*, ZD6BX*. Don 2RS: DL*, SM*, I*, HB9X*, OZ7SN*, DR, HA5KBA*, VS1*, GI4RY*, HG0QI*, VSSKU*, VS1*, ZS2BJ*, PA0QF*, OE2HP*, Barry 2AAB: FA8RJ*, DM*, 4X4BT*, Noel 2AHH: OZ2N*, HB9OQ*, HB9PF*, F9QV/FC, FK8*, FB8RF*, ZS8MM*, DJ*, ZS5U*, ZSSAM*, FR7AA*, ET3LF*, ZD6BX*, VQ4BNU*, FASB*, FA8RJ*, EA8AY*, 2AMB: CE0AD*, CP3CA*, LP1UC*, VK1EG*, DU1CV*, VQ6LQ*, VS8*, VU8E*, CE3QW*, VQ4EZ*, VSSKU*, 4S7NX*, VK1PG*, VK1DY*, P8BM*, SM*, OH*, LU7GP*, LU8EN*, VR3A*, VR4RO*, GM2FHH*, PY1MK*, CT3AB*, ZD6BX*, CE4DZ*, and MP4BBL, MP4QA, OD5LJ, VQ6LQ, ZBITA, HZ1AB, VU2, VQ4AG, VQ3CF, FB9BR, ET3AB, XE2KW, CE3QW, F18AU, ZS5BF, FA8RJ, JZODN, Neville 2APL: HS1D*, FK8*, and HA5KBA, ET3Q, Alan 8CX: ZD6BX*, FO8AB*, VQ6LQ*, VR1RO*, Allan 3HL: VSSKU*, Gs*, LA3HA*, LA4RD*, SMs*, ON4FQ*, KP4JE*, KP4AZ*, VR3A*, OHs*, VP6KI*, MP4BBL*, KV4AA*, HB9MO*, DLs*, EIBY*, VS1*, VS2*, G1BQQA*, OZ5KQ*, F18A0*, AP2Q*, PA0QF*, Eric 4EL: SM*, G*, HB9*, OH*, Bob 4RW: VK1DY*, VK1EG*, VSSKU*, ZS1PL*, FB8BR*, OQ5PU*, E1KQ*, LU3DAB*, YU3BC*, VQ3CF*, ZS81X*, OQ5CF*, VS1*, ZS6VS*, VQ4BNU*, VQ4EZ*, ET3GB*, ZE4JE*, ZD6BX*, ZB1CH*, CT3AD*, GI4R*, CR8AF*, Doug 5BY: ZD2DCC*, FFBJC*, VR3A*, John 5VI: VQ2W*, DU1SCS*, Rob 5RG: DJ*, VS8*, DL*, VU2*, VQ2EZ*, GI4RY*, OH*, G*, SM*, JA*, OD5L*, Ray 5RK: HS1D*, DU1CV*, JA*, F8*, OH*, Austin 5WQ: HZ1AB*, DJ*, LZ*, HA5KBA*, MP4QA†, YV5FV*, LU8EN*, V85KU*, CE4AD*, AP2Q*, OE3HW*, FR7ZA*, ST9GB*, KP4AZ*, OA6ED*, OZ7BG*, ZS1GQ*, ET3GB*, OD5LX*, G*, HB9RX*, HB9MO*, ET2US*, MP4BBE*, FT7DO*, CN81B*, KV4*, EA4CE*, Doug 7DZ: HB9*, OE*, KP4AZ*, AP5TM*, SM*, ST2AC*, VQ8CB*, OD5LX*, YU3FB*, GI4RY*, PA0*, VR1RO*, SV1AZ*, YU1FC*, 7KM: VR3A*, VR4*, VS1*, VSSKU*, VS6*, CR8AF*, XE*, KP4*, KV4*, VU2*, LU*, CT1*, SM*, OH*, DL*, OE*, ON4*, PA0*, G1*, BERS195: CE3RE, CT3AB, DU1VQ, ES1D, FK8, FO8AB, HC1FG (0700z), HS1D, KA9, KP4AZ, KR6, KV4, LU8EN, MP4BBL, OD5LJ, VK1DY, VK1PG, VK1EG, VR3A, VR4RO, VR2AS, VQ2LQ (1430z), VR2, VS1, VS8, SM8CWC/MM.

14 Mc. Phone: 2PA: ZC5R*, ST2DB*, OQ0DZ*, VQ3RJ*, FA3JY*, 2RS: OA3C*, 2AAB: ZC5VR*, KA0IJ*, Ted 2ACD: 4S7*, KA*, VS2*, Gs*, KC6ZB*, CN8*, OH*, VU2*, F9*, PA0*, EA3YR*, DL*, HG0J*, and YK1AA. 2AHH: VQ4ERR*, VQ4EU*, 4S7SS*, 2AMB: VK1FG*, VK1DY*, OZ6BL*, ZS5PG*, ZS5DE, CE3HG*, CE3QJ*, OH*, VS2* and VQ4EK, ZS1SW, ZS4GK, ZS5U, ZS5JM, OA2A, 2APL: KA*, Ken 3CW: ZB1*, 3HL: DL*, SM*, VS2*, Stan 3TE: CM9AA*, DL*, DU1YQ*, EA2*, EA3*, EA7*, EI2W*, ET2MZ*, F3*, F18BB*, G*,

GW3FYI*, GW3EQL*, HB9GS*, HZ1AB*, HZ2AEH*, KA0IJ*, KA*, KC8UZ*, KC8ZB*, LU4BW*, MP4BBL*, MP4KAC*, OA2A*, OE1WH*, OE25P*, OQ0DZ*, PA0NU*, VE*, VQ3RJ*, VQ5EK*, VQ6LQ*, VR2*, VR3A*, VS1*, VS2*, VU2*, XZ25T*, YUIAD*, ZB1EB*, ZB1LG*, ZC5VR*, 4S7PJ*, 4S7YL*, 4S7SW*, 4X4s*, Fred 3YS: ZM6AT, VR2. John 3AKO: OH*, 4RW: VR3A*, ZP5CG*, ET2MZ*, ZD6RD*, KC6ZB*, CE3PV*, 5HI: ZS1SW*, KL7FAP*, KG4AP*, CE3QJ*, 4S7YL*, GD2FRV*, YV5DL, KB8BA*, 5RG: HZ1AB*, VU2*, DL*, 4S7YL*, OH*, OZ7UO*, 4S7FW*, 5WO: LU7AA*, MP4BBL*, VQ6LQ*, DJ*, 4X4DK*, DL*, HB9J*, 4X4CX*, CN8EE*, 4X4FV*, MP4KAC*, EA3CY*, CT1CI*, VU2*, HB9JW*, 4S7YL*, ET2MZ*, Y12AM*, YV5FK*, CT1FY*, VS2*, CN8MZ*, EA9AZ*, EA9AR*, FA3Z*, OA2A*, VP6GN*, KP4MZ*, ZB1DK*, KA*, KG6*, VQ3RJ*, TDZ: 4X4FV*, E1K*, MP4BBL*, Y12AM*, KG4AP*, KG4AF*, ET2MZ*, KP4WD*, DU1ES*, BERS195: CM9AA* (0315z), DU1AF*, KA0IJ*, KG6*, KV4, MP4KAC*, OQ0DZ*, VS2*, 5A3FT*, W4VU/MM (S.S. "Pioneer Ref.", Jim Hunt: CT1FY*, PA0NU*, SU1AS*, SU1CX*, OE13WD*, OE1WH*, AC3FT*, AC3SQ*, YK1AA*, MP4BBL*, HZ1AB*, P11J*, HSIWR, 4X4s: SV0W/MM, F8, YU, ZC4JA, HB9JW, ZB1LG, OH, ZS1SW, DL, HZ2AEH, VQ8CB, VQ5ER, VQ5EK, VQ6LQ, VQ3RJ, CN8EE, CN8MM, VQ4FF, VQ4EZ, VQ4AQ, VQ4FK, ZE2KI, 5A2TZ, 5A4TR, 5A4TU, ET2US, ZS6OY, XS6TE, EA2CY, EA2CQ, VP6GN, VS6, 4S7YL, VP2KM, CK2CO, LU6AJ, PY2CK, Gs, FK8, VS2, F18BB, VK1PG, KR6, VU2, VE.

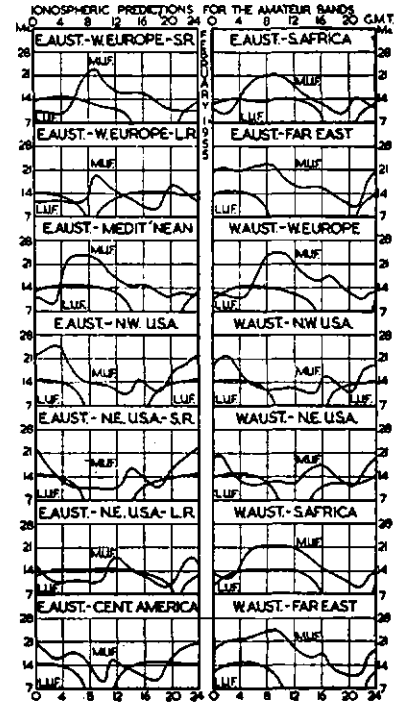
21 Mc.: 2AHH: JA3JM*, Noel 2AQH: CE2*, KM*, HP3FL*, 4S7YL*, 4EL: 4S7YL*, KW6*, KA*, KC6ZB*, KL7BFW*, CE3EO*, KG6*, JA*, VS1*, HC1FS, W2JAC/MM*, W4VU/MM*, PY2CK*, G8SY*, G3HCU*, G3BXI*, OH*, VS6CZ*, 4X4BX*, ZS2AL*, SV0WM*, PA0VN*, 4RW: 4X4CX*, 5WO: HC1FS* (0230z), VS1FE*, 4S7YL*, Jim Hunt: Gs*, 4X4DK, SV0WO, OE1WH, DL, PA0ALO, VU2, VS1FE, 4S7YL, DU5V, KW6, KA, XK6, KJ6, HC1FS, PY2CK, ZSSNJ, VQ4VL and Ws.

27-28 Mc.: Short-skip signals to all VK States and ZL land were reported by Norm 2ALJ and Jim Hunt.

Rare QSLs were received by: 2QL: IT1AI, 5WO: MP4KAC, OD5AB, KTIWV, VQ6LQ, HK3PC, HP3FL, BERS195: VK1EG, VQ4CQ, MD5AK, HB9IX/MM, W4VU/MM.

Thanks to the Northern and Southern California DX Clubs and their Bulletins, PY2AJ, VKs 1DY, 2GW, 2PA, 2QL, 2RS, 2AB, 2ACD, 2AHH, 2ALJ, 2AMB, 2APL, 2AQH, 3CW, 3CX, 3HL, 3TE, 3XU, 3YS, 3AKO, 4EL, 4RW, 5BY, 5HI, 5RG, 5RK, 5WO, 7DZ, 7KM, and s.w.l.s. BERS195 and Jim Hunt.

PREDICTION CHART FOR FEB., 1955



† Hans J. Albrecht, 10 Belgravia Ave., Box Hill North, E.12, Vic.
* Call signs and prefixes worked.
z—zero time—G.M.T.



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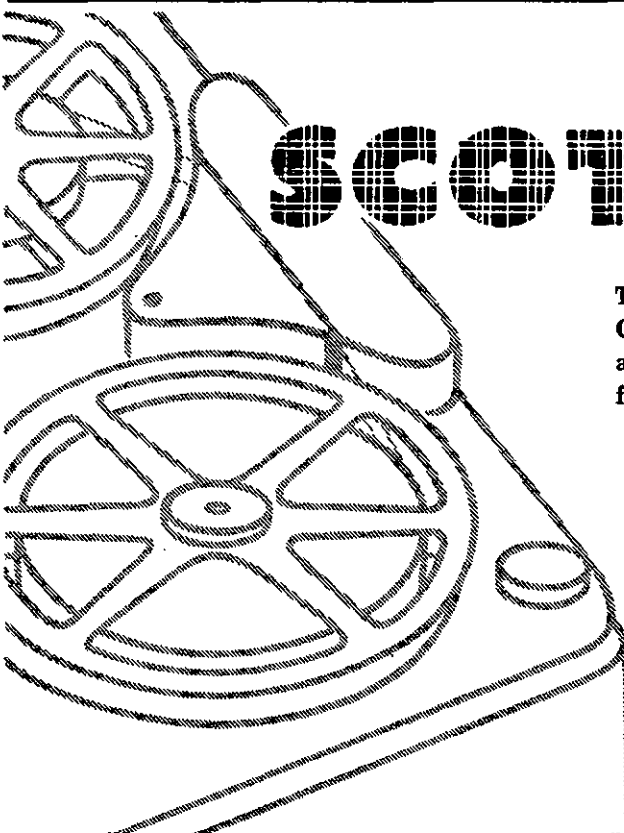
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FEDERAL, QSL, and DIVISIONAL NOTES



FEDERAL

DX C.C. CERTIFICATES

Interest in the competition re the designing of this Certificate has prompted inquiry as to what is required in the matter of wording. On the old Certificate the letters "DX C.C." were overprinted with the words "Wireless Institute of Australia." This was followed with "Certificate of Award granted to on having established two-way radio communication with one hundred countries," together with spaces for signatures of Federal President, Federal Secretary, Date of Issue, and Certificate Number.

T.V.I. BOOKLETS

Many members have already sent for and received the latest edition of Remington Rand's informative book on T.V.I. Executive were fortunate in obtaining a generous supply of these books with the result that they are still available. However the number is limited. Members desiring a copy are requested to send a letter to the Federal Secretary together with 7d. in stamps.

DX C.C. MANAGER

After many years of sterling service the DX C.C. Manager, Geo. Morris, VK3BZ, has indicated that he wishes to relinquish his duties. Many members who have obtained the coveted award of DX C.C. are indebted to Geo. who has had to carry out the necessary checking and arranging for certificates.

In view of this forthcoming resignation, Federal Executive is looking for a successor to Geo. and those interested are referred to the announcement in another part of this issue. Here is a splendid opportunity for some interested person to carry out a very worthwhile and informative undertaking.

HANDBOOK FOR OPERATORS OF AMATEUR WIRELESS STATIONS, 1951 EDITION

The Amateur Administration has announced that the 1954 Edition of the Handbook for Operators of Amateur Wireless Stations is now available from the office of the Administration in Melbourne, or from the Superintendent, Wireless Branch, in the various States.

This book is prescribed for examination purposes and many members will be interested in it for this purpose. Besides this, paragraphs relevant to Limited A.O.C.P. are now included.

FEDERAL QSL MANAGER

BAY JONES, VK3RJ, MANAGER

The Junta Central Fallera, Valencia (Spain), official bureau for the world's most famous Festival of Art, has organised, together with the U.R.E., a competition to be staged between 1st November, 1954, and 31st January, 1955. The contest consisted of communicating with EA3 stations situated in Valencia. Diplomas and badges will be awarded to the winning stations. For stations situated in Oceania, a minimum of two contacts were required before an application for an award could be made. Applications for awards together with confirmatory QSL cards must be made to U.R.E., Apartado de Correos No. 3, Valencia, Spain. Like most of the contests staged by European countries, the particulars were forwarded by surface mail and did not reach here until the contest was almost over.

News from Bill Storer, VK1EG, as at 23rd December. Bill had run up a total of 105 countries to that date. Shortly before Xmas, Bill had the misfortune to get his right hand squashed in the hydraulic system of a tractor. Fortunately no bones were broken, but the injury was painful and necessitated Bill sending his official traffic with his left hand—a slow, painful and laborious undertaking. The injury also kept him off the Amateur bands for a period. He is looking forward to his return to VK and to his impending marriage. Reckon Roy 4FJ should loan Bill his new Mark VII. Jaguar for the honeymoon—it's just a suggestion, Roy.

Chas VK1AC, now back in Australia, speaking to the writer from Macquarie a few days prior to his departure, expressed his disappointment at not making the 100 countries. Chas had run up 88 to that stage, but despaired of adding to the total before he left. Take heart, Chas, many knowledgeable DX men during their stay down there could only manage much less, Bill Storer, when VK1BS, could only manage 68. Southern Europe, the Mediterranean, Northern Africa and South America are particularly difficult to QSO from Macquarie.

The following gratifying letter has been received from Ray Herbert, 3A2AL/VS5KU/

GZKU. I quote: "For the last few weeks I have been operating VSSKU, from the Shell Co. Rest House at Seria, Brunel. The station has now been closed down as I return to England today (22nd December). Operation has been on 14 Mc. c.w. only and about 280 VKs and ZLs have been worked, the contact being a new country for most of them. Due to air travel, the gear had to be very simple. The rx is the size of a box camera, and weighs under 2 lb. It is a four-tube superhet. The tx is on a QSL sized chassis and ran at 20 watts; weight, 2 lb. The VKs and ZLs worked were very well behaved indeed, never calling out of turn and always ready to help with information of other DX calling. QSLs will be sent out in February on a one for one basis. QSLs to me should go to R.S.G.B., or direct to the call book QTH of GZKU: 9 Baldwin Avenue, Eastbourne, Sussex, England. Please pass on my thanks and 73 to all for many pleasant QSOs." Quite a pleasure and a refreshing change to receive such letters and am glad to have been numbered one of the 280.

Have enquiries as to whether any cards have been sighted from VK1AF and VK1RL, but must answer in the negative. However, I do not see many of the outward bound cards.

NEW SOUTH WALES

The December monthly meeting of the W.I.A. (N.S.W. Div.) was held at Science House, Gloucester Street, Sydney, on 17th December, 1954. The President opened the meeting on time and after the usual introductory features, the President outlined the objectives of the Division and reported on the work which has been done. A detailed report on the scheme to acquire a home for 2VI was outlined by the Secretary, who also reported on the work done by the committee of which he is the chairman, and we feel that most members were agreeably surprised at the amount of work which these gentlemen have put into this project. A motion was passed empowering the committee to proceed with the negotiations in hand and to report to Council from time to time.

The Adams Cup was presented to the winner, N. Southwell, 2ZF, and all were pleased to see this Cup presented to him for the second successive year.

The lecture for the evening followed, delivered by Noel 2ZF, his subject being Single Sideband Exciters. Noel made his lecture interesting and informative, delving deeply into the intricacies of the technique, and finally convinced many of the attentive audience that s.s.s.b. transmission had many advantages over the technique more commonly employed. The vote of thanks was moved by the President and carried by acclamation.

Owing to the holiday atmosphere at present prevailing the whole State, we have no reports from correspondents this month but hope that the coming weeks will show a change for the better in this regard. The main gleanings from all bands this month appear to show that all had a good Xmas and it appeared that most of the chaps really enjoyed themselves.

The Broken Hill gang are really getting organised. Dudley 2DQ has put in some fine work with his s.s.s.b., and running the full five watts really gets around. 2ALL and 2AYS have been busy indeed, the hot weather frequently forcing them to peregrinate to the more congenial air-conditioned building down town, but nevertheless they do put in a lot of time on the air. 807s have been the main topic. Jack has a nice 750 now and Lou, not to be outdone, has an AR7 which is doing a good job for him.

There will be a new call on from the Silver City in the very near future we hear, congratulations old chap. 2AHH from Kempsey is touring and we had the pleasure of a visit from Noel, Olive and family recently. 2AJQ (Bathurst) is on the air again and in between travels on official business will wear a track down to Sydney on 40 mx we hope.

Remember the coming Convention at Uranga, Easter week-end; book in as soon as possible with 2AVG or 2AHH.

SILENT KEY

It is with deep regret that we record the passing of:—

Arthur Tonge, ex-VK4AR.

VICTORIA

The next general meeting of the Victorian Division of the W.I.A. is scheduled for Wednesday, 2nd February, at 8 p.m. in the Radio Theatre of the Melbourne Technical College, when a lecture will be given by a member of the staff of the College.

80 METER TRANSMITTER HUNT

Bob 3OJ picked out a most delightful spot for the Xmas wind-up of the 80 mx tx hunt. The tx was hidden at "Heaney Park," some eighteen miles from Melbourne in the Ferntree Gully area. The Park itself was an excellent place for a picnic with tables and seats set under shady trees, hot water available and also had a huge swimming pool. Most of the children had brought along their swim suits in the hope of such a treat, but the only thing that Bob couldn't provide was the weather which wasn't the best as it was showery on and off most of the afternoon, but this didn't dampen the spirits of the tx hunters by any means. Six equipped cars started from the assembly point where Syd 6SJ, who was touring Victoria, came in to have a word with the gang before they started out.

Bob 3OJ, the hider of the tx, used a half wave doublet aerial supported on gum trees twenty-five feet high and supported in the centre by his 2 mx antenna with a co-ax feed line coming down the inside of a tubular steel mast. The overcast conditions and low cloud ceiling played tricks with the signal, resulting in the fact that every one of the competitors had to open their sealed envelopes. Bob hit on a good idea in regard to the sealed envelopes by writing the directions on one side of the paper and sealing this down, then on the other side of this folded sheet he gave a bearing with the words—"proceed in a south easterly direction"—then folded this over and sealed it down, so that if a competitor lost the signal he could open up the first section and proceed in the direction given until he picked the signal up again. However, even this little clue was not enough this time and once again the tx has won. Eventually all the competitors arrived at the location with the exception of Eric 3ADU who managed to get himself into a spot of trouble.

During the past two years, 80 mx tx hunters have spent a considerable amount of the countryside of Victoria and found out what lovely spots there are if you only go a-hunting in all, 28 attended the hunt which concluded with a picnic tea during one of the brief spells of sunshine. What about building some 80 mx receiving gear and come along and join in the next hunt.

The next Tx Hunt will be held on Sunday, 13th February, 1955.

CENTRAL WESTERN ZONE

Pleased to see that a call sign has been allotted to Keith Temmler, 3ATS, of Murtoa, a big welcome Keith. Many had the pleasure of f.b. contacts with Chas 1AC on Macquarie Island. By the time these notes go to press, we will have welcomed Chas back to these parts where he will be doing some holiday relief at a local broadcasting station. 3AFO has been busy building a high powered rig using 807s in the final and employing super modulation; hope she performs to your expectations, Merv.

Byron 3TA has erected a new set of rotary beams for 20 mx and 2 mx and according to reports they are working satisfactorily. Trev 3ATR and Herb 3NN have been busy with harvesting operations, but still manage to get on the air occasionally. They often work the Horsham bands on 2 mx with good signal strength. Jim 3DP and Keith 3AKP have also been active on the 2mx band and at present are doing a spot of re-building to their respective rigs. Bob 3ARM was on the air recently after a couple of months re-building and seems to have made an excellent job as his signal was f.b. Heard that Allan 3HL is now rapidly improving and will soon be

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100 per cent. again, sorry to hear that your son and daughter have also been on the sick list Allan, sincerely hope that the New Year brings you all back to normal health.

NORTH EASTERN ZONE

Stan 3AGT is heard on the bands from time to time and Frank 3ZU was reported to be testing a new n.b.f.m. all-band tx a while back. Henry 3HP is now well wound up on his VL3 Fire Brigade network, and probably Des 3BP is using his spare time to good effect helping him; incidentally, the impression is that is where Ron 3AQQ spends some of his radio time too. Howard 3YV was one of the interesting people Ken 3KR met at a social function at Benalla a while ago. It is understood that an Amateur who hopes to make a welcome appearance in the zone is Bruce 3QC.

One of the bright spots in January "A.R." was that article by Jim 3JK on the conversion of the BC series txs to the various Amateur bands. Also in the January "A.R." was a short and interesting article by Les 3ALE. The Editor can still use some more if anybody is interested in writing up their pet equipment.

Jack 3AKC was reported to have enjoyed himself on the Mt. Stanley venture mentioned some issues ago. Vic 3ABX was on the track of a good communications rx recently, while Jack 3PF is reported active on his Rural Fire Brigade net. Lex 3AIL is building a converter to work his AR8 on 21 Mc., and Hugh 3AHP is heard of from time to time. Alan 3UL was recently hard at work on his new v.h.f. equipment, and Syd 3CI was wading into the 8 mx openings. Keith 3JC must be sticking to the 20 mx DX. Although little is heard of Johnny 3ACK, Murray 3HZ was written up in the provincial news-sheet reporting on the opening of the improved operating facilities at the local Commercial BC station.

A very interesting hour or so was put in recently while Des 3CO detailed the working of a communications installation, amongst other things it was learnt that Doug has been allotted the call sign 7LJ. Chas 3ACW was seen at a distance recently, and again from that provincial news-sheet, Alex 3AT and his XYL are receiving congratulations on the arrival of a harmonic. Ross Col 3WQ is heard on the air quite regularly, but the same is not reported at the moment of George 3GD and Tom 3TS. However Peter 3APF and Brian 3ASF are both

heard of indirectly. It is thought that Clarry and Vern are still "on deck," as is Jim, but nothing has actually been heard of our Associates just recently.

EASTERN ZONE

There has been quite a bit of activity of late. Joe 3TO was heard testing some new equipment recently. Ron 3PR has been on the air over the holidays, but believe he was not feeling quite his normal self, hope you are OK now OM. Doug 3ASE and XYL were last seen heading towards his old stamping ground at Inverell in VK2. Jack 3FK and family set out for Adelaide, not only to run the new Velox in, but also to collect a long awaited AR88 coming from G-land. Ossie 3AHK will most likely acquire Jack's S840 now, so let's see you go to it and work the DX Ossie, you only need to work another 99 countries for the DX C.C.

Leo 3SG is very quiet, nor has Arthur 3ABF been contacted for many moons; guess he is too busy keeping the local ABC rig going. Bill 3TY, at the opposition station, is on the bands when time permits.

QUEENSLAND

If you know of anyone interested in the Listeners' Group, which will hold a meeting in February, please contact the Secretary or pass the information on to the persons wishing to join.

This Division would like all members to submit ideas for the proposed holding of an Annual Convention to the Council for consideration. They hope to piece something together from your ideas to make it a successful event, so everyone will want to come again. What about it chaps? Let's have them.

The Xmas get-together went off very well with some 30 there, but it was surprising how long it took to dispose of the liquid refreshments and some three persons were left around the wee small hours looking after the little that was left, while the philosophising by them was long and varied. An extra good get-together, and hope to see more there next year.

It is coming around to the time when we should be giving thought to the new Council. The old Council has been on the job for many years now, so what about giving considerations

to what sort of a job you could do to put the Division in the fore-front of affairs again. There is certainly a job for your talents instead of leaving it to a few to carry the burden. We find most of the Council at present have several duties to perform and would welcome the chance of shedding some of the load. So please, your nomination!

Well chaps that's all, holiday time is not conducive to writing. See you at the meeting.

It is with regret that we record the passing of Arthur Tonge, ex-VK4AR, who was prominent in W.I.A. affairs pre-war in Queensland. He was a member from early 30's to 1939. The Division extends their deepest sympathy to his relatives.

SOUTH AUSTRALIA

The VK5 Division of the W.I.A., the Division which is always on the ball, held its monthly general meeting for December in the club rooms and as is the usual practice it took the form of a Xmas Get-Together. More than a hundred members and visitors came along armed with loads of goodies and the spirit of Xmas, and a jolly good time was had by all. Naturally very little business was transacted and the main entertainment for the night was provided by Associate member Geoff Smith, who gave an illustrated talk on his recent trip by caravan to Mt. Buffalo. Geoff excelled himself in his talk, both from the excellence of his coloured slides and also from the amount of information he conveyed concerning the trip without talking too much. He concluded his talk with a selection of slides taken at the time of the visit of Her Majesty the Queen to Adelaide. "Doc" 5MD, in his speech of thanks, summed up the opinion of all present in a few well chosen words, and the prolonged applause at the close of the vote of thanks was clear evidence of the success of the talk.

A short "smoke-oh" followed the talk and this gave the Council members a chance to set the tables with the goodies and the liquid refreshments ready for the combined attack of the members. At a given signal the members lined up and made a combined attack on the tables, and for a half-an-hour or so no sound was to be heard but the steady munching and crunching of the members' jaws as they did

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their best to make the tables look like Mother Hubbard's cupboard. It goes without saying that they succeeded beyond their fondest dreams, and at the conclusion of the feast it was impossible to find even a crumb on any part of the tables, which speaks volumes for the appetites of the members and also for the quality and quantity of the goodies brought along by the members.

Once again it has been proved beyond any doubt that this type of Xmas Get-Together every December meeting is just what the members want and the splendid attendance of members plus their obvious enjoyment with the goodies and the rag-chew, means that the Xmas Get-Together has come to stay. Members of the Council deserve every praise and thanks for the way in which they carried out their individual duties, and can sit back and feel well satisfied with their efforts in the 1954 Xmas Get-Together.

Among the welcome visitors were Messrs. R. Sedunary (5KS), C. Moule (5CX), R. Grundy (3EG), D. Tacey (5DW, ex-3DW), W. Beaney (5WB, ex-4BV), and of course John Clifton (5HI). We hope that all these gentlemen enjoyed themselves and we also hope that we will see them at future meetings, although of course John 5HI can only manage to attend the Xmas meeting due to the difficulty of transporting him to and from his QTH. Incidentally, this transporting is usually handled by "Doc" 5MD and Ken 5KC in the usual Amateur spirit, and our thanks go to them for the gesture.

As chief steward, it was my duty to keep the liquid refreshments flowing and it was whilst carrying out this welcome duty that I hatched my little plot to clear the 20 mx band of VK5 signals the following night, and thus work myself some DX. I put aside in the kitchen all the strawberry sponge cakes, all the iced fancies, all the cream cakes, in fact anything that would come in handy to hand round at the conclusion of the feast to all the well known DX men, in the hope that they would be so indisposed next evening that the said DX would only have me to come back to. Well, did I fill them up? By the time that I had been around three or four times to these jokers, the mere sight of me appearing at the kitchen door was enough to turn them green at the gills, and finally to tempt them further it became necessary for me to have a nibble or two at the iced fancies, etc., just to show them that all was on the up and up.

The DX was extra good the following night—but I only heard secondhand, because the doctor advised me to stay in bed for a day or two to get over my billious attack, in fact he said that if I did not do as he advised, my fallen chest would remain in that state indefinitely. (Wonder if the doctor was a DX man?—Ed.) Just goes to show how low these DX men will stoop to block me, filling me up with cakes, knowing how weak and delicate my stomach is. Anyway, I bet I had a few mates!

Quite a number of regulars did not put in an appearance at the meeting and I heard later that the reason was that members of their families were laid up because of colds, etc. We hope that all are well now and we were sorry that you could not come along, nevertheless we will be back in the same spot next year and then you can come along and make up for the good time that you missed this year.

SOUTH EAST AREAS

The first news of importance from the South East, as far as I am concerned, is that I have a new correspondent for the monthly notes in Stuart 5MS, Colin 5CJ having apparently thrown in the towel. I trust that it is not because I have been such a slave driver in the past, Col, but anyway you have done a good job for many years and I sincerely express my thanks for all your help. Hope that you and yours are in the pink.

5KU and his XYL, in other words, Erg and Joyce, had the best Xmas present in the world this year in the form of another bonny bouncing boy, and all are doing well. It has not stopped Erg from continuing his c.w. activities because he reports several new countries added to his list this month. He has been tinkering around with his beam a little but cannot see any change in the results. 5FD has been noted as being a little more active in radio and reports that the family are progressing very well. Apart from a few fireworks on Guy Fawkes Day from his electrolytics, John finds everything working well. It is to be hoped that a few more hot days will come along soon because it would appear that John only comes up on the air when it is over a century.

5CH is still building his shack: what a shack it must be, he has been on that shack for the past four months; it certainly cannot be a little shack!! Anyway, Claude is still finding time

to build up some test equipment and the examples of his work which were displayed at the monthly meeting of the S.E. boys spoke for themselves in no uncertain manner. Will we be seeing you down here soon Claude? For one exciting moment, when I glanced at Stuart's notes, I thought that John 5JA had at last been heard on the air. However, on second glance, I find that he will soon be starting on a new business venture, and therefore will have even less time for activity in connection with Amateur Radio. Oh well, I can only hope and pray.

5TW is listed among the missing this month and it has even been suggested that he was an absentee from the monthly meeting because the tea and sugar subs. were due. Speaking for myself, and knowing Tom as I do, I refuse to believe this libel and can only think that he has been so busy at his vocation that he has had no time for anything else. As a fellow worker in the broadcasting game I know just how busy one can be. Ahem! 5CJ, if all reports can be believed, thoroughly enjoyed himself at Xmas time, but Xmas time or not, Col managed to be heard on 40 and 2 mx at times. Leo Magrath (is that spelt right Leo?) now has his limited ticket and hopes that a number of the boys will be active on 2 mx to give him his chance to do some experimenting. I think it will be a certainty, Leo.

From Naracoorte comes the news that Brian Gellet, of Hynam, also has his limited license and is hoping to take the extra license in March, but harvesting activities are proving a bit of a stumbling block. Associate member Jack Fowler is fully occupied with bushfire radio work this time of the year, as is 5CJ, 5JA, and many others in the district. 5MS has been operating mostly on 40 and 20 mx, although he did put in an appearance on 15 mx using his 80 mx antenna for that band. I gather that Stuart was most active over the Xmas period dodging the XYL who seemed to have the most peculiar ideas as to how to spend that period of the year. It goes without saying that she eventually caught up with him and persuaded (the word is mine!) him to build a new front fence, although he managed to contact two new countries in between. I also note that he has been doing a good bit of testing his equipment with an audio oscillator and a c.r.o. and managed to find quite a number of things that do not show up on the air. I did some testing along the same lines once, but gave it away very hurriedly when I saw just what was living inside my modulator. As for what was in the tx, well, only a crayfish and beer supper could produce such a revolting collection of animals. Never do it, Stuart, leave well alone!

Several visitors called in at Mount Gambier over the Xmas period and included Syd 4SE, who stayed around for the best part of a month, and also Bill 3EL who was around for the New Year period.

By the time that these notes are being read it is hoped that the R.D. trophy will have been on display at Mt. Gambier during the week that it will be proclaimed a city and also that the two boys that made such a grand showing in the contest will have been given the publicity they deserve. Naturally I refer to Stuart 5MS, who did so well in the phone section, and also Erg 5KU, who held more than his own in the c.w. section. We salute you boys.

At this time each year in the magazine I usually apologise for not being able to answer all of the Xmas and New Year greeting cards that find their way into my tent, much to the annoyance of my harmonic and the XYL, who have never been able to see my fatal fascination for the members of the opposite sex. The real reason for my inability to reply to them all is the fact that my £3,000 a year salary is usually in a decidedly sick state at this time of the year and I only have my salary from the magazine to splash about on greeting cards, etc., etc., and of course that does not go very far (compilation department, please note!). [Being a semi-skilled journalist, we are raising your salary 1/4 times—Ed.] However, I do appreciate the good wishes and can only think that if you are all fair dinkum about these notes, then you must all be as weak in the score as I am. To those Amateurs who so correctly summed me up and sent me greeting cards which should have been packed in ice, I also say thank you, but I have a team that will lick yours any day; to the XYL of Jim 5FO, many thanks, but do I really remind you of that quadruped, and did you have to wish me "better thoughts"? To the devoted pair of readers from Geraldton, also many thanks and spare my blushes, and last but not least, thanks again to all who used the Xmas period as an excuse to have a shot at me. After all, if I expect you fellows to take it in the spirit with which it is dished out, then I must do the same. Off the record, I lapped it up!

Wyk 5WM announced his engagement this month and of course has had to put up with ribald remarks and suggestions. He has not introduced me as yet to the lady of his choice, and if the truth is to be known, does not intend to do so. However, if he thinks by doing this that his intended will not learn the dreadful truth about his evil smelling pipe, then he is in for a shock, because if necessary I will bottle a sniff or so of the smoke (flattering name) and send it to her as my share of the Gypsy's warning. POOHHHHHH!

Quite a number of Amateurs visited the city of culture and high ideals (Fincott please note) over the Xmas period and included Ray 3ATN from Birchlip, Leo W2JAC (of the Pioneer Glen), Cliff W6 (of the Sierra) and also Les Fiedler (ex-5SL and now an electrical contractor 50 miles or so from Perth), who was passing through to VK3 on a holiday, after an absence of twelve years from Adelaide. It was good to see these fellows, and Ray 3ATN gladdened my heart considerably by telling me that he had found his soul mate in VK5 and might possibly in the future have a VK3 call sign. Another deserter from the cause of Fincott, my propaganda is at last reaping results.



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Due to the absence of quite a lot of the local boys on holidays, etc., I have not been able to gather much news of interest and naturally am finding it difficult to keep the VK5 column for this month representative of such an exalted Division of the W.I.A. I could perhaps pad these notes a little and thus keep up the good name of the Division, but never let it be said that Parsons sank to such a low level as to pad in order to keep in front. Nevertheless and notwithstanding, but mostly with sitting, if there are any Amateur gardeners among the boys who need any advice as to how to grow vegetables, flowers, etc., then write to me, I am an expert. This year has been my most successful year of all time. Not a thing came up in the garden and my XYL is thinking of taking the said garden over. What better results could you get than that. I ask you!

WESTERN AUSTRALIA

The Christmas meeting of the Division took the form of the usual social, and many were the yarns swapped about that new rig, the DX that got away, etc.

In one of his Sunday morning broadcasts from 6W1, 6GH pointed out the threat of t.v.i. which hangs over our heads with the advent of television broadcasting in this country. It may be a couple of years away for VK6 as yet, but now is the time to get to work and get rid of excessive harmonic radiation from the rig which may possibly be the cause of future trouble. Even t.v.i. proof rigs can give trouble though, can't they Tom!! Anyway, there's going to be quite a lot of re-building necessary, and yours truly is going to be right in the thick of it.

6KO, from Merredin, paid a visit to the City early in January with tidings of proposed v.h.f. activity in the wheat-belt Merredin-Bruce Rock area with 6DV should be a good thing for a start QM. Nothing heard yet on the bands of 6QO, but time alone will tell. It's about time that super pro did some work. Frank, 6OR having a little difficulty rotating the beam at present; did I hear you say the tower had sunk at one corner Jack? Looks like a job for a jack or some such.

6DX was another country visitor and dropped in on 6BO on the way through. During short skip bursts on 14 Mc., both Bill and Bernie, 6KJ, of Albany, have been coming through in fine style. 6EC has his camera tube operating—this time with a positive picture and resolution very satisfactory. Next project is the installation of a proper receiving tube to replace the 6BP1.

While down in Perth during December, 6WG witnessed some of the QRM experienced by the 70 Mc. taxi stations from Sydney and Melbourne services. I am told there is no truth in the rumour that Wally got on the mike and called CQ DX! Sid 6SJ was heard from 3ATN during the month, working back to 6GU at Fremantle, who will be tied up with a shift of QTH to Manning Park shortly. Have to get the construction gang on the job of lowering the tower John.

6AF dropped in the other day to say hello and to demonstrate some of his tape recordings—not of Amateur transmissions though! 6LT must have been stirred by remarks last month—or something. Anyway, heard stations calling him on 50 Mc. recently, so he must be on the air.

Have not heard 6AS about since the 40 mx scramble, although 7 Mc. conditions have not been exactly A1, so maybe that accounts for the apparent absence of a large percentage of country stations. 6LL has been heard on 14 Mc. from his new QTH at Victoria Park, which is purported to be much better than the old one. When does the beam go up again Clarrie?

TASMANIA

The notes for this month will be rather short owing to the fact that I have been out of touch with all matters radio since Xmas and am enjoying myself camping, boating and fishing with not even a h.c. set or newspaper to keep in touch. I confess that I did intend to bring along the 144 Mc. mobile rig, but that developed a fault at the last moment and had to be left behind. Anyway the fish, food and weather are all fine and I don't intend to seek civilisation again until about 19th January.

The urge to get away from it all also hit 7LJ recently when he started out on a trek through the little known mountains of the West coast, but unfortunately it started to rain as he went out his front gate and didn't stop until several days later, so the trip had to be abandoned. Lon had dreamed up a nice little rx to take along just to keep in touch, but lack of time prevented it becoming a reality; perhaps next time Lon.

Speaking of dog-houses, which we weren't, but you never know, Doug 7DZ spent a most uncomfortable night recently so my spy reports. It seems Doug sat struggling in the shack until 3 a.m. waiting to work a VK1 and when the big switch was pulled and Doug staggered bedwards he found all the house doors locked and barred. Frantic hammering on the doors failed to make any impression and a most uncomfortable night was spent in the car—so beware you blokes, it does really happen sometimes.

The January meeting did not go so well according to the grapevine, and even grapevines can reach this rather remote spot. Apparently very few members attended and the evening was spent in looking around the bands in the TWI shack and when somebody picked the lock on the supper cupboard, a cup of tea was enjoyed by all present. There was probably some confusion regarding which Wednesday the meeting was to be held and some members seemed to be under the impression that it would be on the second instead of the first Wednesday in the month.

Special QSL cards for TWI operating portable from the Queenstown Exhibition several months ago will soon be sent out to all stations contacted. The cards were designed and printed by Lon 7LJ and have turned out a really good job, many thanks for a job well done Lon.

Bob 7AF is trying his hand with an electronic bug; does this mean an early comeback in the near future from the new location Bob? Joe 7BJ still struggling with a 2 mx rig and I am beginning to have doubts that it will ever work; the last I heard, the modulator was developing 2 mx oscillations, but the tx would not.

Well that's all for this month, anyway I've got to finish now because I've run out of paper. Ah well, life's a struggle, hand me that fishing line Mum!

NORTHERN ZONE

For several months Launceston Amateurs were laboring under great difficulties due to intense power line noise, which in some areas also blotted out test cricket broadcasts. Finally 7LZ and 7PF did some fine d.f. work and localised the noise at one particular street pole and advised the Hydro. A few days later the power supply authorities were able to clear up this annoyance. Since then 7LZ has been able to work 50 Mc. right and left. 7CA was home for Xmas but had a bad bout of flu. Max has now gone back to the Islands and has a Type 3 Mk. II. with him and is on the lookout for contacts.

For our last field day 7XW took zone president 7RK at his word, "that the world was wide open," and cleared off to Perth with his 2 mx tx. Believe it or not, Pansy, but 7GM ultimately located the tx. As these notes are being written, 7GM is still on the mainland completing his holidays.

On the 144 Mc. front there has been quite a lot of activity in preparation of the 1855 series of hidden tx hunts. 7BQ and 7LX are both building new tx's for mobile work, whilst Percy Woodroffe has completed a rx, with collapsible beam, for use on his motor cycle. Geoff Crompton has also been busy with a new beam for use in the car. Henry Solomon proposes to take the next examination and we all wish him the best of luck.

The December meeting concluded with a nice supper and it was so good to see so many present including 7CA and 7FM, the latter being temporarily stationed in Launceston.

CORRESPONDENCE

LISTENERS

Editor "A.R.," Dear Sir,

Herein enclosed a few thoughts that may be of interest to the readers of "A.R." As a listener, these are my own ideas of the lot of the humble s.w.l., after discussion with other s.w.l.'s. I take time to jot down and submit to you.

At the time of writing, the pest of radio is basking in a few rays of well earned glory. A listener, to be called such, must have certain qualifications of patience, pride and perseverance rarely found in other species of "science nuts."

This fellow, not all kids, sits by his box of noise awaiting those magic words, "CQ DX! CPI, DL3, VK1, etc., calling and listening!" His clock has stopped, so a mad rush to find the XYL's kitchen timepiece ensues. Then as the "rare" comes back the YF fumes through the shack doorway to demand the clock back to time that cake in the oven, and so the local QRM drowns out an S9 signal and you just sit and foam at the mouth. Who was that bloke talking to?

Sometimes the s.w.l. is more fortunate and logs CPIAM, 5-9 at 1306 G.M.T. in QSO with VK2BAD. After reading his mail, Johnny s.w.l. sits down at his desk and writes a report which goes into the mysterious QSL Bureau. Sometimes a verification arrives back. And so another country goes up on the board. Patience! You want miles of it to be a Short Wave Listener.

A listener's shack is a sight to behold. Cleanliness and tidiness prevail with well kept log books and records. The junk box even is carefully sorted and wire is rolled neatly. It's a pleasure to work in most places; habituated by theseimps collecting data for free; tapping the mighty Amateur's brain. Pride of achievement and place rank the mail reader as tops in scientific research.

Research it must be, for how might the humble receivers used by the majority produce the results they do? Two valves, or even one, bringing in signals at S6 and S7 from the other side of the world are not uncommon equipment. Most times too, the components come from junked broadcast sets or from that fairyland of disposals where one may buy an AR7 for shillings or a dud condenser for pounds.

With a pair of hands, an active mind, and a will to better previous attempts, the s.w.l. presses on regardless. Noise, man-made and atmospheric; lack of interest by others who could help; lack of activity by Amateurs; and lack of thought by active Amateurs in relationships with these men who would rather put their ear in a speaker than chew a perfectly good xtal mike to ribbons; all make the lot of the s.w.l. a bed of very long thorns and one that only perseverance of fine quality can keep the interest alive and the succession of fine results.

Results are said to be proved in the eating of the pudding. Eric Trebilcock, BERS195, known throughout the world as a premier listener, must have some thoughts and ideas about reception that would help even some of our transmitting giants. F. H. Price scored 656 points in the R.D. Contest. Only 11 Amateurs bettered this score.

The listener of some standing is important to Amateur Radio and is dependent upon the verification of reports, more assistance from expert Amateurs, and more tolerance, for his experiment today may be the Amateur's means of winning a contest or capturing some rare DX tomorrow.

—Norman G. Clarke, VK2 SWL.

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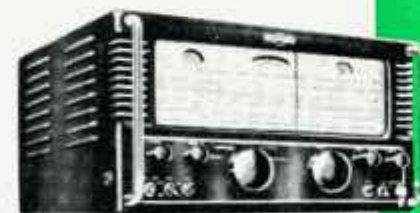
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Published by the Wireless Institute of Australia,
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EDITORIAL



OUR WANING HERITAGE

We have a heritage in our fast dwindling Amateur short wave bands which is crying out for protection—a heritage that wasn't handed down to us either, but was hewn from the unknown cosmos, developed, and pioneered by the early Amateurs, many of whom have now passed beyond the vale.

Could we say today that we have honestly protected our heritage? In a manner of speaking—yes, we have. But the encroachment into our bands by Commercial and whittling of frequencies by International Conventions and the demands of prospective Television requirements is something so vital that each and every licensed Amateur should—and will have to—shoulder some responsibility.

Warnings have been given in these columns many times for those who interest themselves in reading them. These same warnings have been printed in every language under the sun in every Amateur Society publication, so "Amateur Radio" is not saying something for the sake of having something to say. **Your bands are fast disappearing!**

It is not the policy of the Wireless Institute of Australia to criticise its members or any other licensed Amateur. But it is becoming impossible for a few stalwarts to protect this heritage!

To protect what's left it has been said that we cannot now expect to rely on the two larger world societies to represent Australia at the next International Telecommunications Conference—whenever that might be. We must have our own representative there!

To make this possible, the W.I.A. Annual Convention has been cancelled for three years—three years during which funds were to be saved against the day when the expense of sending a delegate would have to be met. The time is fast approaching when the finance will be wanted.

Even before that, it might be possible to hold a Region III. Conference (this has been proposed for 1956 during the Olympic Games) so that a delegate could proceed with the backing of Region III. countries.

But all the backing in the world—financial or otherwise—will go for naught if the whole structure of Amateur Radio cannot justify its existence in the eyes of those powerful Commercial interests that sit in Geneva or elsewhere, devoid of all sentimental attachments and hardened by the political pressure which drives them to the conference table to do nothing else but procure frequencies to satisfy the hunger of the fast growing Commercial services.

We must justify our existence! It will be no good putting the blame on the Institute and those of its members who give of their precious spare time to battle for what we have left. All the backroom homework and negotiation won't hold those bands if they are not being used. **And let it be said right here and now—"The bands are not being used!"** They are not being used to a degree that is fast becoming frightening.

The Authorities talk about it and ring their hands as they feel the pressure being brought against them for more frequencies, more frequencies and yet more frequencies. They hear kilocycles of bandwidth almost devoid of signals hour after hour and day after day.

The Amateurs talk about it—to each other! They blame everyone and everything but themselves. **BUT THEY ARE TO BLAME.** No one else can take the blame. They don't use the bands. Listen on any band almost any time, do that mental arithmetic, then make up your mind to spend an hour or two per week away from the work bench or what-have-you to populate your bands—or perhaps ultimately perish.

FEDERAL EXECUTIVE.

THE CONTENTS

| | |
|---|--|
| Wobblers—Sweep Generators .. 2 | Prediction Chart for March .. 9 |
| Trade Review—Philips Miniature I.F. Transformer, Type 4260 .. 7 | Fifty Megacycles and Above .. 10 |
| Ross A. Hull V.h.f. Memorial Trophy .. 7 | Short Wave Listeners' Section .. 12 |
| DX Activity by VK3AHH .. 9 | Federal, QSL, and Divisional Notes .. 13 |

WOBBULATORS—SWEEP GENERATORS

BY E. CORNELIUS,* VK6EC

THIS colloquialism has become deeply entrenched in the radio-man's vocabulary, and is particularly apt. The wobulator is a frequency modulated oscillator, covering a specific frequency range which, when used with a c.r.o., will plot the frequency response of a component, or all or part of a complete audio, video or radio frequency set up.

In the basic form the wobulator output is a portion of the audio or radio frequency spectrum varying repetitively as a known function of time. The constant amplitude f.m. signal is fed to the unit being tested. The output of the unit is rectified by a suitable detector, and used for vertical deflection of the c.r.t. Horizontal deflection is taken from, or synchronised with, the same waveform used to "wobble" the oscillator.

As the frequency is caused to vary, and the c.r.t. spot moves horizontally, its vertical deflection is proportional to the response of the equipment under test. The resulting trace on the c.r.t. screen is an amplitude/frequency response curve. By sweeping the desired range repeatedly at a low rate, the plot is repeated continuously, persistence of vision overcoming flicker and allowing detailed examination of the response curve. Thus the response curve can be varied while being watched, and the effect of adjustments are visible as they are being made.

F.M. OSCILLATORS
F.m. oscillator circuits are legion, but for sweep generator service, some limitations apply. In general, the range swept is a large percentage of the centre frequency (wide deviation). For test equipment, a minimum of tubes is the aim. So various wide deviation f.m. oscillator circuits have been developed. Three types the author has in use will be described fairly fully. These are:—

Reactance tube†
Miller tube‡
Johnson Wobulator‡

A fourth, an R/C type, will be described briefly.¶

Reactance Tube.—In this type, an L/C oscillator of any type using parallel resonance has its tuned circuit shunted by a tube. This tube's circuitry is such that it simulates an inductance or a capacitance, which is variable under the control of the sweeping signal. An inductance in shunt with a tuned circuit will raise its resonant frequency, a capacitance will lower it.

The simplified circuits are shown in Figs. 1a and 1b. In 1a the reactance tube looks like an inductance, in 1b a capacitance. Components R and C, from plate to grid, have impedances such that the grid is fed almost 90° out of phase with the plate. At high frequencies, about 3.5 Mc. for orthodox tubes, the resistor becomes more and more like

a capacitor. The 90° is not maintained, and the circuit operation is impaired until the oscillator output is severely amplitude modulated.

A circuit due to Helfrich§ raises the upper frequency limit to about 30 Mc., a simplified circuit being shown in Fig. 2.

In this circuit, the 90° phase shift is obtained in two steps of 45°, using tube capacitance as the reactive elements. With it, he obtained a linear deviation of 5 Mc. at a centre frequency of 30 Mc., using 6AK5s. I adapted the circuit for a video wobulator to obtain a deviation of 2 Mc. at a centre frequency of 11 Mc., using a 6AC7 and 6SH7s.

Miller Tube.—This method relies on the Miller effect in an amplifier tube, whereby an amplifier with purely resistive plate load shows a pure capacitance grid/cathode. This capacitance varies with the amplification being approximately equal to $-C_{gp}(1+A)$ where A is the stage gain. If the tube is modulated, the capacitance varies, rising as the grid runs positive, and falling to approximately C_{gp} as the tube reaches cut-off. See Fig. 3.

As long as the plate load is a pure resistance at the oscillator frequency, the added impedance across the tuned circuit is a pure capacitance. If the anode load is capacitive, the input impedance has a resistive component, which varies also, shunting the tuned circuit with a variable resistance.

To minimise this, as the frequency is raised, the anode load of the Miller tube must be reduced. Above about 6 Mc., this effect causes severe amplitude modulation of the oscillator output, but up to this frequency, it is the easiest and simplest to get to work.

As the grid of the Miller tube is accepting the full r.f. potential of the tuned circuit, the bias of this tube must be sufficiently high to prevent grid current, or the sweep signal will be completely swamped by grid leak bias, and lose control. The writer uses a 6V6 biased to about -28 volts, for an oscillator using a 6SH7. A deviation of 150 Kc. at 1.75 Mc. is quite easily obtained.

Johnson Wobulator.—This is a most ingenious circuit, which uses only one tube, but a variation using two tubes has proved less tricky to get going. See Fig. 4.

Very wide percentage deviations are obtained, up to 40%, but I have found operation above a rest frequency of one megacycle rather erratic. Below this frequency it is a honey.

Its principle of operation lies in that the whole of the cathode r.f. current flows through the cathode coil, and only that part to the plate flows through the other. The coils are very closely coupled and the polarity is such that as the anode draws a greater share of the current, the effective inductance is reduced, and the frequency rises.

Current sharing between anode and screen is under the control of the sup-

pressor, whence the sweep is injected. An EF50 seems an ideal tube, although I have used a 6AC7, and 6SJ7. I obtain a linear deviation of 400 Kc. at a rest frequency of 1 Mc. For a full description of the operation of the circuit, see reference 1.

R/C Oscillator.—This circuit is a four tube ring oscillator giving four 90° phase shifts. Special tubes seem necessary, as 6SN7s and ECC35s were not satisfactory. The circuit gives a 10 Mc. deviation at 60 Mc. centre frequency. See Fig. 5.

SWEEP For simplicity, a sine wave sweep—the a.c. mains—may be used, but it has three disabilities.

1. The sweep rate is rather high (50 c.p.s.). The resolution obtainable from a sweep oscillator is approximately equal to the square root of the total sweep per second. Thus 1 Mc. swept 50/sec., is a total sweep of 50 Mc./sec. and the resolution is the square root of this, approx. 7 Kc. Variations of response over less than this range will not be resolved. I use a sweep of 18# per sec., synchronised to ½ mains frequency. This is quite high enough to avoid flicker.

2. Sweep rate is fastest at the centre of the screen where the best resolution is usually wanted. At this point the sine wave is crossing the zero axis, and is changing at its greatest rate. However, the frequency plots will still be linear, as the f.m. oscillator is being frequency modulated at the same rate as the sine wave scan. I prefer to use a sawtooth.

3. The trace is displayed both left-to-right and right-to-left. There is some delay in the change in frequency, and the phasing of the two sweeps—c.r.o. and wobulator—has to be accurate to superimpose the two traces. Increasing the frequency range swept increases the delay, and necessitates a phasing control.

OSCILLATORS To obtain reasonably wide deviation using any of the L/C oscillators, the tuned circuit must be of low C, and hence has lower inherent frequency stability than is desirable. Any undesired hum or signal in the sweep will also modulate the f.m. oscillator. Thus a regulated power supply is virtually a must, although I find that a glow tube regulator is usually good enough.

MARKERS Calibration of the frequency scale is easy, if another oscillator of good frequency calibration is available. The signal from this oscillator, or signal generator, is fed into the detector, after the unit under test. The swept signal passed by the unit being tested, and the signal from the generator are mixed in the detector, to cause a blip, or widening of the display trace, at the frequency where the two signals zero-beat.

It is not good practice to feed the marker into the unit under test, as the marker may fall in a part of the curve where attenuation is high, and the blip not be discernible, and increase of marker input may overload the tested

* C/o. N.B.S. Transmitter 6WA, Wagin, W.A.
† "Radiotron Designers' Handbook," p.1157.
‡ Johnson, "Single Valve F.M. Oscillators," "Wireless World," April, 1949.
§ Foot, "V.H.F. Panoramic Receiver," "Wireless World," Sept., 1953.

§ Helfrich, "Wide Deviation Reactance Modulator," "Electronics," April, 1948.

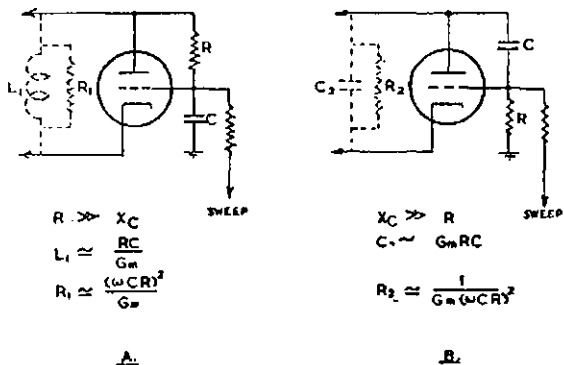


FIG. 1 - REACTANCE TUBE

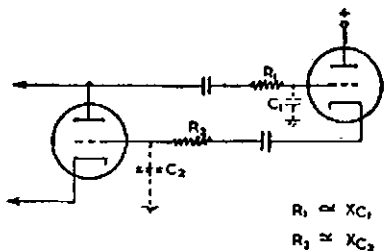


FIG. 2 - HELFRICH REACTANCE TUBE

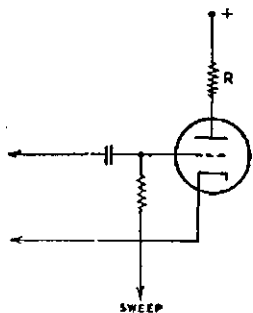


FIG. 3 - MILLER TUBE

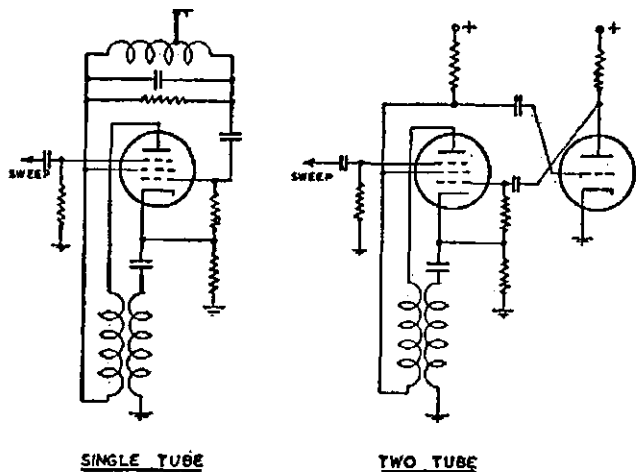


FIG. 4 - JOHNSON WOBBULATOR

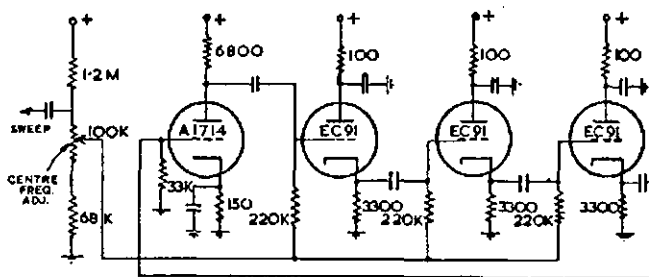


FIG. 5 - R/C RING OSC.

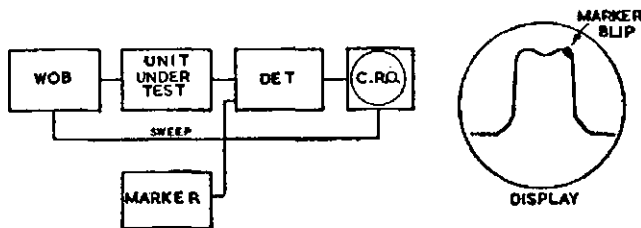


FIG. 6

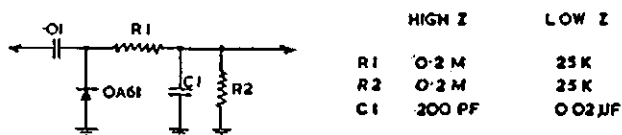


FIG. 7 - DETECTORS

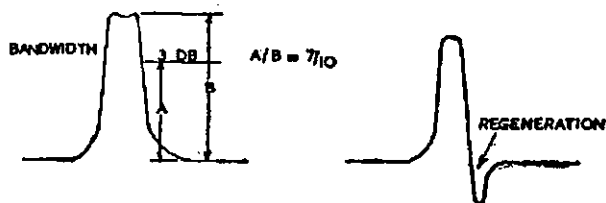


FIG. 8

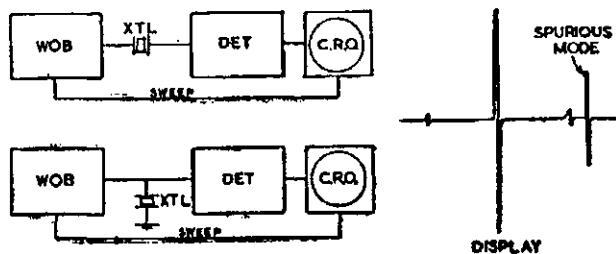
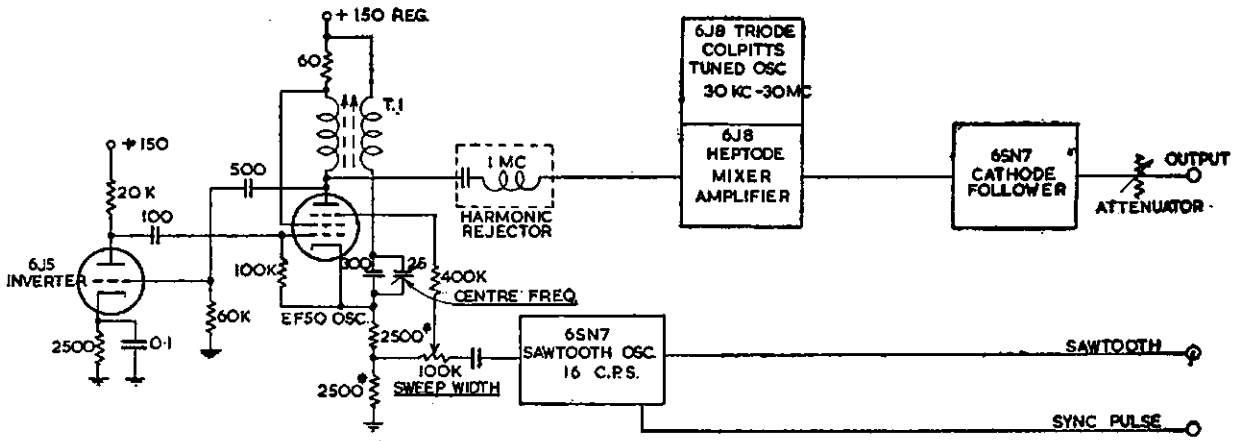
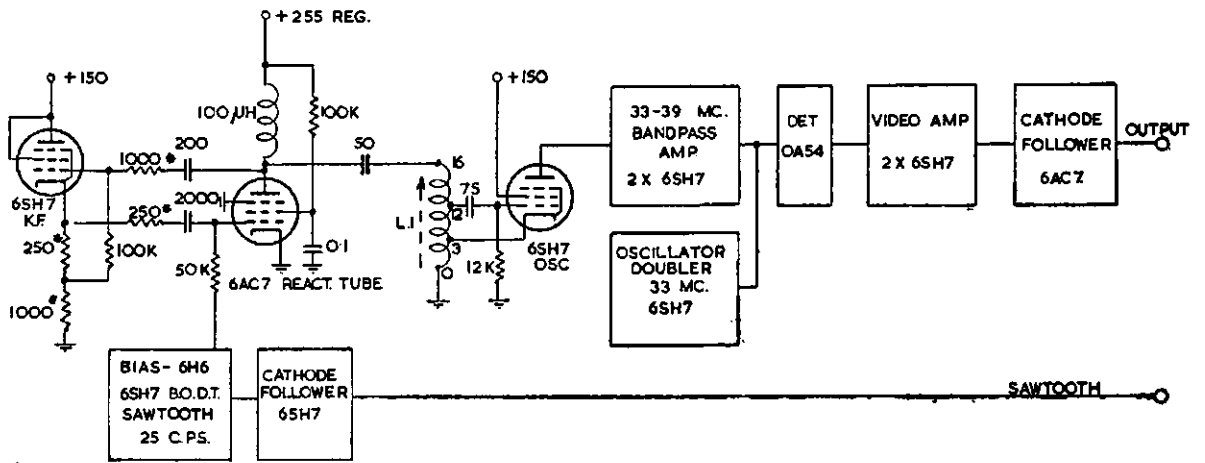


FIG. 9 - CRYSTALS



* 5K POT. HERE WILL PROVIDE A 'DC' FREQ SHIFT.
 T.1 - KINGSLEY 3/4" S.W. COIL FORM
 PR1 - 60 T } 34 AWG SINGLE LAYERS OVERWOUND
 SEC - 60 T }

FIG. 10 1 MC. ± 200 KC. FM. OSC OF ALIGNMENT OSCILLATOR



* CRITICAL VALUES FOR TUBES SHOWN
 L.1 3/4" SLUGGED FORM 16 T TAPPED 3 & 12 T.

FIG. 11 11 MC + 2 MC FM. OSC OF VIDEO SWEEP GENERATOR

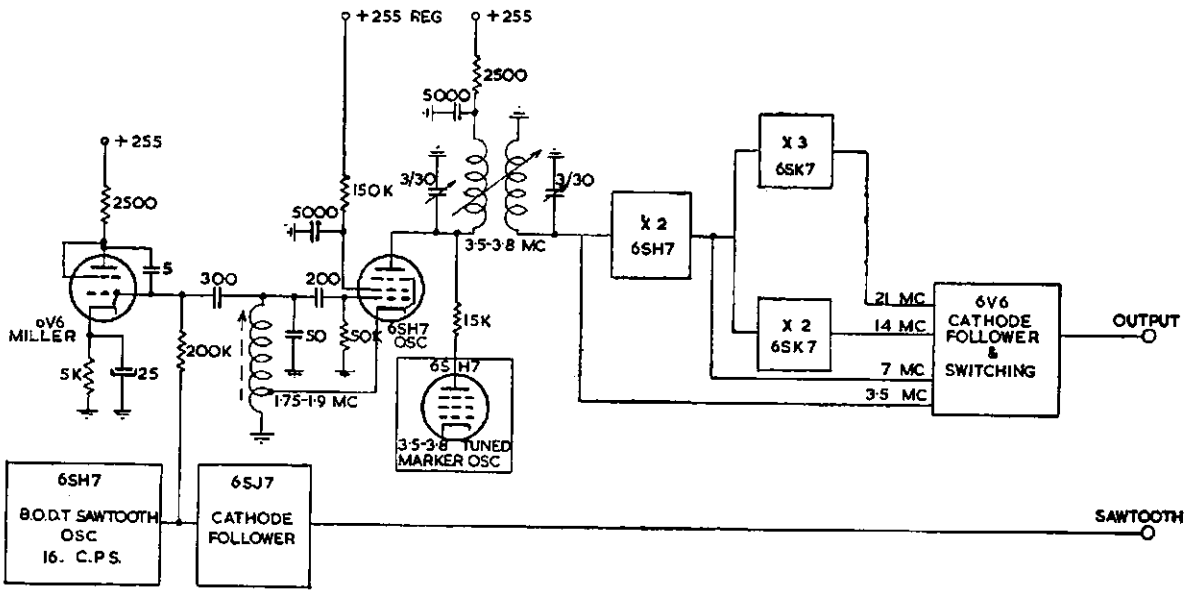


FIG. 12 1.75-1.9 MC FM. OSC OF AMATEUR SWEEP GENERATOR

unit. Any part of the curve may be identified by tuning the marker so that the blip is at the point desired. The frequency can be read off the marker generator calibration. See Fig. 6.

DETECTORS The most suitable is a germanium diode with an R/C filter, in a probe. The input impedance of the detector should be suited to the test point, and should load it as little as possible. A suggested circuit is shown in Fig. 7. Thermionic diodes are not very satisfactory, as the very low signal levels often available from the detector are masked by hum from the heater supply, particularly when using the high impedance probe.

APPLICATIONS Receivers. — For receiver alignment feed wobbulator into antenna terminals at a rest frequency in the desired band, and set the deviation to about 30 Kc. The whole receiver can then be aligned to give maximum sensitivity (height of response peak), desired bandwidth (width across 3 db points). See Fig. 8. No detector is required. The signal can be taken from the loudspeaker, headphone jacks, or from second detector output, for the c.r.t. vertical amplifier.

If the receiver is accurately calibrated, bandwidth can be measured by tuning the receiver itself so that a reference line on the c.r.t. is used to mark the 3 db points, as the receiver is tuned, and the display moves horizontally. The receiver calibrations will give the bandwidth.

I.F. Transformers or I.F. Amplifiers. — Feed the wobbulator, with rest frequency at the i.f., into the primary of the first i.f. transformer, or the mixer, via a very small capacitor (about 10 pF.). Connect probe to secondary of last i.f. transformer through another small capacitor. Adjust tuning (and coupling if adjustable) to frequency and bandwidth desired. A very finely calibrated marker oscillator is needed to measure a bandwidth of say 5 Kc. at an i.f. of 455 Kc.

I have used this method to adjust the coupling of a 455 Kc. i.f. transformer to critical (just no dip at peak of response), for a phasing type s.s.b. exciter. On subsequent check by r.f. c.r.o. measurement, I found the phase shift as near 90° as could be measured.

Crystals.—Place the crystal in series with, or in shunt with, the lead from the wobbulator to the detector. Set the rest frequency somewhere near the normal frequency of the crystal and use the widest deviation. A ringing type curve will be seen at all responses of the crystal within the swept range. The amplitude of the response is a rough guide to the crystal activity. Possible spurious modes, and their activity, are also indicated. Their frequencies can be measured with a marker. See Fig. 9.

Bandpass Exciters or Amplifiers.—As in receivers, the bandpass characteristics can be seen, a marker will show band edges, and the job can be tuned while you watch its response.

PRACTICAL CIRCUITS Figs. 10, 11 and 12 show extracts of three wobulators in use here. I have shown in detail the circuit of the f.m. oscillator, with the rest of the unit in block form.

Fig. 10 is from a general purpose signal generator, tuning from 100 Kc. to 30 Mc. It has a 1 Mc. Johnson wobbulator with a sweep up to plus and minus 200 Kc. This is mixed in a 6J8, if required, with the signal generator output, giving swept signals plus and minus 1 Mc. either side of the setting of the main oscillator.

Fig. 11 is a simplified sketch of a video sweep generator using the reactance tube circuit by Helfrich to obtain a swept range of 11 Mc. to 13 Mc. After trebling, this is mixed with a fixed oscillator on 33 Mc., giving an output from 0-6 Mc. after mixing. This generator uses a feature called "offset" sweep, where in the f.m. oscillator only varies in frequency one way from its rest frequency.

Fig. 12 uses the Miller circuit in an Amateur bandpass sweep generator, to give a fundamental sweep from 1.75 Mc. to 1.9 Mc. By doubling and tripling, with bandpass transformers, output covering all Amateur bands from 3.5 Mc. to 21 Mc. is obtained at a fairly high level.

The panoramic adaptor is another widely used application of the wobbulator. In these units, a wobbulator at intermediate frequency beats with incoming signals in a receiver, and the beats are displayed on a c.r.t. The face of the tube is calibrated in frequency plus and minus that to which the receiver is tuned. Thus the panadapter displays all signals incoming within a band, as vertical "blips". The character of the blips enables identification of the signal as f.m., a.m. or c.w. Their position on the screen gives their frequency.

I have attempted to cover a very wide field in a short article, and much has had to be missed. The applications outlined are only a very few of those possible.

HINTS AND KINKS

FEEDER SPREADERS

Want some lightweight high grade r.f. insulation feedline spreaders? The polyethylene core from old co-axial cable is just the thing. Strip off the outer p.v.c. sheath, then the copper braid, and after cutting to required length, pull the inner conductor wires out.

Placed across Zepp and other feedlines with spacing up to 6 inches, a large number of such spreaders will weigh but a few ounces. They are easily fixed in place by drilling a small hole through at each end, then threading binding wire through.—VK2NO.

VALVE SOCKETS FOR EF50s

Many users of EF50, RL7, RL37 and similar types designed for "T" 9-pin sockets strike trouble with the spring contacts, where the sockets have been used in some wartime gear. Some people were over-generous with tropical varnish when it was decided to tropic-treat radio equipment of earlier war vintage, resulting in the gumming up of the once flexible contact springs in valve sockets. The wafer type in particular suffered from such treatment, so that impartial or incomplete contact with valve pins occurs.

The cure is to soak such sockets for an hour or so in suitable solvent—

acetone or methylated spirits—according to the requirement. After soaking, work the springs free with a small screw-driver and then close them together with small pointed pliers so that they will grip the pins when a valve is inserted.—VK2NO.

NEUTRALISING 6J6s

Neutralising condensers for such finicky small capacities as those in a 6J6 circuit are easily made from 70 ohm twin lead. Start with a 2 inch length and snip bits off with wire cutters until the required value is reached.

Another idea is to use two small brass or copper tubes set in insulating material—in a screening partition—with crossed-over p.v.c. insulated flex leads adjusted for correct capacity.—VK2NO.



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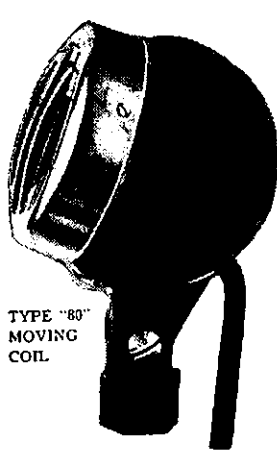


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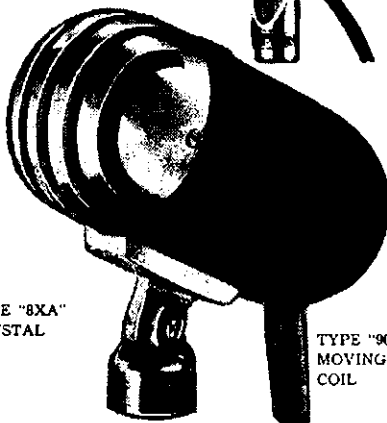
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The Philips Miniature I.F. Transformer Type 4260 has been designed for receivers with an intermediate frequency of 455 Kc. where economy and space saving are of primary importance.

Two major Philips inventions, viz., the new h.f. magnetic material "Ferroxcube," combining a high ring permeability with low losses, and the high-stability, low-loss "wire" capacitors of very small dimensions, have made it possible to construct this miniature i.f. transformer of high quality.

ence of moisture and makes this transformer suitable even for very severe climatic conditions.

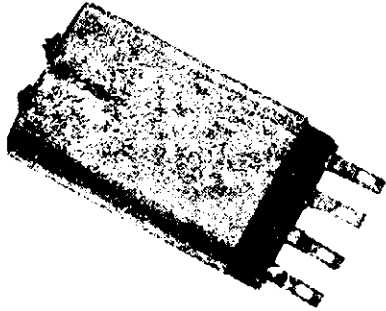
The fixed tuning capacitors are "wire" capacitors of 110 pF., 32 mm. long and 1.3 mm. in diameter.

In order to adjust the inductance values, small cores can be screwed into or out of each coil. These cores are fixed to the adjustment screws by means of plastic sleeves. The pitch of these screws has been chosen for quick and accurate adjustment. The sleeves guide the cores and thus prevent inaccuracies in adjustment.

The two sections possess identical characteristics, so that either of the two coils can be used as primary. This, and the fact that any of the terminals can be used as an earth connection, makes it possible to wire any set in the most efficient manner.

The unusual construction of the magnetic circuit and the very small stray capacitances of the "wire" capacitors have a favourable influence upon the characteristics of the i.f. transformer, type 4260, which has a high quality factor considering its small dimensions. The high stability and the small temperature error are of no little importance.

The dimensions of the can are such that the longest side is shorter than the corresponding dimensions of the valve holder, even in the case of the miniature valves, while the shortest side is only 10 mm. long. The filter can thus be placed in between two valves and the space it occupies is therefore reduced to a minimum. The high maximum permissible temperature (75°C.) is a great advantage in this respect.



Two parallel coils with adjustable cores of "Ferroxcube" material are each surrounded by three small rods of the same h.f. magnetic material.

All these parts together with the fixed capacitors are supported by two pieces of high-grade "Philite" material encased in an aluminium can, and are treated by a special process in low-loss compounds.

This construction ensures a very high degree of resistance against the influ-

Mounting is quickly and securely done by means of the spring, type 4261, supplied with each filter.

Technical Data:

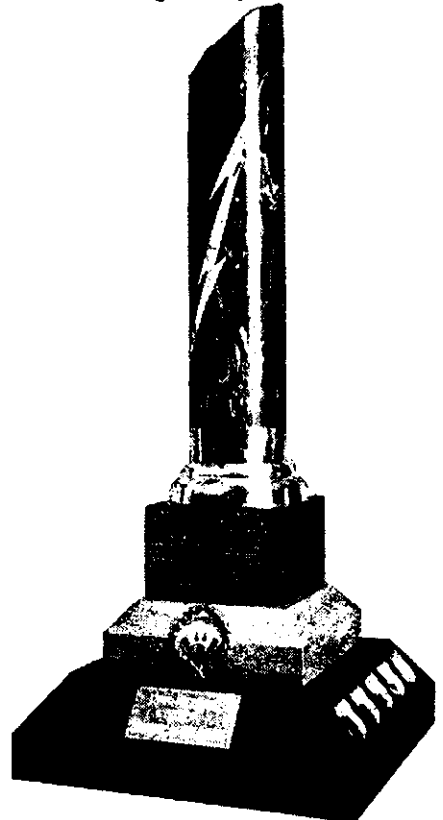
| | |
|--|----------------------------|
| Quality factor | 100 |
| kQ | 0.9 |
| Capacitance across primary | 110 pF.* |
| Capacitance across secondary | 110 pF.* |
| Average frequency drift, 20 c/s. per °C. | |
| Maximum working temperature | 75°C. |
| Longest side of can | 25 mm. (1") |
| Shortest side of can | 10 mm. (13/32") |
| Height of can | 36 mm. (1-7/16") |
| Mounting by means of a special spring | supplied with each filter. |
| * Wire capacitor. | |

The nominal working frequency is 455 Kc. for a wiring capacity not exceeding 15 pF. Other frequency ranges can be covered, depending on the wiring capacities of the i.f. circuit. If, for instance, the wiring capacity can vary between 5 and 10 pF., the transformer can be used for a range from 443 to 463 Kc.

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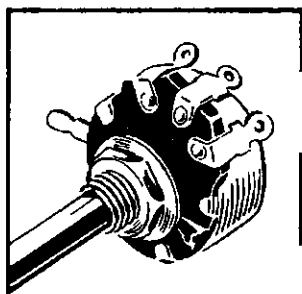
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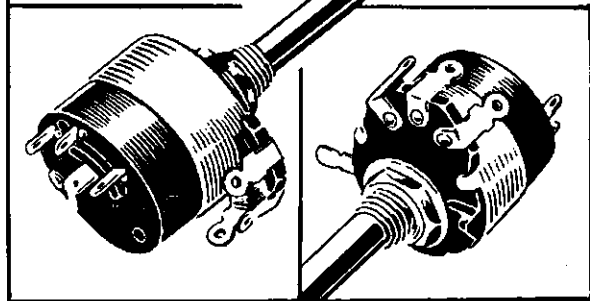
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DX ACTIVITY BY VK3AHH*

PROPAGATION REPORT

3.5 Mc.: Overseas communication on this band can be stated as fair to good. Europe and North Africa broke through between 1800 and 2000. The band was open to North and Central America, the Pacific Islands, and the Far East during the period 0800-1300z.

7 Mc.: This band also showed reasonable conditions with European openings over the short path 1900-2100z and, rather erratically, along the long route between 0700 and 0900z. North American contacts were possible from 0600 to 1400z, while the Far East and Asia presented themselves between 0800 and 2000z. African conditions existed around 1600-2100z.

13 Mc.: Conditions have been fair throughout the month. Communication with all continents was possible. Times for Africa were 1300-1800z and 0700-1000z, and for Europe 0800-1000z over the long path, and 1100-1500z over the short path. North American conditions existed between 2000 and 0900z and around 2100-2300z, while Central and South America were represented around 0600z and 1000-1200z.

21 Mc.: Some good openings to the American continents (2200-0300z) and Europe/Africa (0800-1300z) have been reported. Generally conditions seemed to be rather changeable.

27/28 Mc.: No reports have been received for these bands.

NEWS AND NOTES

As news of Antarctic work of the exploration ship, Kista Dan, and the men aboard reaches the mainland, it is a good thing to remember what an important duty expedition members fulfil for scientific research and for mankind in general. For men of the Antarctic and Sub-Antarctic expeditions it means a year of complete isolation and hard, yet interesting, investigations. Amateur Radio is one of the very few ways to keep in touch with the homeland. Amateurs in the expedition teams have always appreciated such contacts and most of them looked for as many QSOs with different VK stations as were workable.

The boys on Macquarie Island are very easy to reach from the Australian mainland, due to their relatively close location. As readers will recall, during 1954 Chas VK1AC was the best-known representative of the Island's team. His 2240 QSOs with 86 different countries included numerous VK contacts. While sending his last VK1 DX report covering December, 1954 (see Activities), Chas asks me to convey his sincerest thanks to all VKs concerned—and it is a pleasure to do so!

The return of the Kista Dan with the boys from Heard Island and Mawson, Antarctica, is scheduled for the last week in March. Welcome home to our fellow Amateurs: George VK1DY, John VK1PG, and Bill VK1EG.

TISMHB (W6MHB) plans operation on all bands 10-160 mx for the second half of February (W7SGN).

FESAN should now be on the air from French Cameroons.

ZD3BFC expects to bill in Gambia for two years.

The 3.5 Mc. band showed very good DX activity during January. Many countries were represented. KP4CC, KR6LJ, KH6AFS, FA8BG, Ws, JAs, and Europeans belonged to stations frequently heard and worked by VKs. A sked has been arranged between G6YQ and VK3AHH to investigate the notoriously difficult path G-VK3 on this band.

* Hans J. Albrecht, 10 Belgravia Ave., Box Bill North, E.12, Vic.
* Call signs and prefixes worked.
z—zero time—G.M.T.

From the Northern California DX Club and the "DXer" the following items were received:

CR6CZ is reported to be active again. KC6CG left Ulithi (Palau) in December. W6RRG (recently VP7NX) should now be around ZD7/ZD8.

QTBs OF INTEREST

- Ex-VK1AC—VK3IB, Box 35, Dimboola, Victoria, Aust.
- AD4BS—C/o. P.M. San Francisco, A.P.O. 793, U.S.A.
- AI1BC—C/o. P.M. San Francisco, A.P.O. 323, U.S.A.
- Ex-KC6CG—521 Tudor Road, San Leandro, California, U.S.A.
- VP7NN—Via W3RUZ.
- ZK2AD—Via LZLIDA.
- ET3LF—Box 144, Addis Ababa, Ethiopia.
- TG9EA—Box 115, Guatemala City, Guatemala.

ACTIVITIES

3.5 Mc.: Chas 1AC reports VKs, and Frank 2QL adds KP4CC*, Ws*, JA3AA*, and FA8BG, G3JXF, OE13USA. Chris 7KW heard a series of Ws on phone and here at JAHH we have: KH6AFS*, Ws*, KR6LJ, JA1CR, KP4CC, G5LP.

7 Mc.: 1AC: JA1CJ*, Lyell 2GW: Gs*, VQ3CC*, and VQ4AQ, ZD6BX: 2QL: OQ5RU* and VQ3CC, ZE2JP, ST2AR, ZSTD, Laurie 2AMB: JA6FC*, JA5AB*, JA8HK*, CN8BJ*, KG6FAA*, and DU1DR, KR6, Neville 2AHL: HL1AA*, Ivor 3XB: CR9AF* and 4S7NG, Fred 3YS: FO8AK, JA1AFR, KR6KS, VS2CP, Keu 7KM: VEAs*. Dave Jenkin heard KH6s.

14 Mc. C.W.: 1AC: KV4*, OH*, KA/JA*, LU4DMG*, VU2RA*, VK1EG*, GM2BVF*, VK1DY*, VQ2GW*, ZS1BK*, ZE3JP*, 4X4DK*, T12RC*, FK8AE*, LUSAQ*, SM*, VP9BM*, VS8CT*, VS6CW*, CO2SW*, G*, LA4IE*, CE7AA*, AP2TM*, DL/DJ*, HS1D*, CO2BM*, DUISCS*, OE5JK*, ON4FL*, F8LF*, GD3IBQ*, MP4QAH*, OE1WE*, VQ4AQ*, CN8MM, GM3-DHD*, CESDZ*, PY1RW*, LU4HU*, KC6CG*, VSSKU*, OZ7UU*, PA0RLF*, E1A*, PA0SPR*, GM3GJB*, F18AU*, ZB1BF*, TF5TP*, FA8H*, FA8A*, CE3RE*, KP4AZ*, E14X*, LU3DAB*, PA0KWG*, ON4PA*, YU1AD, ZZZ ZZ ZHHhh PA0KWG*, ON4PA*, YU1AD*, ET2AB*, VP8BD*, GW3FSP*, PA0AO*, OE2SP*, ET3S*, ZS1RG*, OA4ED*, HC1FG*, LA4RD*, KC6ZB*, F18BA*, FK8AO*, VR2AS*, 4S7WP*, G14RY*, VU3FT*, ON4TA*, 2QL: VR1RO*, ZD8BX*, ZM8AS*, MP4HBL*, ST2AR, Bill 2XM: CT3AB*, VK1EG*, MP4HBL*, OA4ED*, ET3GB*, OD5LJ*, KP4AZ*, VK1DY*, VR1RO*, PJ2AJ*, CE4AD*, VU2AL*, VU2AE*, VQ3RS*, HB9KE, 4S7NX*, KG6AF*, YU2AB*, VR3A*, and FY7ZA, Noel 48AF: VS2DW*, KZ5GH*, ZE1CH*, VS9XZ*, 2AMB: OH* VK1DY*, KP4AZ*, CN8MM and ET3S, EA8AF, CE3RE, SV1AZ, F18AO, VP7NX, A14, CX VK1EG*, VR4RO*, VP9BM*, VR3A*, XE1BS*, KC6ZB*, VSSKU*, KV4*, VK1DY*, KP4AZ*, VP9BL*, VPC9B*, FK8AJ*, HS1D*, LU4DMG*, VS1GK*, CR1RO*, KA/JA*, F08AB*, ZD6BX*, OH*, VQ8CB*, VQ5EK*, KP4TF*, FABRW*, ZM6AS* and CR6CW, HZ1AB, ISFP, SV1AZ/Crete, 3YS: FK8AB* and ET3S, Bob 4BW: OZ2N*, F18AO*, CR7BC*, ZS2EG*, MP4BBE*, ET3LF*, Jim 4ZO: HZ1AB, HB9MC, EA8BDE, CU2AL, OE5JK, VQ5EK, HB9X, John 5HI: ZD6BX*, ZC4RX*, ZB2I*, MP4BBE*, MP4BBL*, G*, GM*, G1*, VQ4AQ*, 4S7*, VS1*, VS2*, VS6*, ZSSU*, VU*, YU3BC*, OE26OJ*, SM2CWA*, HB9KB*, DJ*, SM2BCS*, Ray 5RK: VU2AX*, DL*, VS1B*, SM4BEC*, 4S7*, JA*, G*, Austin 5WO: VQ8CB* (1200z), SV0WL* (1300z), 7KM: XZ2OM*, 4S7WP*, KX6AF*, CE4AD*, ZC4RX*, MP4BBE*, G*, GM*, 7KW: JAs*, Bill 9BW: Europeans*, Dave Jenkin: JA, YV5AE, KP4AZ, VY5DE, SM, LUSEL, LU6-DJX, VY5BZ, ZS2B, GM2FH, G, VS1B, VK1DY, VS1FE, KV4, FK8AE, CT3AB, DU1DO, ON4PA, KX6AF, F18BA, MP4BBL, 4S7NX, 4S7WP, DL, ET3S, VS6CT, VK1EG

14 Mc. Phone: 1AC: VS1FS*, KR6OO*, LU4-DMG*, KA/JA*, KR6AZ*, LU4CN*, ZC5VR*, ZM6AT*, VS2DQ*, KR6MC*, VU2AK*, VU2RA*, OH*, VR3A*, LU4DE*, PY2CK*, PY5DP*, PV4VX*, LU6AJ*, LU6BS*, LU4ES*, LU4DX*, PV2JW*, MP4KAC*, VS2CP*, CE3PV*, W4VUU/MM*, KR6MC*, 3AHH: CE3QI*, YN1LB*, ZS2BC*, YK1AA*, MP4KAC*, VQ8AL*, ZS5JM*, VP7NG*, 2AMB: VS2DQ*, Stan 5TE: KJ6AZ*, VS*, 4X4DK*, 4X4AS*, CE3PV*, ZB1CM*, KV4*, 4S7*, ZS2NZ*, DL*, PA0NU*, Gs*, F9HF*, GC6FQ*, ODSAB*, G*, YU1AD*, MP4-KAC*, KH6*, 4RW: G*, HK3PC*, VR2AS*, 5HI: MP4BAD*, DU1AP*, DU1UP*, 4S7SW*, DL*, KH6*, KP6AK*, ZS6TE*, KC6ZB*, JA*,

KW6BB*, HC1FG*, 5WO: GM8MN*, VP8GN*, KV4*, VY5CE*, 4S7YL*, ZC4JA*, ST2DB*, ET2MI*, EA9BC*, EA6AR*, AP2CR*, VS2DQ*, Gs*, PA0ULA*, YU2DB*, I1CEI*, F9HF*, SV0WK*, DL*, 4X4GB*, MP4BBS*, Jim Hunt: HK3PC, HC1FG, CX2CO, 3V8BL, ZS6AFF, ZS6BW, VQ4AQ, VS6BE, VS6DQ, KV4, 4S7FG, 4S7YL, VR3A, KP6AK, VU2RC, 3W8GT, F18AO, I1CEI, EA3CY, EA3GF, HB9GS, HB9JZ, HB1MX/HE, ZB1CM, 4X4DK, OE13USA, OE13-LL, F9HF, F9HF, PA0ULA, PA0UO, OE1PC, ODSAZ, OH, MP4KAC, MP4BAD, MP4BBL, YJ1AA, YU1FR, YU2DB, SU1CN, ON4OC, HZ1AB, SM, G, DL, Dave Jenkin: HK3PC.

21 Mc.: 1AC: VK, Len 3ALD: W0*, W6* and DL1VX, MP4KAC, G3BLG, Eric 4EL: OK1FU*, HA3DA*, OH3RY*, DL3RM*, G2BW*, G3CBU*, G3BXI*, VS6CZ*, HC1FG*, KH6AWK*, W6*, 5WO: G3HCU*, ON4SZ*, Jim Hunt: 4X4AS, 4X4AF, ZB1DK, ZB1AJX, SV0WO, HB9CV, F9HF, DU6XX, DU1BA, OE1WH, MP4KAC, G3BLG, G3HCU, G2FUU, G2APX, PA0ALO, G3HZ, VU2CY, VU2ET, 4S7YL, VS1FE, VS8CZ, VS6BE, W2ZXM/MM, W3HXE/MM, W3JY/MM, W4VUU/MM, W6KUY/MM, KH8ABQ, KH6BEH, KH6SP, KA2KC, VR2CG, DU7SV, KG6GX, KJ6AZ, W6, W8, W0.

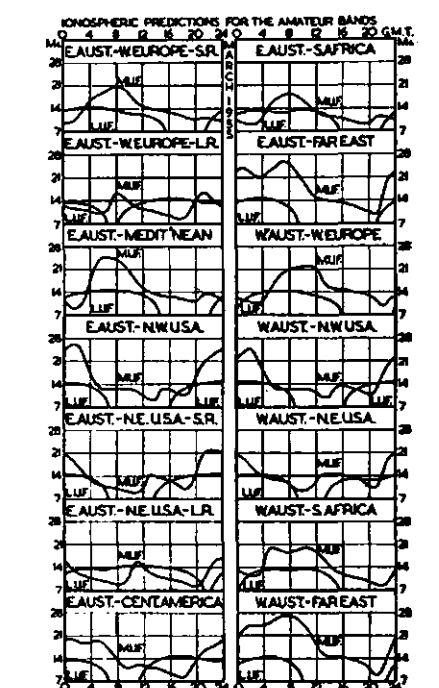
27/28 Mc.: No reports have been received. Rare QSL were received by 2QL: VP7NG, ZC5RO, VP9BM, KM6AX, ZD6BX, KB6BA, 2AHH: HB1MX/HE, GC2FZC, VQ5CY, 2AMB: IT1AL, HASKBA, ON4IE, VS2CP, VS5RO, ZD6BX, DU7SV, VP9BM, CE5DT, 3CX: VS4RO, 3V8AN, 5HI: VS5RO, ZE5JJ, 5WO: ZSSAW, ODSBA, ZC5VR, PY2AS, F8EG, CO2BL, ZSSKS, 7KM: CN8GB (7 Mc.), BEB195: CN8-GX (3.5 Mc.), ODSAF, OQ5GU, SUISS, WN9QIA, XE1AX, ZK1AB, SM8CND.

Thanks to the Northern California DX Club, PJ2AJ, G6YQ, W7SGN, ZL1CI, and VKs 1AC, 2GW, 2QL, 2XM, 2AHH, 2AMB, 2APL, 3CX, 3TE, 3XB, 3YS, 3ALD, 4EL, 4RW, 4Z0, 5HI, 5RK, 5WO, 7KM, 7XW, 9BW, and a.w.l.a. BERS-195, Jim Hunt, and Dave Jenkin.

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."

PREDICTION CHART FOR MAR., 1955



FIFTY MEGACYCLES AND ABOVE

50 Mc. DX

VK1ZM, Macquarie Island, has advised that they have heard New Zealand on the 50 Mc. band during January, but no details given.

In New Caledonia, FK8AB, listening on 50 Mc. during the period of the Ross Hull Contest, heard VK2, 4, 5, ZL1 and VR2.

VR2CG, of Fiji, contacted several Australian States including, for the first time, VK6—a distance of approx. 3,900 miles. The contacts were made on 3rd January commencing with VK6HK at 0034 GMT. Signals were R5 S8. VR2CG at that time was hearing all ZL districts and all VK States except VK7.

NEW SOUTH WALES

Weather conditions spoilt both fixtures of the V.h.f. Group in January, first "Operation Roof Top" and then the Fox Hunt set down for Sunday, 23rd, which was abandoned owing to rain. The trip to Mt. Kosciusko was made by Roy ZHO and Perc 2APQ as planned on 7th January without incident. The weather was perfect and after erecting the beam, setting up the gear, and making some check transmissions, retired for the night on the top of Australia (7,305 ft.), satisfied that everything was working OK and ready for the skeeds on Saturday afternoon. However, during the night a westerly wind sprung up and by morning reached gale force. After spending two hours transmitting and listening on 2 mx, decided that as the weather had got worse and showed no signs of abating, with heavy storm clouds settling around the mountain, to go down to the foot of the summit, hoping that conditions would improve and we could return and continue as planned, but when lowering the beam we were unable to hold it once the guy ropes were slackened with the result it was damaged and could not be repaired with facilities we had with us.

We then decided to go through to Tumut and on Sunday morning, with material supplied by Geoff 2BQ, Keith 2ZAA and Ross 2FN, was able to make temporary repairs to the beam and then arranged to go to Kendall—a fire lookout in the State Forests, some thirty miles south of Tumut, with Keith 2ZAA leading the way as guide. About half way to Kendall, Roy remembered that we had left the tx in 2BQ's shack where it had been inspected by the gang. Within seconds of pulling up to go back, Ross 2FN arrived with the tx and a pair of trousers we had left behind in our rush to get out to Kendall. According to Geoff 2BQ, we could do without the pants, but we had to have the tx. On arrival at Kendall, further trouble developed and the "Donk" gave us a worrying hour and a half before it finally decided to go. Finally at 4 p.m. we made our first contact with Geoff 2BQ and then had contacts with Don 2RS in Albury, Syd 3CI at Nagambie. The three Tumut boys, from their home locations, made a recording of the transmissions from each of those stations. Other stations heard from Kendall were 2WH, 2AJQ, 2GU and 2ANF in Sydney, together with several unidentified carriers, but to our disappointment were unable to make contact with Sydney.

Sydney stations who were operating in the final on the Sunday made several good contacts. 2ATC at Barrington Tops, 2OA and 2WJ in the Blue Mountains, 2ZWA at the "Gib" Kowral, 2ANP mobile marine Sydney Harbour all made interesting contacts with home stations as well as between their field locations.

The fifth Annual Hamfest of the Division brought a number of country v.h.f. enthusiasts to the city, among them were 2AJQ, 2PN, 2BQ, 2AFE, 2AKS and it was suggested that we hold a field day similar to the one held last October. This is now being discussed and it is hoped that it can be arranged to take place towards the end of March.

The first meeting of the Group for 1955 took place on 4th February; the lecture for the evening was also another first, being the first lecture given in N.S.W. by a holder of a Limited License in the person of Barry 2ZAG, his subject being "V.h.f. Antennae—Theory and Design." By means of a well drawn set of diagrams and several pieces of test gear, Barry gave many interesting details regarding the construction of antenna balancing devices and different types of feed lines, showing how to calculate the impedance for different spacing and the use of a bridge to adjust the standing

wave ratio on the feeders to a minimum. A very informative and interesting lecture, Barry.

While on the subject of lectures, the one set down for the March meeting will be given by Mr. Noel Millar, 2AQH, entitled "Some Remarks on Detection and Suppression of Radio Interference."

On 4th February, at 8.30 p.m., the first 2 mx contact was made with Tumut. Keith 2ZAA and John 2ANF in Sydney succeeded in making contact on their first sked. Congratulations to both on a fine effort. Sydney stations are advised to listen for 2ZAA at 8.30 each night. 2WH has been putting a very good signal into Sydney during the past few weeks and was worked by Bob 2OA for the first time, also by 2AOA, 2ABZ, 2QZ, 2AJZ. We hear that 2JW at Orange has no difficulty in working 2WH at Forbes, also that 2AXS and 2APE with 2AMR at Dubbo promises to become very active on 2 mx very soon.—2APQ.

VICTORIA

Many of the v.h.f. gang took mobiles and portables away with them to make the holiday period very interesting from a radio point of view. Jack 3VZ was at Rye, but worked mobile from Arthur's Seat, Alf 3IE was at Mt. Martha, Len 3LN and Laurie 3ALY were at Portarlington, Ray 3ZAE and Max 3ZAW were at Bendigo. All were able to work through to Melbourne and many interesting contacts took place. Most were mobile equipped and a lot of mobile to mobile was on the air, and all find it a really fascinating side light to v.h.f. activity.

For "Operation Roof Top," Laurie 3ALY went to Seres, near Geelong, Len 3LN to the hills at the back of Portarlington, Jack 3VZ to Arthur's Seat, and Alf 3IE to Mt. Martha. Many good contacts were made, but unfortunately none with Kosciusko owing to the blizzard, with the exception of Syd 3CI who made a contact when they were at Tumut.

The first Field Day of the 1955 season was held on 23rd January when several braved the unusually hot and humid weather and took up locations on the hills. Ian 3ZAM went to Mt. Donna Buang, Jack 3VZ to Mt. Dandenong, Len 3LN to Arthur's Seat, Ray 3KD and Norm Dench to Mt. Macedon, and Eric 3ADU to Bald Hill. A good deal of calling of VK7s took place, as Col 7LZ was on the band during the day, however no contacts were made. Col, however, has promised to make five minute transmissions on the half hour during the VK3 weekly DX session, which occurs between 8 and 9 every Thursday evening.

We welcome to the band Ray 3ZBH, Jack 3ZAJ and Don 3PO. Don 3PO, of Ballarat, has been putting very excellent signals into Melbourne and on most occasions Eric 3ANQ (140 miles from Melbourne) has been putting in excellent signals, upwards of S9.

At the V.h.f. Group meeting this month the programme of Field Days for 1955 was decided, the next one being on 6th March, then 3rd April, and 1st May, which will be the first Sunday of each month, which should make it easy to remember.

The Fox Hunts have recommenced for the New Year and will continue on the second Wednesday of each month. Associates! A tx is not a "must" for the Fox Hunt, a rx on 144 Mc. is all that is necessary and will ensure a most enjoyable evening for you.

The long week-end for the Australia Day holiday found a minor unofficial convention at Portarlington, when Laurie 3ALY, Bob 3OJ and Len 3LN camped on the foreshore. They were joined by Associate Norm Dench, Graeme 3ZAA and family, and Gordon JTF and family on the Monday. They decided to make it a yearly event and hope that others will join in next year. On the road home, Len 3LN and Laurie 3ALY worked mobile between cars and at Little River worked back to Max 3BQ, whose signals were S9 on the road. This was an approximate air-line distance of 45 miles and signals, perhaps because of the flat nature of the road, were rock steady with no sign of flutter at either end. The contact continued until a little after Werribee, when Graeme 3ZAA then took up the contact and continued until both Laurie 3ALY and Len 3LN reached home.

Up to the present, no break-throughs have been reported to VK7. This is unusual as the D.C.A. Launceston to Melbourne beacon has been breaking through on many occasions during the summer season.—3LN.

WESTERN AUSTRALIA

50 Mc.: Band conditions have been a complete washout for DX over the last month, nothing being heard since the first week in January. To cap the lot, the feed line on the 50 Mc. beam at 6HK has opened up somewhere along its length, which means extensive repair work.

Most of the gang seem to have turned their attention to 144 Mc., so will leave 50 Mc. for this month.

144 Mc.: 6BO spent a few days up at Bruce Rock with 6DW at the end of January and some interesting tests were carried out with Perth stations. Over several days, signals peaked to S9 both ways. It was found, however, that 6DW's old converter was considerably down on Rolo's and Don has been telling the story against himself that his converter on the 2 mx beam produced inferior signals than Rolo's converter on the 50 Mc. beam! I believe that state of affairs has since been corrected! 6ZAA and 6ZAZ both made contacts with 6DW, so things are on the up and up. 6RK and 6ZAV are of course none other than Don Brown complete with call sign at last. Welcome to 2 mx OM! I think you must have had about the longest wait of anybody for a license.

As it appears to be the season for portable expeditions, 6ZAA and friend, Bob Elms, packed their gear and trundled off to Merridin for two or three days. Signals were heard from Perth on three occasions and a carrier heard from Merridin by CBO at one stage, but no actual two day QSO resulted. Contact was established with 6DW over the 30 miles to Bruce Rock without any difficulty at all. Gear in use at Merridin was 6ZAA's home station off the a.c. with a five over five atop a 36 ft. piece of water pipe.

A few new call signs issued but not yet heard are 6ZAQ, 6ZAR and 6ZAS. I believe 6ZAR is doing his N.S.T. with 6ZAE at the moment, so may be some delay there. Leave at one week-end in five does not leave much time for Amateur Radio. 6ZAM should hit the breeze before long under the able "soothing on" of 6ZAA. 6ZAK is forcibly QRT for a few months, but should be back again about June. 6ZAT still to be heard about of a week-end fiddling with the xtal controlled converter. 6ZAZ has been playing around with a Command rx and converter, but rumour has it that an AR7 might be coming up shortly. That may well solve your rx problems for a while. Cee. 6AW still to be heard when time permits. Believe you have to move out of your present shack before long Denis? 6WJ has been having untold strife getting the 82B to drive successfully, but should have it OK by now. A five element beam does the radiating.

A point to note. The Institute proposes holding a Two Metre Scramble sometime in June. No date fixed as yet, but further details will be advised. At the moment it looks like being on similar lines to the annual 7 Mc. event, but there may be some need to modify the scoring system slightly or perhaps the times of operation to suit the occasion. Anyway, if you have any suggestions, don't hesitate to put them forward.—6HK.

WIRELESS INSTITUTE (N.S.W. DIVISION)

NORTH COAST & TABLELANDS CONVENTION

EASTER WEEK-END

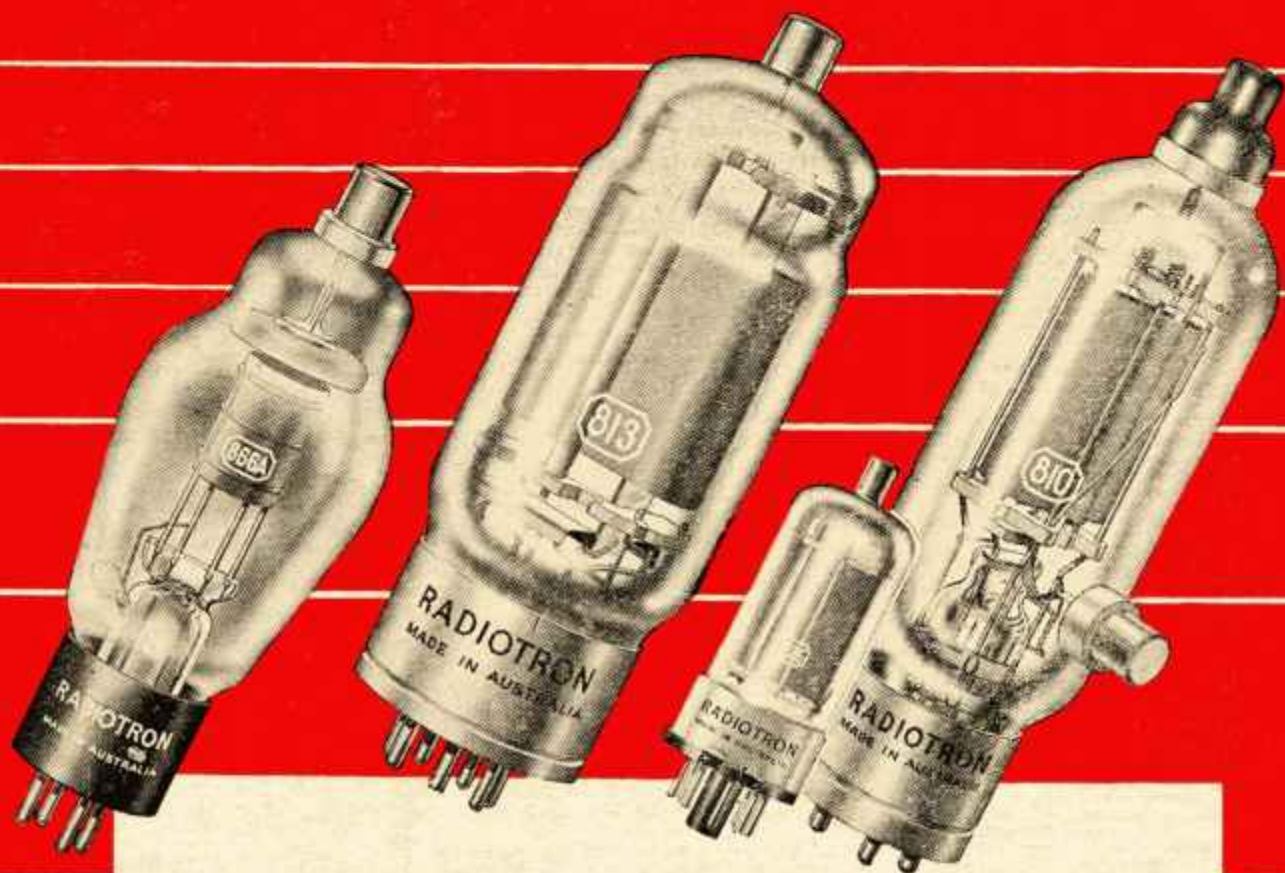
8th, 9th, 10th April, 1955

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- ★ New Attractions
- ★ 144 Mc. Hunts
- ★ 7 Mc. Scramble
- ★ Gerry Challenger Trophy
- ★ Abundant Prizes

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SHORT WAVE LISTENERS' SECTION*

S.W.L. GROUP BEACHES TO FAB CORNERS OF THE GLOBE

We have received two enquiries regarding the VK3 Division S.w.l. Group. Firstly, from Fred Kuhns, of 47 South 14th Street, Allentown, Penns., U.S.A., and secondly, from John H. McKendrick, of 21 "Adelaide Court," Hill Road, London, N.W.8. To both you chaps we offer a big welcome to this section of the Wireless Institute of Australia.

Fred heard of us while listening to a DX programme from Radio Australia, beamed to America. John will be leaving England soon and will be visiting VK3, so hope to meet you at our meeting John. He states that DX in London is quite good, hearing mainly VK2s, although no VK3s. The gear in use at his location is an 1155 with converter for 21, 28 and 50 Mc., plus 6-9 Mc. Command and 1152 modified for 2 mx.

From VK6, Albert Angus, of Diamond Tree, via Jurdee, W.A., we received a very informative letter. Albert is studying for his A.O.C.F. and we wish you lots of luck from VK3. Albert is using a 5-valve dual wave commercial job with vibrator power supply. All the best, and many hours of DX Albert.

Information regarding awards made available by the Japanese Society will be found in this issue under the heading of Federal QSL Bureau.

REPORTS OF THE BANDS

144 Mc.: Gerrard Lane heard six VK3s. Frank Seeber, of Preston, using a modified 522 to a 5-el. beam 20 ft. high, heard 45 VK3 stations.

21 Mc.: From Geoff Morris, all signals solid at 2400-0500 GMT: VR2CG, VK9DB, AI3AH, AI3AO, AI4AA, AI2AA, W2JAC/MM (near Tokyo), and a KH6.

14 Mc.: Geoff heard on this band: CE2, CE3, CN8, DU1, EA2, EI2, ET2, F8, F9, FI8, GD2, GW3, HB9, HZ1, KA9, KC8, KG6, KH6, KP4, KP6, KR6, KT1, KU4, KK6, LU4, LU6, LU7, MP4, OA2, OE1, PA9, PY3, ST2, SV6 (in Crete), VK1, VK9, VQ4, VQ5, VQ8, VS2, VS6, VU2, W3, W4, W6, W8/MM, W8, XZ2, YU1, YU2, YU3, YV5, ZC4 (in Cyprus), ZE2, ZK1, ZL, ZM6, ZP, ZS1, ZS6, 4S7, 4X4, 5A2, 5A3.

Stewart Little, of Belmont, N.S.W., heard: CM9, KA2, KA7, KA9, KC8, KG2, KG6, KH6, KR6, KR7, LU2, OQ2, OZ8, VK1, VK9, VS2, VS6, W2, W6, W9, ZL, 4S7. Gordon J. Hepburn, of N.S.W., heard: CE3, HC1, KA4, KA7, KH6, KP4, KR6, KV4, LU6, LU8, PY4, VK1, VK9, VR2, VR3, VS2, W4, W8/MM, ZM6, 4X4. Cards received from YV5EU, YV5EA and CN8MM.

At my location: CE3, CN8, FI8, GI3, HC2, KR6, LU4, PK2, PY1, PY4, TI, VK1, VQ2, VQ3, KZ2, ZC5, 4S7.

Len Poynter's home location: DU1, G3, HC1, HK2, JA2, OA4, VK1, VK9, VQ6, VR2, VS2, VS6, ZS5, ZS6, ZM6, 4X4, and while portable at Lakes Entrance using AR8: CE0, CT1, DL1, EI3, FR7, KA, KC, KG, KH6, KL7, LA4, LU1, LU7, MP4, OZ7, VQ4, VQ6, VS5, ZD6, ZL, ZS6, and 4S7.

7 Mc.: Stations heard on this band were JA6, VK2, VK3, VK8, VK7, VK9, VR2, WO, ZL.

* John Wilson, 37 Rayment St., Alphington, Vic.

Broadcast Band, S/W DX.—From Stewart Little, of N.S.W., we received notification that V.O.A. Station in the Philippines has been heard at 59 on 1140 Kc., running 1,000kw. between the hours of 1230-0100EST. Stewart also reports 2KP, New Plymouth, N.Z., on 1370 Kc., running 2kw. and 2YA, Wellington, N.Z., on 570 Kc.

Also from VK2, Gordon Hepburn reports Radio Ceylon at 59 on 25.2 mx. Also "Voice of Free China" located at Taiwan, Formosa, on BED7 42.1 mx, BED8 7130 Kc. and 25.6 mx, 11,736 Kc., daily at 1750 to sign off at 2100 China time (0950-1300 GMT).

IDEAS EXCHANGED HERE

Each month in this section of notes we hope to publish ideas received from our readers that would be of interest to other s.w.l.'s. throughout VK land. The ideas can be in the form of better reception hints to modifications to your gear for listening.

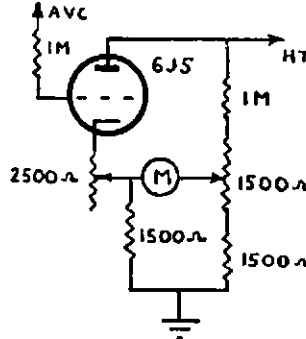


Fig. 1.—S Meter Circuit.

The idea for this month is from Bill Leeming, VK3ALW, and I have personally tried this and it is a beaut! For some time now I have been after a good S meter circuit for an AR8, but was unsuccessful until Bill came along with this one.

The circuit is shown in Fig. 1. and there should be no difficulty in making it operate. The valve is an ordinary 6J5 and the potentiometers 1,500 and 2,500 ohms must be ganged together and of the linear type. The meter can be of the 0-1 Ma. type, or if more sensitivity is required an 0-500 micro-amp. meter can be used..

S.W.L. CONTEST

This event is now in progress, from 1st January to 30th March. This is your last month for receiving those QSOs as the Contest closes on 30th March at 2359 EST., so get to it and make those rigs run hot.

All QSL cards must be sent to "Contest Committee," S.w.l. Section, W.I.A., 191 Queen St., Melbourne, C.I., by the last post on 30th June, 1955. Results will be announced over VK3WI in second week in August at 1130 hours. For full contest details, refer to the January issue, page 12. of "A.R."

DIGEST OF DX TIPS

- 3420 Kc.—VUD, India—Request Programme at 11.45 p.m. (all times EST).
- 3850 Kc.—EQO, Teheran, Iran—commencing at 12.30 a.m.
- 4900 Kc.—Colombo, Ceylon—12.15 a.m.
- 7180 Kc.—JOB2, Tokyo, Japan—English News at 1000.
- 7405 Kc.—Radio Herondello, Hanoi—10.30 p.m.
- 11930 Kc.—VUD, Delhi—3.15 p.m.
- 17805 Kc.—DZ16, Manila—1.30 p.m., News at 8.0 p.m.
- 17870 Kc.—GRP, London—8.30 p.m.

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FEDERAL, QSL, and DIVISIONAL NOTES



FEDERAL

Fed. President: W. R. Gronow, VK3JWG.
 Fed. Secretary: L. D. Bowie, VK3DU, Box 2611W, G.P.O., Melbourne.
 QSL Bureau: R. E. Jones, VK3RJ, 23 Landals Street, Box Hill, E.11, Vic.
 DX C.C. Manager: G. I. Morris, VK3BZ, 50 Eighth Street, Parkdale, Vic.

NEW SOUTH WALES

President: Jim Corbin, VK2YC.
 Secretary: Harry Hickin, VK2ACH, Box 1734 G.P.O., Sydney.
 Meeting Night: Fourth Friday of each month at Science House, Gloucester Street, Sydney.
 Divisional Sub-Editor: Ted Whiting, VK2ACD, 16 Loudon Street, Five Dock.
 QSL Bureau: J. B. Corbin, VK2YC, 78 Maloney St., Eastlake, Sydney (Inwards and Outwards).
 Zone Correspondents: North Coast and Tablelands: Noel Hanson, VK2AHH, Ryan Ave., West Kempsey; Newcastle: Ron Melb, Stuart, VK2ASJ, 98 Dunbar St., Stockton; Casmama and Lakes: Harry Hawks, VK2YL, 27 Confort Ave., Cessnock; Western: W. H. Stitt, VK2WH, Cambiowa, Forbes; South Coast and Southern: Eric Fisher, VK2DY, 2 Oxlade St., Warragong; South Western: J. W. S. Edge, VK2AJQ, Wallace St., Coolamon; St. George: Chas. Coyle, VK2YK, 84 Carlton Cres., Kogarah; Western Sabarbs: Barry White, VK2AAB, 33 Flavelle St., Concord.

FEDERAL

RESIGNATION OF ASSISTANT FEDERAL SECRETARY

As a result of business and health reasons, the Assistant Federal Secretary, Mr. John Rice Oxley, has found it necessary to tender his resignation from this position. John VK3AKA has been a most active member of Executive and it is with regret that his resignation is accepted. The duties of keeping a master copy of the Call Book, together with dispatch of material for overseas awards, were expeditiously carried out and directed. John has indicated that at a later date, when his present commitments are lightened, he will again be available for any duties connected with the furtherance of the W.I.A.

FEDERAL COUNCILLOR

Federal Executive has been advised that Mr. George Moss has again been elected to the position of Federal Councillor for VK6 Division for 1955-56. George, as VK6GM, is one of the older members of the Division and his wise council is much appreciated by those closely associated with him.

AMENDMENT TO CONSTITUTION

Under the direction of the Federal Council of the Wireless Institute of Australia, Federal Executive hereby gives notice that it is intended to alter the Federal Constitution (1947) of the W.I.A. as follows:

Section 29(a) By inserting immediately after the word "Proficiency," the words "or Limited Amateur Operator's Certificate of Proficiency."

LIST OF SUCCESSFUL AMATEUR CANDIDATES

The following is a list of candidates who were successful at the examinations for the Amateur Operator's Certificate and Amateur Operator's Limited Certificate held on 13th July and 12th October, 1954:

- New South Wales**
 E. A. Drutt, 43 Canal Street, Griffith.
 *W. H. Harder, Flat No. 8, Royal Bldg., Argent Street, Broken Hill.
 J. E. Thompson, 23 Light Parade, Bar Beach.
 M. G. Datson, 84 Ocean Street, Woolahra.
 *W. R. Cox, 44 Park Road, Hurstville.
 *J. B. Goodman, 29 Boolarong Road, St. Ives.
 *S. D. Russell, "The Nook," Oakes Road, West Pennant Hills.
 *P. G. Watson, 9 The Crescent, Homebush.
 *W. T. Boon, Bunnerong Road and Franklin Street, Matraville.
 G. J. Lee, 1183 Victoria Road, West Ryde.
 J. W. Bork, 42 Queenscliffe Road, Manly.
 I. A. Dunnelliff, 69 Duff St., Broken Hill Stn.
 *B. C. Fleck, 20 Yoolooma Street, Griffith.
 E. C. Savage, Box 631, Griffith.

VICTORIA

President: G. Dennis, VK3TF.
 Secretary: C. Gibson, VK3JFO.
 Administrative Secretary: Mrs. G. Pickering, Law Court Chambers, 191 Queen St., Melbourne.
 Meeting Night: First Wednesday of each month at the Radio School, Melb. Technical Collage.
 Divisional Sub-Editor: K. E. Pincott, VK3AFJ, 14 Duncombe Ave., Ashburton, S.E.11.
 QSL Bureau: Inwards—Graham Roper, VK3ZB, 26 Lucas St., South Caulfield, Vic. Outwards—Frank O'Dwyer, VK3JF, 190 Thomas St., Hampton, S.7, Vic.
 Zone Correspondents: Central Western: W. J. Kinsella, VK3AKW, Magdala, Lubeck; South Western: W. Wines, 11 Redford St., Warrnambool, and E. Giddings, VK3ANQ, 8 Nelson St., Warrnambool; North Eastern: A. D. Buchanan, VK3FD, "Booroonal," Warring; Far North Western: M. Folle, VK3GZ, 101 Lemon Ave., Mildura; Eastern: C. J. Arnold, VK3AJA, McAllister St., Stratford; North Western: C. Case, VK3ACE, Cummins Ave., Birchip; S.W.I. Group: John Wilson, 37 Rayment St., Alphington, N.20.

QUEENSLAND

President: Harold Murphy, VK4HM.
 Secretary: W. A. Young, VK4YA, Box 63J, G.P.O. Brisbane.
 Meeting Night: First Friday in each month at the Royal Geographical Society Rooms, Ann Street, City.
 Divisional Sub-Editor: J. T. Hope, VK4XL, Royal Parade, St. John's Wood, Ashgrove.
 QSL Bureau: Inwards—J. Files, VK4JF, Wanda St., Buranda; Outwards—Miss Clair O'Brien, 93 Jardine St., Stafford.

SOUTH AUSTRALIA

President: G. M. Bowen, VK5XU.
 Secretary: R. G. Harris, VK5RR, Box 1234K, G.P.O., Adelaide. Telephone: J 1151.
 Meeting Night: Second Tuesday of each month at 17 Waymouth St., Adelaide.
 Divisional Sub-Editor: W. W. Parsons, VK5PS, 10 Victoria Avenue, Rose Park.
 QSL Bureau: Geo Luxton, VK5RX, 8 Brook St., West Mitcham, South Aus. (Inwards and Outwards).

WESTERN AUSTRALIA

President: F. A. T. Tredrea, VK6FT.
 Secretary: J. Mead, VK6LJ, Box N1002, G.P.O. Perth.
 Meeting Place: Perth Technical College Annex, Mounts Bay Road, Perth.
 Meeting Night: Third Tuesday of the month.
 Divisional Sub-Editor: D. E. Graham, VK6SHK, 110 Edinboro St., Mt. Hawthorn.
 QSL Bureau: Jim Rumble, VK6RU, Box F319, Perth, West. Aus. (Inwards and Outwards).

TASMANIA

President: L. E. Edwards, VK7LE.
 Secretary: W. G. Taft, Box 371B, G.P.O. Hobart.
 Meeting Night: First Wednesday of each month at the W.I.A. Club Room, 147 Liverpool Street, Hobart.
 Divisional Sub-Editor: L. E. Edwards, VK7LE, 126 Strickland Ave., Hobart.
 QSL Bureau: Ray Calvert, VK7RT, Box 371B, G.P.O. Hobart. (Inwards and Outwards).
 Zone Correspondents: Northern: M. A. Chaplin, VK7CA, 56 Trevallyn Rd., Launceston; North Western: R. K. Wilson, 11 Cunningham St., Burnie, Tasmania.

- G. V. Randall, 8 Chisholm Street, Inverell.
- *P. W. White, 7 Allenby Road, Orange.
- C. E. J. Sims, 2 Verlie Street, Merylands.
- L. W. Squires, 27 Fletcher Street, Bondi.
- F. G. Barron, Flat 2, "Exeta Manor," 78 Macquarie Street, Parramatta.
- E. H. T. Burt, 35 Paul Street, Auburn.
- D. Sellars, 90 Sandringham Street, Sans Souci.
- A. R. J. Topp, 33 Western Road, Parramatta.
- *L. W. Cook, 159 Bronte Road, Waverley.
- A. H. Wass, 1 Cannons Parade, Forestville.
- J. W. Cohen, 27 Hinkler Crescent, Lane Cove.
- J. P. Folkard, 10 Givelly Street, Watsons Bay.
- G. C. Isaacs, 43 Tupper Street, Merrickville.
- *W. J. Lark, 34 Church Avenue, Westmead.
- J. W. Porter, 11 Telepia Avenue, Carlingbah.
- †J. H. Hansen, 70 Robey Street, Maroubra.

Victoria

- *A. W. D. Wilson, "Bundorant," Glenhompson.
- R. S. Beckett, No. 8 Married Quarters, School of Signals, Balcombe.
- K. E. Semmler, Box 26, Murtoa.
- *I. C. McKellar, "Carramar," May Street, Elsternwick.
- G. A. R. Pearce, 207 Prospect Hill Road, Surrey Hills.
- P. C. Ryan, 10 Seymour Grove, Camberwell.
- *R. A. A. Foot, 43 Munro Street, Ascot Vale.
- *B. M. Stares, 17 Daffodil Street, Wendouree West, via Ballarat.
- L. H. Weller, Main Street, Merrigum.
- G. LeH. Hipwell, 10 Beach Avenue, Elwood.
- R. J. Hilderbrand, 133 Simpson Street, East Melbourne.
- H. T. Holmes, 12 Victor Street, Sunshine.
- J. R. Fryer, 424 Plenty Road, Preston.
- C. Luckman, 2 Milton Street, Canterbury.
- M. K. Tulloch, Fernshaw Road, Healesville.
- *D. H. Francis, 5 Noel Street, Ivanhoe.
- *H. S. A. Lilburn, 21 Albert Street, Mitcham.
- *D. H. V. Rankin, 1878 Malvern Road, East Malvern.
- *D. G. Walker, The Lodge, Ormond College, Carlton.
- *R. J. Harrison, 7 Tierman Street, Footscray.

Queensland

- *D. L. Bates, 150 Lytton Road, East Brisbane.
- *Dr. I. C. Morrison, Avon Lodge, 171 Riding Road, Hawthorn.
- *N. A. Roberts, 41 Kent Street, Rockhampton.
- *D. A. Fraser, P.O. Box 131, Warwick.
- *G. L. Lang, C/o Warwick Broadcasting Co. Pty. Ltd., Warwick.
- *J. W. Kickbusch, C/o Mrs. Nolan, 50 Moreton Street, Norman Park.
- *J. Fursdon, 56 Brook Street, Windsor.

South Australia

- M. M. Harding, 121 Collins Street, Broadview Gardens.
- *R. G. Henderson, 14 James Street, Southwark.
- *E. J. Kenny, 5 Perth Street, Ferryden Park.

- *E. W. Menkins, 26 McKenna Street, Kensington Park.
- *E. M. O'Neill, 51 Nelson Street, Harcourt Gardens.
- F. A. Eastick, C/o Post Office, Alice Springs.
- *L. M. McGrath, 14 Tallara Ave., Mt. Gambier.
- *E. C. Jellett, Norton Vale, Hynam.
- *G. F. Tuck, 57 Cowra Street, Mile End.
- *R. W. G. Wehr, 20 Kintore Avenue, Prospect.
- *E. B. Stephenson, 4 Piccadilly Circus, Colonel Light Gardens.

Western Australia

- *H. Iflla, 32 Boulder Road, Kalgoorlie.
- *A. R. Deverell, 20 Streatley Road, Rivervale.
- *M. R. Meharry, 98 Kalamunda Road, Kalamunda.
- *D. A. Meadowcroft, 132 Eton Street, North Perth.

Tasmania

- *J. R. Milway, Cottage 68, Tarraleah.
- *L. J. Hodgkinson, Wellington Street, Longford.
- *W. Grewling, A117, Bronte Park.
- R. D. Nicholls, 30 Pearl Street, Wivenhoe.
- *P. E. Blundstone, "Barclay," Whitemark, Flinders Island.
- D. G. Cartwright, 38 Mary Street, Launceston.

Territory New Guinea

- †C. W. H. Rasmussen, C/o. Australian M.A.F. Building, Wewak.
- †R. A. Sutherland, Central Avenue, Rabaul.
- * Qualified for Limited Certificate.
- † Special Examination.
- † Special examinations held at Port Moresby and Rabaul.

FEDERAL QSL MANAGER

RAY JONES, VK3EJ, MANAGER

Hereunder are the listener awards made available by the J.A.R.L., Box 377, Tokyo, Japan.

- H.A.C. (Heard All Continents) will be awarded to listeners submitting an Amateur Station QSL for six continents. Five I.R.C. to be included with application.
- S.W.L.-A.J.D. Proof of having heard the 10 Japanese call areas (10 I.R.C.).
- S.W.L.-W.A.J.A. Proof of having heard 46 Japanese prefectures. (10 I.R.C.).
- S.W.L.-J.C.C. Proof of having heard 100 cities in Japan (10 I.R.C.).

The W.I.A. are at present negotiating with the J.A.R.L. for an agreement as to the acceptance of certification in lieu of having to forward QSL cards to Japan for these awards. Until the negotiations have been completed, all applications for listener and transmitting awards must be made direct to the address stated above. The League of Radio Amateurs of Mozambique in forwarding best wishes for 1955, express the

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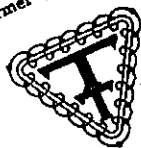
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hope that "during the year that now begins all Amateurs of the world shall work in complete co-ordination, having in view the cultural possibilities of their emisions and the spirit of fraternity and friendliness which should characterise Amateurs throughout the world."

A novel QSL comes from HK3FV. The board is a thin shaving of wood. On the obverse in characters of velvet fabric is the call sign, while on the reverse is printed all the details of the QSO and the equipment and achievements of the owner of the station. Unique and costly.

Frank Anear, ex-VK9WZ, advises under date of 15th January, that he expected to leave Momote on posting south around 24th January. After a period of leave in his home State of VK5, he expects to resume duty at Laverton around April. Frank has been off the air since December and has spent the time prior to departure in constructing a portable rig. Frank bemoans the reception difficulties in Momote, having an 11,000 volt power main running parallel with one leg of his antenna and not too far distant from it. Here's to a fine spell of leave Frank, and we hope to hear you on again soon, preferably under a VK3 call sign. Meantime let me have your VK5 QTH please.

QSL traffic for January, 1955, showed a marked rise, indicating that possibly we are commencing to climb out of the trough of the cycle. The writer has been on vacation at Warburton. Had some thousands of contacts during the fortnight, often knocking over seven and eight at a time. Unfortunately the contacts were of a physical nature and consisted of slapping at the myriads of bush flies that would not take any other form of notice to quit. Though I had solved perpetual motion at one stage. Apologies for any delays to correspondence during my absence.

Bill Sawyer, VK4KJ, of Thursday Island, will be remembered by old timers when it is mentioned that he was VPIWS, of Suva, for a fair period. Bill was the first Amateur to operate in Fiji and naturally was a much sought-after station. Writer ran skeds with him in the early thirties, having 60 or 70 contacts. Bill has held VK4KJ for nine years and uses an AT5 with 750 volts on a pair of 807s. Antenna is a 260 ft. long wire. If memory serves me right, Bill originally hailed from the Hurstbridge area of Victoria.

Any VK stations who contacted OD5AF, of Lebanon, and who have not received a QSL will be interested to know that the card can be obtained from G3KCE, the operator being the ex-2nd op. of OD5AF, and is also ex-MP4QAJ. Mailing address is 54 Bassett Road, London, W.10, England.

In a 3.5 Mc. QSL to BERS195, Bob Morris, W7JLU, says he would welcome more VK a.w.l. reports on his 80 metre signals. W7JLU runs a Viking tx with 150 watts input.

BERS195, Eric Trebilcock, has just returned from a 3,000 mile car trip. Journeying was completed in 28 days. Besides punishing the car, Eric did not sit down very long in any spot. Says now will be busy for a month painting the house. After the Lord Mayor's cart comes the—tumbrell.

NEW SOUTH WALES

The January meeting of the Wireless Institute of Australia (N.S.W. Division) was held in the presence of a large gathering at Science House, Gloucester Street, on 28th January. The President, J. Corbin, 2YC, opened proceedings and welcomed the visitors who had already arrived from country centres to attend the Convention. Those so welcomed were 2XF, 2XZ, 2PL, 2BQ, 3MZ, 2AQF and 2EL. The minutes of the previous meeting were read by the Secretary, Harry 2ACH.

A report was given regarding the very successful Xmas Party organised by George 2AGO, and it was stated that a final profit of £31 resulted from the function. Members are reminded that it is the intention of the Social Committee to organise more functions and are further reminded that the theatre party will be held at the State Theatre, Market Street, Sydney, on Thursday, 10th March. All those desirous of being present are asked to contact George 2AGO and get those applications in for tickets. News of further activities will appear in your Bulletin each month. George gave a detailed report on the future activities of the Social Committee and it is pleasing to learn that a Ladies' Auxiliary has been formed, the members being Mrs. Williams (2ARW), Mrs. Wilson (2AGO), and Mrs. Hickin (2ACH). These ladies will need all the assistance others can give, so we suggest that anyone interested will contact the Committee.

The lecturer for the evening, C. Bardwell, although he had only just arrived from Melbourne in time for the meeting, took the rostrum and delivered an extremely interesting lecture on the "Development of Marine Trans-

mitters." Ces traced the evolution of Marine Communications since about 1914 in an extremely capable manner and dealt in detail with the many systems which had been used pointing out their advantages and disadvantages. Slides were used extensively to illustrate the lecture, and finally a hearty vote of thanks was proffered to the lecturer in recognition of his fine efforts. This vote of thanks was moved by Vaughan 2VW.

The N.S.W. Amateur Radio Co-operative Ltd. has got away to a fine start, and the meeting authorised the N.S.W. Division to take up 150 blocks of shares in the Co-operative, this decision was unanimous. All members are asked to contribute, the sooner the money necessary is received, then the sooner will the objectives of the Co-operative become a reality, to the benefit of all members, city and country alike.

The meeting closed at nearly 11 p.m. and concluded out on the steps in the usual manner.

ANNUAL HAMFEST

The next day, Saturday, 29th January, was the date set for the 1955 Annual Hamfest, the location being again at the R.A.S. General Office building at the Showground. A tx was installed during the forenoon by Lt. Com. Greg Thrum, 2ANP, and was operating till night on 9 p.m. on 80, 40 and 20 mx and made many successful contacts. For those interested, the antenna was a random length of wire held up by one of the nearby stands. Registration and a general get-together took place from 1.30 p.m. and from the outset it was noticed that there was a goodly crowd of Amateurs in attendance, the final figure was approx. 100. Owing to the unforeseen absence of the first speaker for the day, five lecturettes were given by various members and the prize for the best lecturette was awarded to Barry White; he received a microphone donated by 3ML.

Following was a series of lectures given by members of the Police, Army and Air Force on the Rescue and Intelligence Emergency Centre and Organisation. Wing Com. Pickard pointed out his particular organisation tied in with the whole scheme and further illustrated how valuable was the assistance rendered by Amateurs in times of emergency. He was followed by Supt. McAuley who gave a most detailed and interesting discourse on the whole organisation, what it was formed for, what it does and what it hoped to achieve with the assistance rendered by Amateur Radio in the past. He stressed that messages should not at any time be sent unless authorised by the local Police and gave illustration of the chaos and duplication which can be caused in this manner.

The following speaker, Major Cox, also spoke of his part in the scheme of things as did Sgt. Glasscock, of the Police Dept., and added that in areas where crystals have been deposited at the local Police Station, that any Amateur can apply to have those crystals for the purpose of tests with VKG and VKG3 on Sunday at 9 a.m. to 11 a.m. All local Police authorities have received instructions on this matter and will be only too pleased to co-operate with the Amateurs in the strategic areas. Pt. Sgt. Frank Hine, 2QL, wound up the lectures on this matter and finally the President thanked all participants for their attendance and the interesting material they had given. A tape of this was made and will be forwarded on the country circuit in the near future. All are urged to hear it and comments will be appreciated by the Council.

Following de-modulation of an 18-watter, a Dutch auction was held resulting in a win by 2EL of a 2E26. A number of competitions were held during the afternoon, resulting in prizes being won by 2PN, 2BQ, 2YB, 2AHA, 2ACD, 2AAB, 2BG, 2GS, 2MB and 2VW. A prize donated for the Amateur who had travelled the greatest distance was won by W6EJX. The Ladies' Committee had of course been in operation all afternoon attending to the needs of the inner man, and it appeared that there was a never ending supply of cakes, sandwiches and cups of tea. Our thanks go out to Mrs. Burke, Mrs. Corbin, Mrs. Williams and Mrs. Walters for their efforts, as do the thanks of all go to Don 2ASW and Leon 2AOJ for their tireless efforts in the dispensary of the 18-watters.

A further lecture was given on Antenna Matching by Bob Winch, 2OA, and following further activities in the form of a Dutch auction and Pick-A-Box, films were shown and the Convention concluded at a late hour.

Further thanks are made by the Council and members to all who played a part in the organisation, and possibly we may be permitted to single out, apart from those mentioned previously, 2YB, 2AWQ, 2EL and our comper, Ray 2ARW.

SOUTH WEST ZONE

Zone Officer Jim 2AJO, of Coolamon, was of course in the big smoke for the Hamfest and passed these notes along for the zone. The

main items of interest this month has been the Xmas Party and Social held at Griffith on 14/12/54. No visitors from other zones or the city were present, but the OMs, XYLs and YLs, to say nothing of the small fry, had a really good time.

A further new call is current in the zone—2CS. Evan Savage, located at Griffith. 2AJO and family are holidaying at Warramong, the domicile of Eric 2DY and Peggy. Stewart 2PL, Lila and family are also holidaying at Woolongong, so it appears that a miniature Hamfest is taking place. Lyn 2AQE, of Coolamon, has moved QTH to Wagga; Lyn reports however that it will be some time before he is active from the fair city as house building takes priority. Zone representatives to visit the Convention will be 2AJO, 2PL, 2AXO, Assoc. Bruce Fleck, 2BQ, 2AQF, and 2PN.

During the month the Tumut gang had a visit from 2APQ and 2HO who made some contact from the Tumut area, both on their way to Mt. Kosciusko and return, stations operating at the time included 2ZAA, 2BQ, 2PN and 2HO. Let us hope that before long the QRN will abate on 80 metres so that the zone ragchew will again be in operation.

NORTH COAST AND TABLELANDS ZONE

Zone Officer Noel 2AHH reports a little news from his area. JUF was recently visiting Taree, while Jack 2ADT has been touring and took in Muswellbrook, Newcastle and Sydney prior to the return to Inverell. Incidentally, Jack now has a shack at Urunga, so no doubt will be spending quite a lot of his time by the sea. Crieff 2XO, who now resides at Coffs Harbour, is holidaying, but we have no reports of his movements. Ted 2AVG has moved again, is now located at Port Macquarie. We do not know whether he is on the air, but all interested are requested to contact Ted or 2AHH in order to book accommodation for the Urunga Convention at Easter. It is imperative that this accommodation is booked as early as possible as the organisers must have a reasonably good idea of the numbers to be expected. As yet I do not have any details of the programme to hand (please note Ted), but we could suggest that you bring along a two mx snooper as there will be competitions along those lines. So, then up in your hundreds, bring the XYL, YL and the kiddies; all are assured of a full and enjoyable Easter. Don't worry about the Pacific Highway as it is quite OK, ask 2AHH he was through this way last month.

George 2AUR no sooner got his call than he moved to Sydney; he is located at Denstone and operates very regularly on 7 and 14 Mc. Alan 2ASO is now in the big smoke and is a P.M.G. monitor at Middle Head, lives at Cammeray.

HUNTER BRANCH

From Les 2AOR comes the month's news. The monthly meeting of the Branch was held at the Tighes Hill Technical School on 14/1/55, 21 members and associates being present. A notable visitor present was OHINY. Jim 2AHT, a new member, was welcomed by the President Lionel Swain, 2CS. A very interesting film was screened, "Pipeline to the Clouds," and this in turn was followed by a lecture by Angus 2IQ, who spoke on "Some Fundamental Aspects of Antennae." This lecture, delivered in Angus' inimitable style, provoked much discussion and many questions were asked of the lecturer.

Jim 2ZC attended the "Radio Founders' Day" outing to Glenlawn Dam as the Hunter Branch representative. Associate Rodney Prout, who is also the very able Branch projectionist, sat for his A.O.C.F. recently and all hope the results are favourable to him. Ron 2ASJ, who, owing to medical advice has to maintain another three months' silence, in a letter sends the following information. Jack Hamilton visits Ron each Tuesday to act as Ron's second operator. BERS-195 was in Newcastle recently as were 2ADT and XYL and paid a visit to Ron as well as other shacks. Mr. Charters also visited Ron on behalf of Jim 2AJO.

Six members of the Hunter Branch made the trip to Sydney for the Hamfest, 2AHA, 2AHT, associates Gordon Sutherland and Dave Ellesley, and 2AOR. Dave acted as Hunter Branch representative at the general meeting on the Friday night.

The next meeting of the Hunter Branch will be held on 11th March, 1955, at 8 p.m., the location being the Tighes Hill Technical College. The lecturer for the night will be decided, so for further information listen to the Sunday morning broadcast. In addition, listen for 2AWX each Monday at 8 p.m. on about 7083 Kc. for news of the Hunter Branch doings.

METROPOLIS

Apparently nothing has been occurring in this area as we have not received any reports this month. No doubt many were recovering from the activities at the Showground. 2ABO

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SPECIFICATION

Recommended load resistance—not less than 1 megohm.
Output level —65 db ref. 1 volt/dyne/cm².
Frequency response—substantially flat from 30 c.p.s. to 10,000 c.p.s.
Directivity—non-directional.
Size—2½" spherical diameter.
Connector—Standard international 3-pin.

MIC 16



£24/19/6

MIC 22



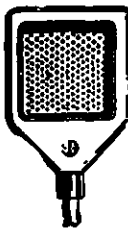
£9/18/6

This omni-directional Microphone is robust in construction, with a pleasing appearance. Vibration, shock or low frequency wind noise will not affect the performance. The low frequency cut-off is dependent on the load resistance. The cut-off is given by the quotation, $F = 80 \div R$, where $F =$ c.p.s., $R =$ megohms. An adaptor (floor mounting) is available at low extra cost.

SPECIFICATION

Output level = —50 db ref. 1 volt/dyne/cm².
Output impedance—equivalent to approximately 0.002 uF. (0.8 megohm at 100 cycles).
Frequency response—substantially flat from 40 to 6000 c.p.s.
Recommended load resistance—not less than 1 megohm, dependent on low frequency response.

MIC 28



£5/19/6

Designed to give freedom of movement, this Microphone is small and non-directional. Housed in a soft moulded rubber case, which gives protection against shock, it is provided with a pin at the rear of the case for pinning to the label.

SPECIFICATION

Output level—approx. —55 db ref. 1 volt/dyne/cm².
Recommended load resistance—5 megohms.
Frequency response—level throughout the whole of the audible spectrum.
Capacity—0.0015 uF. at 1000 c.p.s.
Impedance—100,000 ohms at 1000 c.p.s.
Cord—6 ft. shielded cable.
Size—1-9/16" wide x 2¼" long x ¾" thick.

MIC 35



£2/15/-

substantially flat response from 50 to 5000 c.p.s.

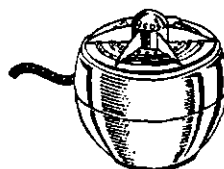
SPECIFICATION

Output level: —55 db ref. 1 volt/dyne/cm².
Cable—approx. 4 ft. of co-axial supplied.
Weight—6 ozs. unpacked, 7 ozs. packed.
Dimensions—microphone only 2¼" x 2½" x ¼"

The MIC 35, undoubtedly the best value ever offered, is ideal for amateur transmitters, public address, etc. Housed in an attractive die-cast case, it features a high sensitivity and substantially flat characteristics. Provided with a built-in shunt resistance of 2 megohms, it will, when connected to the grid of the input valve, give a

This Microphone has been designed for the high quality public address and home recording field. High sensitivity and flat characteristics are obtained by a specially designed acoustic filter. Housed in an attractive plastic case with an unexcelled response for its size and price. Unaffected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s.

MIC 33

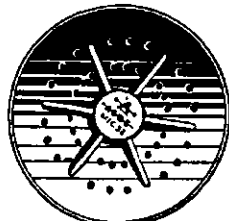


£6/18/6

MICROPHONE INSERTS

CRYSTAL MICROPHONE INSERTS

MICROPHONE INSERTS



(MIC 32 illustrated)

These inserts are available in varying sizes ranging from as small as 15/16" square to 1-13/16" round, with various thicknesses from 7/32" to 9/16". Suitable for every purpose such as hearing aids, public address, tape recording, amateur broadcasting, etc., they have responses from 2250 c.p.s. to 3500 c.p.s. at 5 db to 30 db. Insert can be supplied with or without 10 meg. resistor as required.

MIC 32 insert, £2/15/6; all others, £1/19/6.



(MIC 23 illustrated)

AMPLION (A'SIA) PTY. LTD.

EXCLUSIVE AGENTS: SYDNEY, AUSTRALIA

is better in health again, and will be heard always bawling out, with the assistance of Alf 2AVL. 2AJL is now in new location and getting settled in; Bill does a lot of listening on 14 Mc. and gets a few contacts with 9OK, who will be in Aussie in a few weeks on furlough. Another one to visit Sydney is 9DB who will be here by the time you read these notes.

2FA is well again and has the tx to his liking, still reaches out to the nethermost parts, only worked a TF recently at 9 p.m.—must have a good beam! 2ACD also gets out with the same type of beam. 2AAB now has super-modulation on account of the new mike. 2APT, 2IX, 2AEK, 2QP, 2NJ and others natter nightly, Jim 2AEK is so sick of it he gets on the band at 7 a.m. some days. Another one heard more of late is 2AGU; knew the bug would bite harder Harry.

2GE is putting a nice bit of r.f. out now, will be another one for DX soon. 2ID in between feeds of sea food is heard again on 14 Mc. but does most of it on 21 Mc. Lots of calls in this area have not been heard of late. 2ACI is very busy but gets on occasionally. 2AGW has had trouble, but the worst is over we hope. 2JP enjoying his retirement, drives around a bit but is having a poor year all round with the tennis, cricket and all that. 2ACH is now on 7 Mc.; nice to hear you, Harry. 2AFE busy on 21 Mc. still. 2AQH doing very well also on that band as is his next door neighbour. 2AKV. 2AZN has a very fine home designed rx nearly finished; his cobber 2FM is holidaying at Macksville. 2ACN heard several nights a week now, as is 2ADL—traps permitting. 2OQ doing nicely with the beam. 2AYH had a visitor recently, 2APS from Tamworth, who was bemoaning that he never heard the Sydney stations; couple of nights after his return home, the short skip was in to Tamworth, wouldn't it?

VICTORIA

In reply to many requests, mainly from VK5, I'm again spending time which I can ill afford to run off a few notes for this month.

The February meeting of the largest and best Division in the Commonwealth was held in the usual place to the usual gathering on the second of the month. After opening the meeting, the President handed the meeting to Syd 3ASC, the speaker for the evening. Syd spoke on the use and abuse of hand tools. Most of those present envied the assortment of tools Syd produced. "Tisn't everybody who can run to more than one screwdriver, one pair of pliers, a soldering iron and Mum's slissors. Syd is expected to give another talk later in the year when he will go a step further and discuss power tools. He will then be way out of my class. Here is where I take up trains. After a hearty vote of thanks, the meeting adjourned to pay homage to Lady Nicotine.

On resuming activities for the evening, B. Bond, 3ABX; G. Sutherland, 3ZAA; M. Williams, 3ZAW; and C. Taylor were admitted as members of the Division. Welcome gentlemen and please come to the meetings every month.

A sub-committee has been formed to look after our affairs during the Olympic Games. 3AHH and 3TE at present comprise the members of this committee. No doubt in time it will be expanded, so if you can spare a little time, keep them in mind and offer your help.

Some little time was spent deciding the programme for the next meeting. First it was to be a Swap Night, then a Picture Night when the YLs, XYLs and families would come along. Then somebody suggested that we have both on the same night. Some wag was all in favour. He promised to bring his XYL in and swap her—for what I did not learn, but his offer clinched the argument. No Swap Night! In short, bring your family to see "Blue Ice," a film taken in the Antarctica.

Many thanks to the chap that bemoaned the fact that meetings do not get enough advance publicity in these columns. Well fellows, I get my information from the same place as you—VK3WI on a Sunday morning—if I feel like dragging myself out of bed to listen to the "News for country members and swells." To elaborate, I usually go back to bed after listening to VK2WI. I feel sorry for the chap who has to write the script for VK3WI, but surely after 35 broadcasts everybody knows the Call Book is available at the rooms, etc., etc. What! You didn't? Well you know now.

Just to prove I do hear the broadcast occasionally, I heard that moves are about to form a Hi-Fi Group within the Division. Now I recall the editors of a prominent radio journal deprecating the trend of the radio enthusiasts to audio and I'm with 'em. As I see it, you're more likely to woo your transmitting members to the audio ranks than the audio ranks to us. After all, most of them know next to nothing of the technical aspect

of the business. Their theory—if it costs more, it must be better. If you doubt me, get amongst a few of them like I did.

Can see I'd better soft pedal a bit or I'll be bucking authority again and will cop a letter written on stiff paper. After all, if I stick my neck out often enough the axe must fall. Just to show that I'm not always again Council, I support the idea of a Papua-New Guinea Division whether they have 25 or 250 members. The main thing is to have them in the W.I.A. Good for you fellows for wanting to be in it.

By the time this hits print we will have a week to the National Field Day. For those not going portable, put the rig on the air and give the portables some encouragement.

NORTH EASTERN ZONE

The dogs bark and they say that Peter 3APF is temporarily losing interest in Radio, but should return in due course. However, Ken 3KR is keeping up his Radio, although neither he nor Lex 3AIL have had much luck on the DX. Col 3WQ is throwing in a little gardening as well. Although Vic 3ABX has not been seen lately, Hugh 3AHF is about in good form, but Jack 3FF is probably not able to go beyond the VL3QB net. Opportunity has not been made to contact our Wangaratta contingent—Jim 3JK, Howard 3YV, and Jack 3AKC. Henry 3HP has been busy working on his Rural Fire Brigade net, and Des 3BP has got quite an array of aeralns now, but Ron 3AQG has not been accurately tracked this time.

Coming over to Shepparton, Associate Jim Muntz, of Nathalia, was recommended to contact Les 3ALE for some good practical advice on his construction problems. Johnny 3ACK, Murray 3HZ and Brian 3ASF have not been heard of recently, and no doubt, Alex 3AT has all his time earmarked these days. Alan 3UI is going along with his constructional work, and Keith 3JC is building a new house, so placed on his block to allow the erection of a half-wave 80 mx antenna. Syd 3CI has been having some more success on 2 mx at time of writing. George 3GD had his place of business "burgled" recently. It is not known how Tom 3TS is getting along with his a.c.

Chas 3ACW has not been seen since he was spotted in Nagambie, and Des 3CO has been left in peace lately, and probably Frank 3ZU is also bowling quietly along his way. One of the foundation members of our zone in the post-war period, Doug Tacey, is down in the last call sign amendments list as 5DW, along with Doug who was listed as 7JJ. Our Associates Vern and Clarry in Cobram have also been left in peace, and up to the beginning of February Jim has not had any fires to fight. It is unfortunate that it is so far to Tongala, because that is the home of Stan 3AGT.

EASTERN ZONE

There is little in the way of Amateur activity this month. It would appear that some of those who were most eager to get their tickets a few years ago have now lost interest. If the notes on this zone appear a little brief, it is because there is nothing much happening, or if it does, one does not hear of it. George 3ABN was seen playing around with pumps, pipe-lines, etc., keeping the local cow cockles happy; he also says he hopes to get back on the air before long. Leo 3SG was making big plans for an 813, but they seem to have fizzled out as he has not been on the air for months. It's about time we heard something from Bert 3EB too, or are you too busy turning out sausages these days? Jack 3FK should have his AR88 in action before long and we expect him back on the bands grabbing the choice DX then.

CENTRAL WESTERN ZONE

Greetings, gentlemen, your worthy or unworthy scribe, whichever you deem appropriate, is this month none other than that bewhiskered fugitive from a barber's shop, VKIAC, who has been sheathing much perspiration in the Wimmera heatwaves. Very sudden on the constitution after the cool sea breezes on Macquarie Island I can tell you. Anyway fellers, we had a mighty trip and I must take this opportunity of thanking all the zone members who so kindly kept in QSO with me during the year; it was certainly a first-class morale booster, with special thanks to 3TA, 3AKW and 3AFO. I think all the other expedition members who used to regularly visit the radio hut enjoyed hearing the zone activities almost as much as myself.

Unfortunately the ex-VKIAC rig is still in store at Melbourne, but have hopes of getting it here shortly, enabling me to join in the zone hook-ups signing 3IB once more. This time Lubeck is only a temporary QTH and will be QSY to Dimboola about the middle of March.

The reason I was hauled into the job of compiling this month's notes is the fact that Bill 3AKW has gone galavanting away on holidays

on a sea trip to Sydney—lucky blighter. I'll give you a lesson in hanging over the rail if you ask me kindly Bill! Incidentally, Bill must be congratulated on being selected once again to represent the Country Week's Cricket Team in Melbourne. Harold 3AX has just returned from three weeks holiday in Melbourne. Not very much news about the zone as we are a little out of touch with people at the moment. Was present at 3AKW's during last week's 80 mx hook-up, but apart from 3DP and 3AKP at roll call, old man QRN seemed to have the upper hand.

Byron 3TA had the misfortune to lose his new beam in a bad storm recently; tells me it was such a mess he just carted it to the local dump and tipped her in—rotten luck Byron. I know you put a lot of work into that beam too, anyway, don't be too discouraged, that simple dipole used to put a pretty potent signal down amongst the penguins.

Funny story of the month. 1AC walking down main street in Horsham. Youngster leans out of window of parked car with the remark, "G'day Father Christmas!!" Grrrr such is the price of fame!

QUEENSLAND

The attendance at the January meeting was very poor, and owing to the lack of a quorum, only the business that was urgent was dealt with. The Institute is now using the downstairs hall so seating accommodation is plentiful.

When these notes reach you, we will be calling for nominations for Council, so please submit your application duly signed, moved and seconded, as we will be looking for new councillors. I have it on good authority there will be quite a few of the old councillors not nominating this time.

Remember! Early in April for the Annual General Meeting and Annual Dinner, so keep it in mind and make your attendance at either or both of these functions a certainty. We will welcome those of you we have not seen in years.

The Contest Committee informs me 4SF and 4PQ got certificates for their R.D. scores and 4WH got a host of gear, being the VK4 who scored nearest to the average of all logs points submitted by VK4-VK9.

April will be the month for the VK4 Contest. The first prize being an open order for £2/2/- and holding the Shield for 12 months, which is at present held by VK4PQ, so what say some competition for him this year. Second prize has not been decided, third prize is three 5-pin ceramic plug-in coil formers.

The rules are as last year, 1 point per contact, 1 contact per band per station, and at least five contacts between any two stations working again on another band. Logs to be in by the 31st May. Official log sheets would be appreciated though not a necessity. These can be obtained from the Secretary at a nominal price of 6d. a dozen.

Remember, we still want your ideas for an Annual Convention. To date we have had only two letters submitted and as a lot of thought will have to be put in to it, the more ideas the better.

This Division wishes to note the death of Mr. Herb Core, ex-VK4HC, who was accidentally killed on 20th December at Capalaba while making frequency measurements on a tx. Herb, though a grandfather, was a relatively young man, being 47. He was an Acting Radio Inspector, and a candidate at the Recent R.I. examination. He relinquished his Amateur license some four years ago.

TOWNSVILLE JOTTINGS

A well attended meeting of the Townsville Amateur Radio Club was held at the residence of Graham 4BX on Thursday, 13th January, and augurs well for the club this year. A welcome by the President 4RW was extended to Max Newell, ex-Woomera Radio Club; Bill Hanss, ex-VS1FD; Joe Hanran, ex-VK9JH; and Ray Bosanko, all of whom were admitted to the club.

The Secretary 4WH handed out forms for membership to W.I.A. and it will not be long before all are active members of the Institute. Fee for this year was fixed at 10/- for all members.

An apology was received from our guest speaker due to his sudden departure for Victoria on transfer. The Secretary has arranged for guest speakers for the next three months and promises more to follow. Ray Bosanko and Allan 4PS have offered the loan of tape recorders for play back of any taped lectures that may be received, so any club having material on tapes, we would be grateful for the use of same and every care will be taken and postage both ways will be met. Please let the Secretary 4WH, or the President 4RW, know as we are often on the band.



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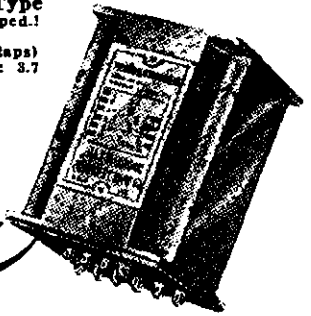
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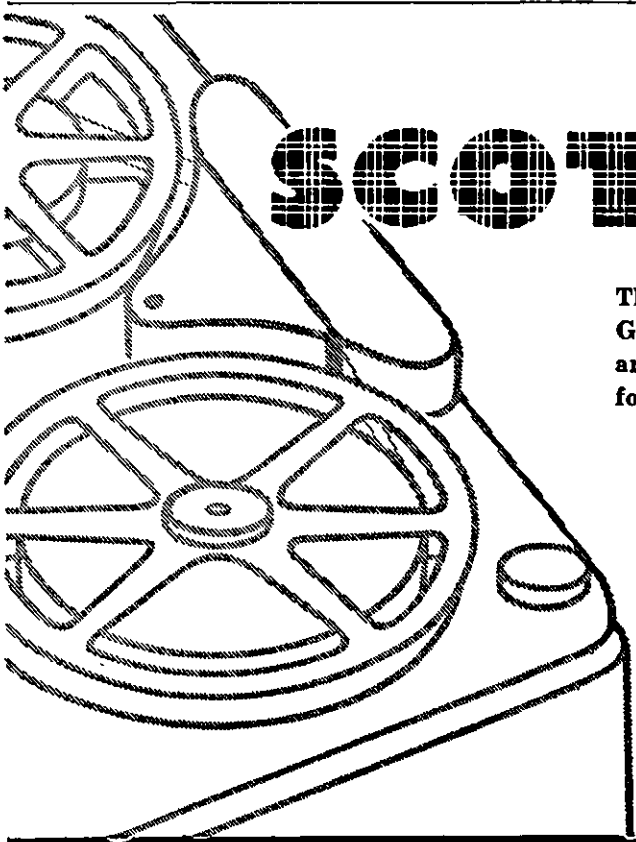
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Activity on the bands this month for DX has been very poor due to the erratic skip conditions prevailing. The far northern gang are trying to establish a 144 Mc. link—Cairns to Mareeba and Atherton. Also some of our members are trying to do the same between Townsville and Charters Towers as 50 Mc. band was a washout on two Sundays recently when attempts were made between the two points.

4EJ giving 21 Mc. away and now on the gentlemen's band. 4JH trying to hear sigs on 50 Mc., but so far nothing doing; also trying to contact 4RW on 144 Mc., but no dice due to converter at the latter's QTH not geeing properly according to Joe. 4WH still gives phone a go when no DX on c.w. 4BX now using his bandswitching job with an f.b. signal. 4LR re-building his low powered rig—8w. 4RU again promising to stage a comeback—another New Year's promise. 4EL not heard lately, must be due to "Them Thar Hills." 4RW has applied for N.Z.A.R.T. W.A.P. Award, phone and c.w. Quite a number of the other boys still inactive or at least not heard on the band.—4RW.

SOUTH AUSTRALIA

The monthly general meeting of the VK5 Division (the Division that sets the pace) was held as usual in the clubrooms to a very representative gathering of members and visitors. The guest speaker for the evening was Mr. Scott Little, 5AF, who chose for his subject, "Macquarie Island." As ex-IAF, he spoke with some authority on his subject. Scott took a wise angle on his talk, he did not make any attempt on a technical discussion, but merely gave his audience an interesting resume on his activities during his sojourn on the island. Possessing a very dry wit and a real down-to-earth outlook on his subject, it naturally followed that he soon had the interest of his audience and held it right up to the finish of his enjoyable talk.

The talk was illustrated with some interesting shots of the island and its inhabitants which were projected on to the screen by the speedi—epiedi—eppediasco—well anyway they were projected on to a screen by a gadget which added considerably to the overall interest of the talk, and the vote of thanks proposed so ably by Brian 5CA, together with the long list of questions at the end of the talk, gave ample indication of just how well Scott put his share of the evening's entertainment over.

Just in passing, I worked with Scott's father, Sammy Little, in the old Central telephone exchange quite a few years ago and it was remarkable just how much likeness there was between the voices of the two Littles. Several times during the lecture I only had to close my eyes and listen to Scott, and I could have sworn that his father was in the room and telling us one of his many Sunday School stories for which he was noted. Of course, I was too pure to listen! Pardon the digression, but I could not help alluding to the likeness, because it struck me so forcibly.

There was very little general business for the evening, although Luke 5LL did have a few words to say on the matter of the certificates being awarded to Council members for their services, and possibly these few words were the means of swaying the members to vote against the opinion of the Council on this matter, which was that certificates were unnecessary, both from a financial and a personal angle. However this is all to the good, and I would like to see more members get up on their feet at the meetings and have their say on all matters connected with their hobby. It serves two purposes; one, that it shows a genuine interest in the business side of the monthly meetings, and two, that it does not permit the Council members to settle back into a state of complacency under the mistaken impression that because nobody gets up at the meeting and voices a different opinion, or perhaps criticism, that therefore Council is always right.

At this point of the monthly notes I usually give the list of visitors present at the meeting, but unfortunately I lost mine and when I rang Gordon 5KU he did not have his list, and when I rang several others, they had also lost their list or in some cases had never had a list. This is downright in-efficiency and I will have to shake them all up.

Arthur 3AWO spent a few days at the caravan park of Kingston Park. I did not hear him on the air, but understand that he contacted quite a few of the locals on 40 mx. Don 5DX was another one heard on 40 mx from Aldinga, working portable recently. He was in contact with Luke 5LL when I heard him and his signal was out of the box considering his power at the time. Luke 5LL lost one of his poles in the recent big blow and as yet has not replaced it. Incidentally, OM,

I was having a little skip with the kiddies at the Picnic and your XYL joined in with me. When my feet became entangled with the rope and we were forced to stop, much to the annoyance of the said kiddies, your XYL said to me, "That will get your fat down mate!" Would you be so kind as to point out to her that it is not fat—it is muscle, I repeat, muscle!

Frank 5LK will receive the 1954 award for the best hider of lights under bushells. My reason for saying this is because a little dicky bird tells me that he has been putting quite a lot of his spare time in coaching candidates for the A.O.C.E.P., with a deal of success, if all is to be believed. Nice work Frank, and I apologise for putting the spotlight of publicity on "your good deeds by stealth campaign," but one hears so seldom of people doing something for nothing, that I feel it merits publicity.

Charlie 5CR is not enjoying the best of health these days and we all hope that he will soon be on his feet again. The last time that I heard him was on 288 Mc. and he was saying then that he was feeling a bit off colour. The last time that I contacted him was pre-war and was on 20 mx. Cheers Charlie and keep the old chin up. Quite a number of the old timers are thinking of you and often.

SOUTH EAST AREAS

The usual monthly meeting of the S.E. Areas was held on Thursday, 27th January, and there was a good roll-up of members with only two absentees—Claude 5CH and John 5JA. The principle attraction for the night was of course the R.D. Trophy which was well on display and all those present were able to make a detailed inspection as well as photographing it from all angles. The meeting unanimously agreed that a vote of thanks be passed to the members of the VK6 Division for forwarding the trophy so promptly for exhibition at Mount Gambler during its City Celebration Week, and whilst on this subject, it was on view all the week in a window of one of the local stores, arousing much interest and comment, together with favourable publicity for the grand hobby of Amateur Radio.

John 5PD brought along to the meeting an A.W.A. small boat tx and rx which it was proposed to use with the Robe fishing fleet. He gave a detailed description of this interesting piece of equipment and at the conclusion of his well enjoyed talk, the third most important item of the meeting was brought forward—to wit, supper. This item was despatched in record time and as usual finished up as an exciting race between Col 5CJ and Stuart SMS to see just which one would have the last piece of strawberry cake with the most strawberries adhering to it. Excuse me for a moment, I have to go outside, ever since the Xmas meeting, the words strawberry cake affect me in a peculiar manner. The meeting continued until all present became hoarse, and finally closed down at an hour when all good people are fast asleep, tucked up in their couches of virtues. Most of those present having no couch, and no virtue, were not dismayed at the lateness of the hour!

5TW has very little to report on his doings on the air this month although he was heard on the unmentionable band occasionally. Tom appeared at the meeting carrying undisputed evidence of his trip to Portland and appeared to have been out in the sun to good effect. EMS has managed to keep his skeds on 40 and 20 mx, but band conditions have reached an all-time high this month and this, coupled with the fact that Stuart has been busy with the Amateur Radio publicity side of Celebration Week, meant that he had very little time for DX or what have you.

5KU reports that he has finally recovered from the visit of the stork and that the new arrival is doing extra well. There is no doubt about it. Erg's fathers have to go through a lot, although for some reason or other all doctors claim that they have never lost a father, yet! It's our fortitude and ability to suffer pain in silence that accounts for it I think. Don't show this to your XYL. Erg! She might give a sneering laugh like mine did when she read it, it reminded me of a hungry crocodile which had just finished sharpening its teeth. Fairly gruesome, I can tell you.

5CH has been somewhat on the sick list this month and has only been able to do a little work on his new shack. Claude has been heard on the unmentionable band once or twice also, but has not been feeling much like radio. Hope all is well Claude. 5CH is planning some building work, the nature of which is still in the secret and drawing board stage as yet. However Col. is something like me, very slow to start, but brother, when we start, we never know when to stop! Of course our XYLS will tell you different, but don't take any notice of that, they see things through their hearts, whereas we see things through our heads. Whoops! I can't see, something just hit me on the scone!!

Quite a lot of traffic passed through Mount Gambler this month including Charlie 3AUP and family, Roy 3ND and family, the XYL of Jack 3IP and her brother-in-law Bill 3BL, Ray 3ATN and YL, and ZL4JA and ZL4MY. The last mentioned boys are on a hitch-hike tour of VK and really felt important when they hit Mount Gambler and found the City Band, the Governor, the Mayor, and a welcoming committee lined up apparently to greet them. However they were soon deflated when they woke up that it was all because of the Celebration Week festivities. It goes without saying that all of these visitors found their way to the QTH of Stuart SMS and were given their share of the famous South East hospitality. Fancy having all those VK3s in the same area at the same time, all it would want would be Pincoot to bob up and Mount Gambler's cup of misery would be full to overflowing. What am I saying? I was President of that Division once. All right Barber, sit down, I can prove it. I will admit it was not for long, but you can't take it away from me. The only member of the W.I.A. that has been President of two Divisions at the same time. That's me, and proud of it!

A visitor to the S.E. meeting this month was Brian 5ZAB who has a steel tower 80 feet up in the air, a 522, and lots of enthusiasm. He is hopeful of contacting distant places on the unmentionable band. He also passed on the information that Wally 5BP now has a new "750" Eddystone rx and hopes to be more active in the future.

COUNCIL

Two members of the present VK5 Council did not seek re-election for next year, but aside from this change the set-up will be the same in VK5 for the coming year. Once again no new nominations were received from the membership and therefore it is to be assumed that the present members of the Council are satisfying the VK5 Division. Whilst this state of affairs may be quite OK on paper, it is somewhat a disappointing outlook for the future of the Division on the executive side. The present Council contains no newcomer to Amateur Radio and has been that way for many years. I said recently to Doc 5MD, "Don't you ever get tired of being on the Council?" His answer to me sums up the position perfectly, "Quite often, but where can the replacement come from, nobody seems interested."

We used to have a simple way of recruiting new members to the Council; if anybody stood up at the meeting more than once and had something to say, we used to grab him and talk him into the Council. Nowadays they are too shrewd, they don't even get up and speak, possibly they are a wake-up.

The two members to resign from the Council were Charlie 5ON, who was handling the Divisional station 5WI, and Joe 5JO, who has been an active worker for VK5 for more years than I care to remember. We are sorry to lose these two solid workers from the Council, but realise that home responsibilities in the case of Charlie, and a desire to get among the boys at the meetings in the case of Joe, must be accepted. Both agreed to help Council if at any time their services should be required for small jobs, which is at least better than was at first thought.

Talking of Councils and Committees reminds me that the following will comprise the members of the Advisory Committee for 1955: Douglas 5CB, Clem 5GL, Howard 5XA, Brian 5CA, Secy 5CD and Scott 5AF. All in all a good selection, and one that will temper judgment with understanding and common sense, which after all is all that the average Amateur asks in his Advisory Committee.

Still talking of Councils, even if you are not listening, I cannot help but notice the good fellowship and even tempered atmosphere that exists in the VK5 Council these days. I am not suggesting that previous Councils were not the same, but at the moment even those warriors of general meetings of two or three years ago, Jack 5JD and Warwick 5PS, never even as much as cast a dirty look at each other across the Council table these days. In fact Doc 5MD was heard to say at a recent meeting that it was a wonder that these two did not kiss each other when they met. Be that as it may, I can only say that still waters run deep, although the lion has been known to lay down with the lamb, even if the lamb kept his engine idling in top, just in case!

WOOMEA RADIO CLUB

Due to the Xmas season very little activity has been reported from the Woomea district and with most of the members of the Woomea Radio Club being absent on their annual holidays, the club station has been in a decided inactive state.

Ray 5FF has been down in civilisation for a while and has enjoyed quite a number of interesting contacts with the local boys about town. This is the first time that he has had an opportunity to operate his own rig from

his own quiet corner of the world and finds it a lot different from having to go to the clubrooms whenever he wanted to get airborne. Ray's eight-cylinder bomb, "Leaping Lena," is running sweeter than ever these days and he is considering putting a clamp tube on her. John Gluyas has taken a brush and a couple gallons of paint to his RI155 and it is almost ready to hear those CTI signals that Ray works. It is suggested that it looks more like a fire extinguisher than anything else!

Len 50C, who was the first President of the Club, and is now domiciled in the city of virtue, received at the general meeting from Ron 5FY a super-special axial tray with a high back-to-front ratio, suitably inscribed from the Woomera Club members. Glad to hear it Len, I like to hear of good work being appreciated. Ron 6FY, the genial Secretary of the Club, has been down to the city and has been spending some of his time at his old stamping ground, to wit, Gawler. He tells me that he was glad to meet all the boys at the meeting and his portable rig admirably served the purpose for which it was built, enabling him to have some good contacts with his old mates Les 5AX and Compton 5EF.

Just prior to Xmas there was a gathering of the Gawler Net (5AX, 5EF and 5FY) at the shack of Compton 5EF, and great was the ear-bashing thereof. Arising out of this gathering I am pleased to report that 5EF is more than satisfied with his W filter, it is working better than expected, he hasn't worked one yet, and this coupled with the fact that Compton is having a little trouble in resonating his beam (when the reflector is organised the director is not, and vice-voce—commonly known as push-pull), then it can be seen that his sense of satisfaction wants looking into, or do they get that way in Gawler? 5AX, better known as five clank able clank xray clank, the clanks being the old-fashioned water pump outside his shack door which modulates his signal almost as well as Les does himself, now has his 100w. g.d. oscillator working extremely well and is putting in a good signal in quite a lot of places. It is rumoured that a new antenna is to be erected at King Street, which will be the antenna to end all antennae. This is where I came in, so I think that I will go out again.

ANNUAL PICNIC

The Annual Picnic of the VK5 Division was held last month at the Birwood Oval and over a hundred of the local boys, their XYLS, their harmonics and visitors turned up despite the threatening look of the weather in the morning. The afternoon turned out a winner and a very enjoyable time was had by all.

I did intend to write a little about the Picnic, but time caught up with me this month and I am afraid that we will have to rely on the dear editor to give us a little space in next month's magazine for a short(!) description of the grudge cricket match between the c.w. men and their natural enemies, the phone men.

Joe 5JO, together with his XYL, his mother, his sons and daughters, and their boy friends, all worked flat out to make the Picnic the success that it undoubtedly was, and Frank 5MZ, Gordon 5XU, Luke 5LL and many others did their best to entertain the XYLS and harmonics, for whom the Picnic was really intended. This was the first Picnic that I have been able to attend and I can truthfully say that I am sorry that I missed the others, and I, in company with all those who attended, will be looking eagerly forward to the next, and what better praise can you get than that.

Just in closing for the month, in case that Pincott has been pumping the locals. The ball that Les 5AX bowled that shattered my wicket in the cricket match was deliberately bowled straight at the wicket. Can you get anything lower than that?

WESTERN AUSTRALIA

At the January meeting of the Division, those present were treated to interesting discussions on two widely divergent subjects—namely, "The Construction and Operation of the Collins 32V3 Transmitter," by Tom 6MK, and "The Evolution of the Modern Hearing Aid," by Mr. Murray, of a city firm.

Tom's subject was one of great topical interest and the tx on display aroused a deal of comment, especially on the way in which the whole thing was compressed into one small cabinet. Mr. Murray's talk included the demonstration of several hearing aids up to the type incorporating transistors, which were really remarkable for their compact construction and low battery consumption. A far cry from the first electrical type of aid invented in the late 19th century which, as he calmly announced, weighed a mere 2200 lbs! A portable type later produced was "capable of being easily carried by any able bodied person," so said the manufacturer. It weighed 500 lbs! A hearty vote of

thanks to the speakers was moved by 6GH and carried with acclamation.

A new call heard on the 7 Mc. band has been 6KL from Byford, with a good signal. Noticed the call sign of Bill Woodley, 6DJ, cancelled in a recent list. Conditions got the better of you OM? 6VK, of Northam, was a new member welcomed at the January meeting. Vic had made the trip down especially for the evening. Another application form seen recently was from 6JR, of Kellerberrin. Though not heard on the bands as yet, he has been licensed for some time.

A strange voice on 7 Mc. one Sunday morning turned out to be Harry 6ZZ stoking up the rig again and getting out well to 6KJ, of Albany. 6RU now sports a fine new beam array for 14, 21 and 28 Mc. Saw a photograph of it taken by floodlight at night, and it certainly shows that that is the only way to take photos of any array. Every detail stands out in the absence of sun glare as in a daytime snap. Occasionally hear from 6KU, but only per land-line and not on the air. It's about time you came good with the beam and gear Ray, as they tell me conditions are on the improve.

6BO has been dashing about the south-west lately. Last showed up in Bunbury where the gang were due for a visit. Believe 6ON's tower has now resumed a vertical position with the aid of a jack and much pushing and pulling. 6KO was contacted recently on 7 Mc. for the first time. What's this I hear about 3.5 Mc. and 6MD Kevin? 6SF/MM on M.V. "Silver Fin" has been active on 7 and 14 Mc. with good results. Using an 8 ft. whip and 10w., John QSOed a G on 14 Mc. phone while off Rottnest. When told the details, the Britisher thought he was talking to a pirate as the signal was so good! Must be the clear get-away from the boat.

6CU has been unusually quiet of late, but has found time to dash off an article for the magazine. 6EH has been tied up with chess—of all things—but is still promising that article for "A.R." Best you do something about it before the Editor gets to hear of it Ted! 'Tis rumoured via Associate Kevin Blekwell that Tom 6EP is gradually moving towards activity again. Conditions must be on the up grade—heard 6WZ and 6EL on 40 mx on Sunday morning! Two Geraldton stations on at once! 6WT has had a few air tests with his new modulator and 100w., but has had a bit of bad luck with a modulation transformer that greedily absorbs power.

TASMANIA

The February general meeting was held as usual at the clubrooms and was very well attended. Bob 7OM was in the chair in the absence of the President and the lecture for the evening was very ably delivered by Bill TTY on the subject, "Wartime Coast Watchers."

Business for the evening was mainly on the subject of the coming Annual General Meeting and Dinner, the arrangements for which are being handled by Bill Tait and Ted Evans. It was originally intended to hold the meeting on 12th March, but it was found that this date clashed with the Northern Zone meeting and dinner, and so it was decided that the date would be 26th March instead. Every year the dinner committee has had much trouble in estimating the number of members who will attend and so this year a deadline has been set, after which it will be very difficult for latecomers to get a booking. So if you intend being at the dinner, notify the Secretary or 7FJ, or myself, immediately, if not sooner—remember, no booking, no dinner! This does not apply so much to country members as it is appreciated that members who have to travel long distances to attend will probably not know if they will be able to make it until the last moment.

The usual ship to shore communications for the rowing events at the Royal Hobart Regatta were again provided this year. Operators this time were Mark 7MH, "Ack" 7DA, Ken 7KA and Tom 7FM. Two mx equipment was provided by yours truly.

Queenstown has been suffering from an influx of Amateur talent recently. On one evening at the shack of Len 7LS, there was ZLAJA and ZLAMY (hitch-hiking around Tasmania), VK5WY who is studying mining in Queenstown, 7ML and 7LE who were just visiting, and 7BR and 7LS. The trend of the conversation can, of course, be imagined and a supper of hot scones was served up by Joan, XYL of 7LS, including a special scone for Max 7ML who is on a diet because of an excess of condition caused by too much fishing and high living. Personally, I've never seen him looking better although I was present when he weighed himself on one of these talking machines—the voice said, "One at a time please!"

Harry 7BR turned up at his sweat shop recently with the tale that his bed collapsed

beneath him at three a.m. that morning. Brack has taken much leg pulling ever since, but he still maintains that he was asleep and that the bed was rotten with borers! Congratulations to Mr. and Mrs. 7OM, who are this month (February) celebrating their Silver Wedding. All the best to you Bob and Midge.

NORTHERN ZONE

For our January meeting 7FM brought along his BC348 rx and very ably explained its workings. This culminated a series of rx evenings in which 7GM displayed his 12-valve double conversion home-built set, 7LX his modified double conversion "640" and 7XW his AR7. During January another 2 mx hidden tx hunt took place: first home was the Geoff Crompton, 7LX and Jim Wells group, who spent an anxious 10 minutes locating the tx after arriving at 7XW's car. They were greatly concerned in case 7GM and 7BQ were suddenly to come around the corner and beat them to it. The latter team also located the tx but Associates Percy Woodruff and Kevin Eansfield became entangled with 7LZ's 2 mx sigs and went off in the wrong direction. Co was transistoring for the VK3 2 mx field day (looks as though the chaps will have to learn code to identify the station). A night hunt was scheduled for February, but results are not yet to hand.

7CA has been very busy with v.h.f. radio-telephone links and little time for the Amateur side. 7RK still pounding the "Ivories," also hasn't been able to brush the cob-webs out of the rig. Col 7LZ very busy chasing 6 mx DX and arranging 144 Mc. listening watches in case of break-throughs from VK3. Haven't seen much of Henry Solomon since his return from Melbourne; haven't seen any stray VK3 trams here either, so no shrewd gent managed to sell some of them to Henry.

7PF has settled down in a new QTH with nice v.h.f. beam already up and working. The neighbours think Peter is getting in early for i.v. Les 7AM still very much interested in "Manx" Norhous, but not heard on the Amateur bands. How about a come-back Les, we would like to hear your cheerful voice on 7 Mc. again. 7RB we do occasionally hear, but it's a case of "all's quiet on the Invermay front" with 7TE.

There are now several newcomers in areas around Launceston, and to them we extend the "welcome" sign and would like to see them at our meetings. DX conditions in the Launceston area improved considerably in the latter end of January, particularly on 7 and 14 Mc., although 21 Mc. appeared to be dead. Much of the improvement was due to the efforts of 7LZ and 7FF in locating bad sources of noise which the Hydro Dept. cleared up. About this time plenty of ZLs could be heard on 3.5 Mc.

The Annual Meeting will be held at the Trades Hall on the second Friday in March, that is the 11th. As our attendance at recent meetings has not been as good as could be wished for, how about making an effort for this important one and coming along? After all, the zone is only what members put into it.

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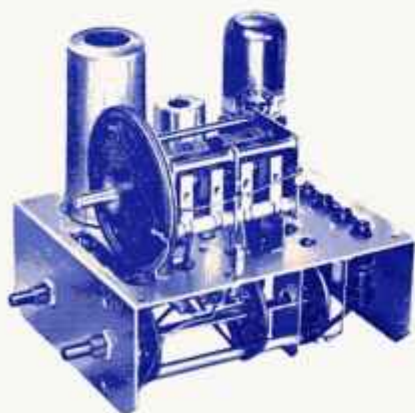
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EDITORIAL



THE VINDICATION OF "JOHN GILPIN"

*"John Gilpin was a citizen
Of credit and renown,
A well known, radio "Flam" was he
Of many a flood bound town."*

(With apologies to Cowper.)

When Nature in her anger gathers the elements in her hands and hurls them at some unsuspecting locality, the unfortunate victims quickly find that normal and regular routine is suddenly swept away. The superficial conditions of men are reduced to a Common Denominator. The inhabitants of a disaster area learn that they now have to depend on the fellowship, the understanding, and intelligence of their immediate companions; the people who live round the corner or across the paddock. No longer do politics, personalities, and outlooks become important. No longer do files of paper, licences, permits, and controls add up to anything meaningful. All that is important is fellow man and his ability to play his part.

Some few weeks ago, when the flood menace struck at Northern New South Wales, the citizens found that they were in the midst of just such an experience. Where once, by lifting a telephone or pressing a switch, they could demand service, they found none, and authority was powerless to supply any. They were forced to consider the situation; to find among themselves, someone who had the ability and the initiative to supply their wants, to relieve them of their distress. That person was not hard to find.

In his humble shack, surmounted by towering poles, "John Gilpin" (previously rather suspect because of his "queer" habits of talking to others of his kind over the air) had

notified the relief co-ordinator and was hard at work providing just that service the people lacked. Communications with the outside world were again established, the momentary needs were stated and help was assured.

Quickly the dejected realised that here indeed was one, who, in his own modest way, had trained himself to be of service to the community when the need arose. He hadn't announced his plans with high-pressure news releases, or long lists of detailed estimates. He hadn't declared this policy with acclamation, or derided that with contempt. He had quietly prepared knowing that, when the day of his testing arrived, he would not be found wanting. Those to whom he gave assistance will vouch for this and for his devotion to the cause of humanity.

Radio Amateurs throughout Australia, nay throughout the world, can be justly proud of the feats of that gallant band of enthusiasts who, using their own call signs, made their voices heard when all else was silent. "John Gilpin," the individual, had triumphed when all else had failed. He had proved that he could surmount all difficulties—that man was greater than the machine.

GENTLEMEN, you who did so much to raise the name of "Radio Amateur" to a zenith previously unattained, we salute you. May your sterling efforts be rewarded in a manner befitting your endeavour.

FEDERAL EXECUTIVE.

THE CONTENTS

| | | | |
|--|---|---------------------------------------|----|
| The "Skeleton Slot" Antenna | 2 | Max Howden, VK3BQ | 11 |
| Having Fun With "Skeleton Slots" | 3 | National Field Day, Amendment of Date | 11 |
| Low Noise R.F. Stage for 144 Mc. | 5 | Denmark Pays a Tribute to VK1EG | 13 |
| Hints and Kinks— Tuning SCR522 Receiver without a Crystal | 6 | Australian V.h.f. Records | 13 |
| Weatherproofed Ribbon Feed Line | 9 | Short Wave Listeners' Section | 15 |
| 24 Volt Relays on 12 Volts | 9 | DX Activity by VK3AHH | 17 |
| The Silicon Crystal Noise Generator | 7 | Prediction Chart for April, 1955 | 17 |
| Twin-Lead "Sprigs"—Two Antennae to One Feed Line | 9 | Fifty Megacycles and Above | 19 |
| | | Federal, QSL, and Divisional Notes | 20 |
| | | Correspondence | 24 |

THE "SKELETON SLOT" ANTENNA

BY G. M. BOWEN,* VK5XU

There has been quite a deal of interest in the slot as an antenna since the technical details of the Sutton-Coldfield t.v. station were released in "Wireless World." As the original slot antenna had a very high wind resistance with its solid surround, it was only natural that the Amateurs who could see the makings of a good v.h.f. radiator in it, would set to work to see how much of the surrounding metal could be cut away without seriously affecting its performance.

G2MC, in the August issue of "W.W.," gave the details of a "skeleton" for the 144 Mc. band and in order to have something different to talk about at a lecture, I made up a model in about half-an-hour which provided us all with a night's entertainment. The construction is very simple and the accompanying diagrams should be sufficient guide; the diameters are not critical.

The antenna radiates as a broadside array with a polar diagram like two half wave dipoles spaced half wave apart and fed in phase. The resultant figure of eight pattern is elongated and results in an approximate gain of 4 db over a single dipole.

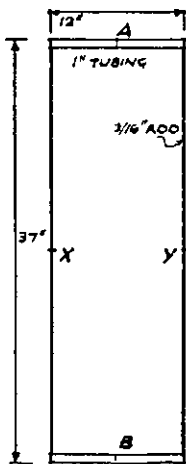


Fig. 1.

Maximum radiation takes place from the two short ends made from large diameter tubing as it is here that maximum current appears and that it does, can be proved by testing for horizontal or vertical polarisation with a simple dipole field strength meter. The dipole gives maximum reading when it is parallel to the two pieces of tubing, so that when they are horizontal the radiated wave is horizontally polarised.

Referring to Fig. 1, X and Y are high voltage, high impedance points, but as yet there is no data as to the exact value for the "skeleton." A and B are points of maximum current and therefore low impedance points which can be earthed if so required.

Since our article on "Skeleton Slots" in February, 1954, issue of "Amateur Radio," we have received further articles by VK5XU and VK2NO describing further experiments and results obtained with them. To complete the picture we are publishing both articles to give readers additional food for thought and to satisfy the urge to try something new.

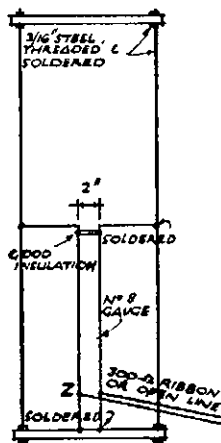


Fig. 2.

A quarter wave open line shown in Fig. 2 can be used as an impedance transformer and any line can be matched into the antenna. I found that 300 ohm ribbon matched in about one-third of the way up from B.

Fig. 3 shows an arrangement of feeding an unbalanced co-axial line into the two high impedance points X and Y. Some fanning out of the open line connections to the co-axial quarter wave

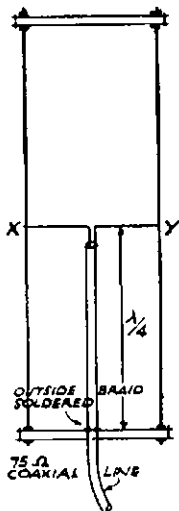


Fig. 3.

may be found necessary as the quarter wavelength of co-axial matching section will only need to be about 60% of 19" according to the velocity factor of the co-axial cable chosen.

Fig. 4 shows the quarter wave open wire stub affixed at right angles to the plane of the antenna. With this construction it is possible to add a reflector at the point where the stub is shorted. Its length will be an electrical half wave which will be approximately 38 inches.

When experimenting with reflectors and directors, I found that the use of reflectors gave the better results; better still, a reflector spaced 0.15 wavelength behind each 12 inch section of the antenna. In this case the reflectors were 5% longer than the length of an ordinary dipole (i.e. about 39 to 40 inches). The closer spacing reduced the radiation resistance and a re-adjustment of the feeder input was necessary to obtain correct matching.

By adjusting the distance between the two reflectors, the depth of the radiated beam can be altered, but as yet I have not made any quantitative tests to ascertain what gain could be expected. This particular aspect should be worth experimenting with, especially if readings can be obtained over some considerable distance.

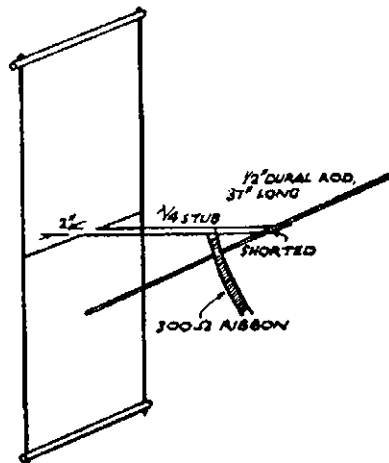


Fig. 4.

The single reflector raises the forward gain another 3 db and increases the front-to-back ratio as is usual; while there is quite a considerable improvement with the two, but how much I cannot yet say.

Fig. 5 should be self explanatory. Points A, B, C and D are at earth potential and therefore can be bonded together with the supporting mast passing through B and D, thus enabling the constructor to make a thoroughly rigid job which can be easily rotated. A third reflector could then be mounted a quarter wave length behind the feed points X and Y. The method for feeding the array, then, would be preferably as in Fig. 4.

* 73 Portrush Road, Toorak Gardens, S.A.

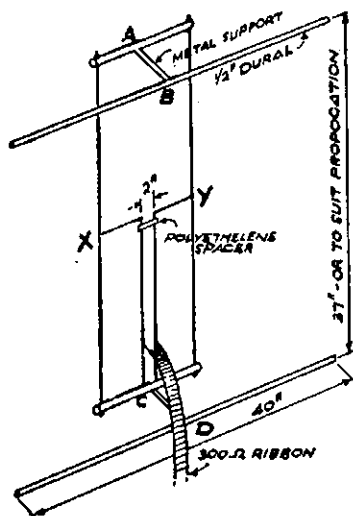


Fig. 5.

Spacing of Reflectors approx. 13 inches.

If a combination of any unlike metals is used in constructing the array, it is wise to give the finished array a fairly heavy coating of aluminium based enamel to stop corrosion of the joints in the damp weather. Make sure, too, that all joints are soldered if steel and brass are used, particularly where the long side pieces enter the larger diameter tubing. This will keep the ohmic losses down.

Having Fun With "Skeleton Slots"

BY DON B. KNOCK,† VK2NO

Although until now practically unheeded by VKs, something new and intriguing has hit the headlines (over-seas) in the way of antennae. The "skeltonised" version of the aircraft type "slot" antenna, first appears to have originated in U.K., although passing reference has been made to it in "QST" (U.S.A.).

It remained for G2MC to evolve a practical version for 2 metres, with a full description in August, 1954, "Wireless World." I wish to draw attention also to a very informative article on the subject in "R.S.G.B. Bulletin" for January, 1953, dealing with the stacking, for v.h.f. work, of "Skeleton Slots." (An article on this subject was published in "A.R." of February, 1954, p.2.—Ed.)

Co-incidental with a return to Amateur v.h.f. activity after an enforced absence of six years at VK2NO, some QRP 144 Mc. gear was put together, and a start made with a plain dipole. With a transmitter boasting all of 2 watts on the 6J6 p.p. triode p.a., excellent contact was established with most Sydney stations. One or two, however, remained "hard to get" from my coastwise "edge of beyond" location.

In the search for better signal strength, the dipole grew a reflector,

became rotatable, and things began to look up. Then I thought of the skeleton slot and got busy.

Two such slots for 144 Mc. were made up, fed in phase, with one above the other, and backed by reflectors. The immediate results border on the fantastic, most of the v.h.f. gang around Sydney being sceptical about the 2 watts producing such a "mighty" signal.

There is no fuss about tuning up this array—for it is broadly resonant. The field strength indicator, a 0-1 Ma. meter with a 1N34 diode and small dipole, shows a high degree of forward gain, several feet in front of the array. Tests made with reliable observers up to 60 miles distant indicate a back-to-front ratio of 7 S points, which is around 30 db, and a very good discrimination off the ends of the array.

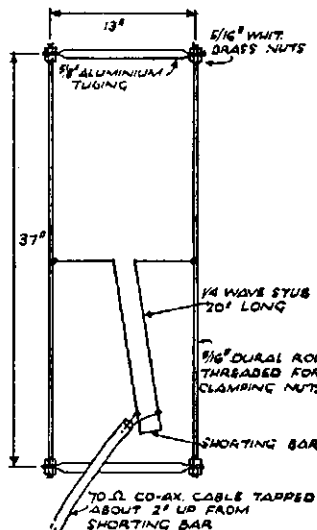


Fig. 6.—Skeleton Slot for 144 Mc.

The sketch (Fig. 6) shows the structure of the skeleton slot for 144 Mc., cut to hit around 144.6 Mc. Two 37 inch lengths of 5/16 inch rod, dural in my case, are threaded at the ends for hex. nuts. Two 14 inch lengths of tubing are flattened at the ends and drilled for 5/16 inch clearance at 13 inch centres. Clamped in position by the nuts, the assembly becomes rigid and virtually self-supporting. The centres of the 14 inch tubes at top and bottom are "cold" for r.f. and therefore no insulation is necessary for mounting on a pole or any structure.

Now comes the really important point about the skeleton as distinct from the metal surround slot—although a physically vertical arrangement, it radiates horizontally polarised waves, a decided advantage with interesting possibilities for lower frequencies. The feed points at the centres of the 37 inch upright rods approximate 600 ohms, so that if desired an open line may be applied, or a quarter wave stub with shorting bar for 70 or 300 ohm line. G2MC found that the stub can be brought down vertically and terminated on the bottom cross tube member. Alternatively, the stub can be arranged hori-

zontally on a strut from the supporting pole, and a 40 inch reflector placed as combined shorting bar and reflector.

Fig. 7 shows how the two skeleton slots are arranged at VK2NO. A length of 1 1/2 x 1 inch timber 10 feet long is used as the foundation, with three struts 20 inches long. Two of the struts are at positions from the centres of the slots, to hold the respective reflectors, and the centre one is for the junction of the feedlines.

From the centres of the 37 inch rods, 34 inch lengths of 16 gauge wire are arranged, being brought together on 2 inch polystyrene spacers to form a uniform feedline. These lines, from each slot, are paralleled and thus the effective impedance is 300 ohms, the feedline from the array being Telcon 300 ohm ribbon.

It will be appreciated that with these two slots phased and paralleled (make sure you don't transpose the lines), no matching stub is necessary. If you wish to use low impedance line, that is simple too. Just make the paralleled lines from the slots 50 inches long each; instead of 34 inches (as for 300 ohms), join on the 70 ohm co-ax or ribbon, and away you go.

The results obtained with this little array are so promising that the writer is harbouring slot ideas for other bands. For instance, a skeleton slot 9 ft. 6in. by 3 ft. 3 in. should be interesting on 6 metres; remember—horizontal radiation with a vertical array! What about one 22 ft. by 7 ft. for 21 Mc., hanging vertically from that unused pole? You can pull it around with two ropes for directivity!

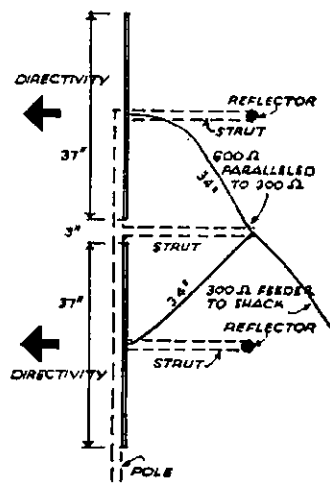


Fig. 7.—Side View.

There are other considerations, too, subject also to trial and result. It may be possible to use a 6 metre skeleton slot inside a 15 metre one, and rotate the two together! When on 6 metres the larger metal rectangle might contribute somewhat to the normal slot "surround." My reason for telling this yarn about the skeleton slot is mainly because of its convenience in erection. It is not claimed that there are any magical qualities, but it most certainly is a fine performer on 2 metres.

† 43 Yanko Avenue, Waverley, N.S.W.

ZEPHYR MICROPHONES

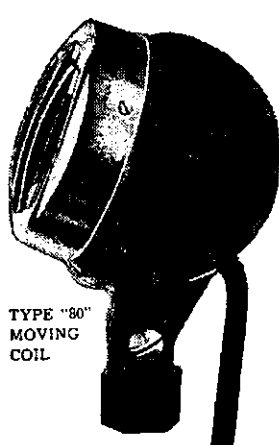


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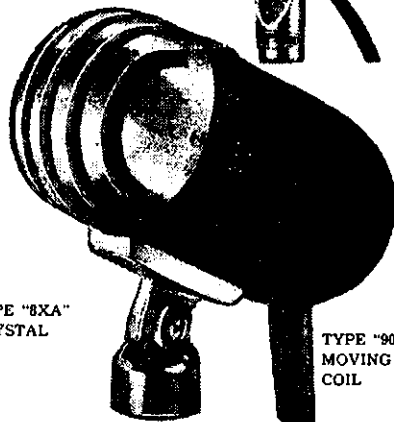
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LOW NOISE R.F. STAGE FOR 144 Mc.

BY F. G. BAIL,* VK3YS

THE tube used for the r.f. amplifier is a twin-triode 6J6 push pull connected, this circuit (Fig. 1a) providing about the highest gain, commensurate with a good signal to noise ratio, that is attainable in one r.f. stage. Noise due to random electron flow within a tube is at a minimum with triodes, a factor which is of practical use in receivers on v.h.f.s. The p.p. arrangement reduces the loading on the input circuit, enabling a relatively large grid inductance to be used, so that a good step-up ratio from antenna coil to grid coil is obtained. This, of course, gives a substantial voltage gain ahead of the grids.

The 6J6, with its common cathode, is particularly suited to this application; there being no flow of r.f. current to earth at this point in a p.p. Class A circuit, the effects of cathode lead inductance are eliminated. There are no difficulties, of course, in obtaining 6J6s or their English equivalent, the ECC91.

The tube requires neutralisation, and this is achieved with small disc condensers made as described later.

CONSTRUCTIONAL DETAILS

An earthed plate (Fig. 2) across the tube socket provides shielding between the grid and plate circuits. Brass shim 0.004" thick was used, although clean tinplate should suit the purpose equally well. The holes H.H. serve to bring through the insulated plate leads to the neutralising condensers. It fits snugly across the tube socket between pins 3 and 4 and pins 7 and 1. Pin 3 (the earthed heater pin) is soldered onto the shield, as is also the centre screening pin of the socket.

A solder lug, pointing away from the socket, on each of the bolts fastening the socket to the chassis, provides further support when bent up parallel with and soldered to the shield. If the ends of this shield are turned back at right angles, for say $\frac{1}{4}$ " to form flanges, rigidity is assured.

* 60 Shannon Street, Box Hill, E.12, Victoria.

Here is a description of a high gain low noise r.f. amplifier stage for the 144-148 Mc. band. It can be added to an existing receiver or fed straight into a mixer-oscillator circuit to make up a two tube, high performance converter, along the lines of a the suggested arrangement shown.

A Teletron ST57L/2 (shielded) socket was used, and the mounting saddle in this series is so orientated with respect to the pin connections as to suit the above arrangement.

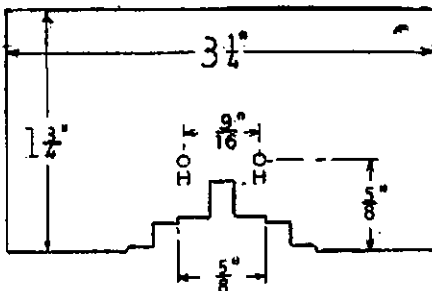


Fig. 2.—Shield for p.p. 6J6 stage, showing extent to allow fitting over the socket and its associated fixing bolts.

NEUTRALISING CONDENSERS

A single way resistor strip (Fig. 3), having four free lugs between the mounting lugs, was used as a support for the screw adjustment of the neutralising condensers (as well as for the grid coil). It will be seen that lugs 1 and 4, which should be tapped with a $\frac{1}{8}$ " screw thread through their rivet holes, each have a brass nut soldered onto them at this position to carry the neutralising condenser screws. The tapping of the rivet holes alone did not give sufficient rigidity to these adjusting screws, but with the addition of the nuts this problem was overcome.

After the tapping has been done, insert the adjusting screws ($\frac{3}{8}$ " x $\frac{1}{4}$ " brass machine screws) with the nuts run on about half way, then slightly tighten the nuts—lock nut fashion—onto the lugs. Check to see that the screws turn easily but without wobble, holding the nut against turning with fingers or pliers, and then solder the nuts to the lugs.

To the tail end of each screw solder a disc, $\frac{5}{8}$ " diameter, of thin brass or copper. Similar discs are soldered to the ends of the plate wires which are brought through the shield for this purpose. For maximum rigidity these wires can be supported on tiny standoff insulators, or a resistor strip, located between the tube socket and the grid coil mounting strip. Two $\frac{3}{8}$ " holes were drilled through the end of the chassis to permit adjustment of the neutralising condensers.

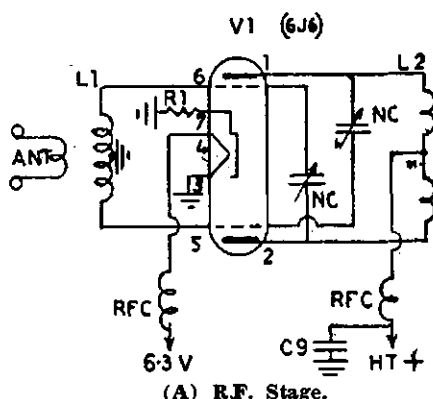
COILS

Wire size number 20 s.w.g. enamelled. The grid coil (L1) consists of eight turns, centre tapped, $\frac{1}{4}$ " inside diameter and spaced to occupy a length of $\frac{1}{4}$ ". The centre tap is earthed via a short direct lead.

Antenna coupling coil four turns, wound over centre of grid coil and connected to a two-pin socket fixed behind it.

The plate coil (L2) is soldered directly to pins 1 and 2 of the tube socket, and is so wound as to provide a $\frac{1}{4}$ " space in the centre for an output link or the grid coil of the following stage. It has six turns $\frac{3}{8}$ " diameter, and the overall length is approximately $\frac{3}{4}$ ". If this coil is arranged so that the centre tap is on the side nearest the chassis, adjustment of the output coil is facilitated and the plate feed r.f.c. is kept out of the way. Half an inch of lead on this choke is sufficient to enable it to clear the coil and be led away to one side.

The r.f.c. used came from the American I.F.F. set. These chokes consist of



(A) R.F. Stage.

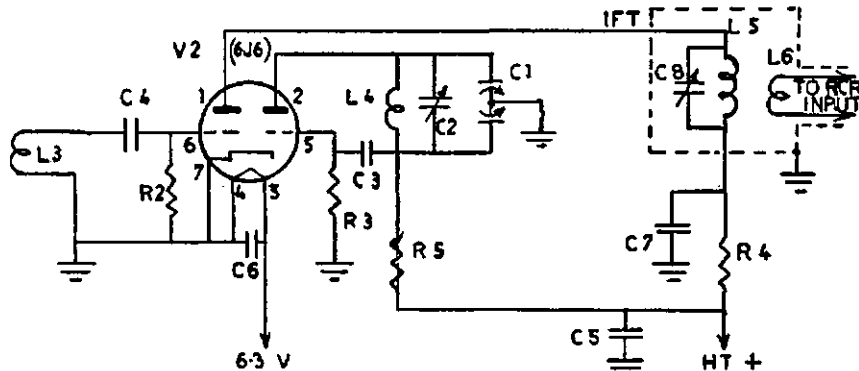


Fig. 1.

(B) Mixer-Osc. Section.

C1—Oscillator tuning (see text).
C2—3-12 pF. trimmer.
C3—25 pF. N.P.O. (zero drift) ceramic or silver mica.
C4—220 pF. Hi-K ceramic or midget mica.

C5, C7, C9—500 pF. Hi-K ceramic or midget mica
C6—330 pF. Hi-K ceramic or midget mica.
C8—50 pF. trimmer.
N.C.—Neutralising condensers (see text).

R1—60 ohms, $\frac{1}{2}$ watt carbon.
R2—1 megohm, $\frac{1}{2}$ watt carbon.
R3—15,000 ohms, $\frac{1}{2}$ watt carbon.
R4—1,000 ohms, $\frac{1}{2}$ watt carbon.
R5—10,000 ohms, 1 watt carbon.

22 turns of number 28 or 30 enamelled wire, the diameter being $\frac{1}{8}$ " with a winding length of approximately 7/16".

NEUTRALISING PROCEDURE

Set the neutralising condensers to about $\frac{1}{4}$ " spacing as a convenient starting point. With the antenna connected and the r.f. amplifier in operation, feeding into a mixer or existing 144 Mc. receiver, sundry "joys" and a high hiss level will probably be heard due to regeneration in the amplifier. Tune in to a relatively strong signal, then disconnect the h.t. supply to the r.f. amplifier (leaving the heater on). The signal will still "ride through" due to tube capacities, etc.

With an insulated screwdriver, e.g. a length of $\frac{1}{4}$ " polystyrene filed at the end to form a screwdriver point, adjust the neutralising condensers for minimum signal. Reconnection of the h.t. supply should now bring the amplifier into normal operation with freedom from oscillations.

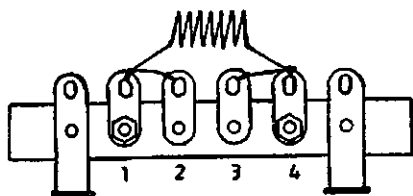


Fig. 3.—Resistor Strip mount for r.f. stage grid coil and neutralising condensers.

The main receiver tuning control, particularly if it is one with a reasonable reduction ratio, often provides a convenient means of keeping the signal "in tune" for such tests, being in effect an additional vernier control.

If a signal generator, etc., is used to supply a signal for v.h.f. receiver alignment and adjustment, it should be so placed that the signal is picked up via the antenna to preclude the possibility of direct radiation getting into the receiver. Small temporary antennae may help in this regard.

A h.t. supply of 100 volts is sufficient for the amplifier, the current drain being in the region of 20 Ma.

Inasmuch as it is a broad-band circuit, no difficulty was experienced in obtaining a sufficiently even response over the whole of the two metre band.

The balanced input is particularly suited for use with balanced feed lines, in this case 300 ohm ribbon feeder. Some modification to the antenna coil may be required for other types of line. In so far as co-axial feed line is concerned, probably the best method, in order to preserve the balanced input feature, is to use a "balun" (balance to unbalance, impedance transformer) between the line and the amplifier input. Such a device, made from a piece of 75 ohm co-ax, will transform a 75 ohm unbalanced line to 300 ohm balanced output.

TWO TUBE CONVERTER

In the writer's case the r.f. amplifier was combined with the 2 metre 6J6 converter described in "Amateur Radio," January, 1954.

The complete circuit of the arrangement finally used is shown in Fig. 1a and Fig. 1b, whilst the chassis diagram (Fig. 4) shows the layout of the major parts, and essential dimensions. The

condenser across the mixer grid coil was dispensed with as optimum results were obtained with a three turn coil (L3) $\frac{3}{8}$ " diameter fairly close wound, and coupled about half way into L2. Too much coupling here can result in pulling of the oscillator, and also tends to make neutralisation ticklish.

The oscillator coil (L4) consists of four turns $\frac{5}{16}$ " long, with an inside diameter of 5/16". This gave more band-spread than the coil originally used.

The oscillator tuning condenser C1 is an Eddystone 15 x 15 pF. split-stator (180 degree rotation) cut down, with the aid of a jeweller's saw, to one stator and one rotor plate per section. C2, a Ducon type TS2A 3-12 pF. N.P.O. ceramic trimmer, mounts directly onto the stator supports of C1. When adjusted to about half capacity, it sets the oscillator to the low frequency side of the band. The i.f.t., which should be enclosed in a shielding can, tunes to the converter output frequency of 7.4 Mc. Keep the plate lead from the mixer to the i.f.t. as short as possible, to reduce any tendency towards oscillation in this stage. The i.f.t. coil details are:—

L5—28 turns close wound on $\frac{5}{8}$ " former, wound with No. 26 s.w.g. d.c.c.
L6—8 turns wound over bottom of L5, No. 26 s.w.g., d.c.c.

The tuning dial is a National "Velvet Vernier" control ex the "TU" series of disposals tuning units.

Current drain of this converter is about 27 Ma. with 100 volts h.t. If the converter is to be enclosed in a cabinet, then it is as well to select one which provides for a reasonable amount of ventilation rather than an "air-tight" type.

The tubes and the i.f.t. mount above the chassis, other components below. In this way, the possibility of oscillator drift, due to heat radiation from the tubes, is reduced.

When feeding into a receiver using a standard 455 Kc. i.f. channel, the frequency drift of the converter, after a few minutes warm-up, is negligible. A T9 note is obtainable when receiving c.w. provided a properly filtered power supply is used. "Stand-by drift" is eliminated by leaving the converter on during transmission periods.

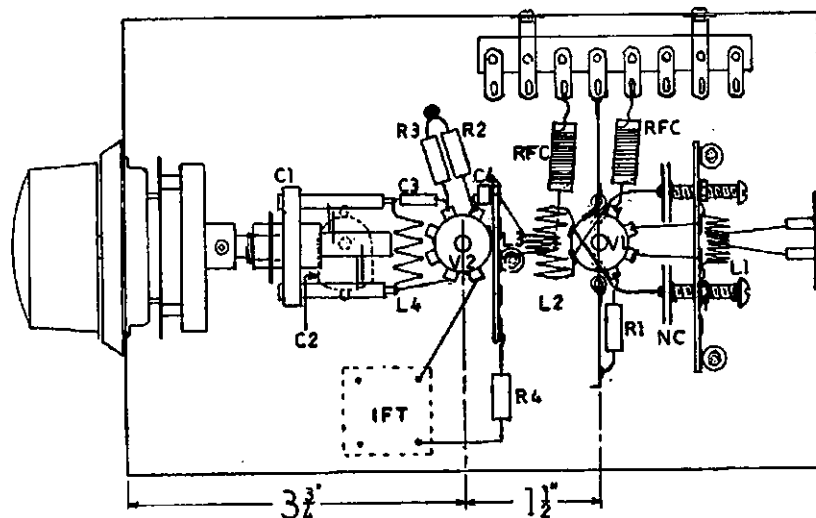


Fig. 4.—Underneath view of chassis. Chassis size: 8 x 5 x 2 1/2 inches.

HINTS AND KINKS

TUNING SCR522 RECEIVER WITHOUT A CRYSTAL

This is an idea for the 144 Mc. enthusiast for tuning the SCR522 receiver without the need of a crystal.

Remove one of the oscillator coils marked A, B, C, or D, whichever you like. Mount in a small can, preferably aluminium. Procure one defunct crystal holder and mount the can on the base of the holder, connecting the coil to the pins. Plug into the crystal socket of the band which still has a plate coil.

Turn the controls to the 144 Mc. band. Tune the slug on the plate coil and the slug on the coil in the new can for oscillations, re-adjust the condenser tuning controls for maximum gain, and we have a nice receiver, the stability of which is as good as with the crystal.

To the fastidious, the screws on both slugs could be extended to take knobs, and once the band is found, you could tune across the band with ease. The oscillator becomes the old t.p.t.g. That's all there is to it.—VK4XL.

WIRELESS INSTITUTE (N.S.W. DIVISION)

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THE SILICON CRYSTAL NOISE GENERATOR*

BY WILLIAM L. ORR, W6SAI

On the DX bands and on the very high frequencies the amount of noise generated by the receiver becomes a limiting factor in weak signal reception. The problem, therefore, is to design a suitable front-end for the receiver that contributes the least amount of noise and the maximum amount of signal amplification. A great many hours of time have been spent putting cascode r.f. stages in receivers, pulling out 6SK7s and putting in 6AK5s, and building grounded-grid pre-selectors.

The baffling enigma in such undertakings is that it is very hard to determine whether such improvements merely boost the gain (and noise) of the receiver or actually hold the set noise down while giving a lift to the signal. Many fellows have become extremely unhappy when they have found out that their new preselector-creation will not allow them to read a signal that is pushing S6 on the receiver meter.

NOISE GENERATORS

Some time ago a simple thermionic diode noise generator was described for Amateur use in determining the efficiency of the input circuit of the receiver.† This noise generator consisted of a vacuum tube diode operating in a temperature limited condition. This means that there is sufficient plate voltage to saturate the available filament emission, and that if the plate voltage is increased the plate current will remain constant. Control of the plate current can therefore be regulated by varying the filament voltage.

Certain diodes, when operating in this condition, will generate a substantial amount of "hiss" or random r.f. noise. This hiss is of a very steady amplitude and may be used for measuring the sensitivity of the receiver.

The easier it is to hear a given amount of diode hiss over the inherent receiver noise, the more sensitive is the receiver. The diode hiss is proportional to the diode plate current, so a measurement of the excellence (or lack of same) of the receiver may be found by comparing the diode current to the amount of hiss heard in the receiver output.

A very well shielded signal generator could be used instead of the diode tube, but signal generators emit a signal on the order of milliwatts, and it requires expensive shielding and attenuation circuits to get down to the microwatt level that is needed for a signal-to-noise check. Some form of generator that starts from zero signal and works up is much better than one that starts with too much signal and works down!

The diode tube noise generator has never quite "caught on," since it has three basic faults:

1. The choice of the diode tube is critical. Only a few of them (the most expensive ones, naturally) will work above about 50 Mc. This washes out the two metre band where a noise generator is sorely needed.

Many years ago a "noise generator" article would have made the author a likely candidate for the straight jacket. Today there is a big field of application for just such a device. So big, that we have reprinted from "CQ" this greatly improved version of the silicon crystal noise generator. It is so simple that it could be "thrown together" in a half-hour.

2. The diode generator needs both a filament and plate supply. It also needs some means of controlling the filament supply over quite a large range. This calls for a variable voltage transformer or a high wattage rheostat.

3. If the supply is a.c. operated, trouble will be encountered with line pick-up of stray radio signals that will introduce an error into noise measurements. Batteries will add weight and cost to the unit.

THE SILICON CRYSTAL

An excellent substitute for the saturated diode tube is a silicon crystal. When a small current is passed through a silicon crystal in the direction of highest resistance, a constant r.f. noise of small amplitude is generated.‡ No filament supply is needed, and the exciting voltage for the crystal may be obtained from a few flashlight cells. The silicon crystal is the only type that will perform this feat. Germanium crystals will not work. This washes out the 1N34 type crystal. The war surplus 1N21 and 1N23 silicon crystals are excellent performers, and are still available on the surplus market at low cost. They have been used for noise generators up to 3,000 Mc.

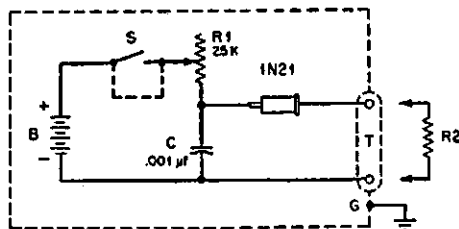


Fig. 1.—Wiring Schematic.

The crystal diode noise generator is a relatively high impedance source of noise, while the diode tube can be considered as a low impedance constant current generator. This fact must be taken into account when one uses the crystal type generator. All comparative signal-to-noise measurements must be made at the same impedance value. A comparison cannot be made if different impedance loads are used. Since most Amateurs have one standard feed line

value, the generator can be set for this value and no trouble will be encountered. This is a fairly small price to pay for such a handy device!

CONSTRUCTION OF A CRYSTAL GENERATOR

Where else can you get so much for so few parts? Look at Fig. 1! The noisy crystal and C form a closed circuit at radio frequencies, placing the generated noise directly across the antenna terminals of the receiver, which are connected to the terminal strip T. Across C is placed the d.c. current supply. A maximum current of six milliamperes is needed, so four small "pen like" cells will last for over a year. The current is controlled by R, the calibrated potentiometer, and the switch S (mounted on the back of R) is used to turn the unit off when it is not in use. The whole generator is built into a small metal box that acts as a shield can for the unit. A ground terminal lug is bolted to one top corner of the box to connect the box to the receiver ground terminal so that no r.f. potential will exist between the generator box and the receiver.

The silicon crystal and the condenser C must be mounted to the terminal strip T by very short leads. Extreme care must be taken when the wire leads are soldered to the crystal. The crystal should be held with a damp rag and the connections made very quickly with a hot iron. If you hold the crystal tightly in one hand, I assure you that you will not let it get too hot! If you are foxier than I was, you might take a Littelfuse holder and convert that into a crystal holder. I was too lazy to do this, and took the easy way out.

Since the flashlight batteries will last their shelf-life in this unit, it is permissible to wire them right into the circuit. Be sure to tape the exposed ends of the battery so they will not short out to the case. A small metal clamp can be used to hold the batteries in place.

If the receiver has a co-axial receptacle input, a matching plug may be put on the noise generator and connection made between the two with a short piece of co-axial line.

Only one thing is missing now. A composition resistor equal in value to the desired line impedance at which the measurements are to be taken is placed across the output terminals of the noise generator. A small one-half watt resistor will be satisfactory. If the co-axial plug and line are used, this resistor should be mounted inside the generator. The unit is now complete and ready for operation.

OPERATION OF A GENERATOR

A typical test set-up for the checking of signal-to-noise ratio of a receiver is shown in Fig. 2. As mentioned before, the resistor R2 is a non-inductive composition resistor having a value equal to the input impedance of the receiver, or to the chosen impedance at which the checks are to be made. The noise generator is connected to the receiver

* Reprinted from "CQ," June, 1952.
† B. Goodman, "How Sensitive is Your Receiver," "QST," Sept. 1947, p.13.

‡ S. N. Van Voorhis, "Microwave Receivers," Vol. 23, Radiation Laboratory Series, McGraw Hill Book Co., N.Y.C.; W. I. Orr, "A Practical Crystal Noise Generator," "Radio and Television News," June, 1951.

and the case of the generator is grounded to the chassis of the receiver. An output meter is connected to the audio circuit of the receiver and the receiver is adjusted as follows:

The a.v.c. and b.f.o. are both turned off. The r.f. gain control is placed full on, and the audio control is advanced until a reading is obtained on the output meter. This arbitrary reading is taken as the zero reading, or reading of natural receiver noise. There should be no pick-up of random signals in this noise, or readings will be in error. (If you don't get any noise from the receiver under these conditions, the overall gain is too low; you don't need a noise meter, you need a new receiver!)

The noise generator should now be turned on, and the knob turned until the receiver output meter registers a 3 db increase. (This corresponds to a voltage increase of 1.41 times the "zero" or original value.) The potentiometer reading on the dial scale now becomes the criterion of signal-to-noise ratio for that particular receiver. The less the reading (more resistance in the diode circuit), the better the signal-to-noise ratio of the receiver being tested.

The readings taken with this unit are arbitrary and cannot be referred to as "so many db above thermal noise." But they do give a ready means of comparing various changes that are made in the receiver. Different receivers may be compared under the same conditions, using the same load resistor.

You will find some startling things that may turn up during receiver checks. Some receivers simply refuse to "put

† Any meter capable of reading a.f. output signal of the receiver; usually the "output" range of a multimeter across the speaker output terminals will give sufficient reading.

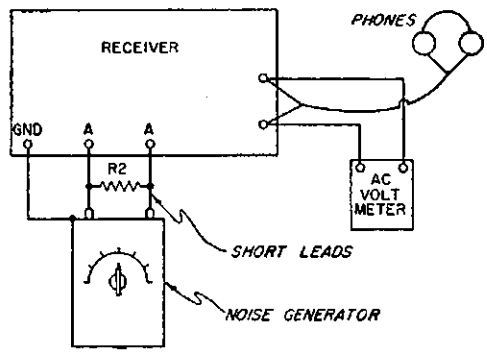


Fig. 2.—A typical set-up for Signal-to-Noise Ratio Measurements.

out" when a 52 ohm input load is used. This is a handy thing to know if you contemplate a new receiver—especially if you are using RG-B/U feedline! Some receivers will exhibit plenty of gain and "hop" but will fall down badly when this acid test is used. Others will have good signal-to-noise ratios at some frequencies, and poor ratios at other frequencies. Some cannot be aligned properly at both ends of the bands! You might also find that maximum signal-to-noise settings of the r.f. padders and trimmers do not coincide with the settings for maximum gain. This will really throw you for a loss if you are aligning your receiver by the signal pick-up method! If the receiver is aligned by ear, it would not be aligned for best signal-to-noise ratio.

By using this noise generator it is easy to obtain the maximum results from your particular receiver. If these maximum results are not good enough for you, it will give you a reliable guide for testing the efficiency of the changes that you make.

50 Mc. W.A.S.

| Call | Certificate Number | Additional Countries |
|--------|--------------------|----------------------|
| VK2WJ | 13 | 4 |
| VK3PG | 5 | 3 |
| VK2VW | 9 | 3 |
| VK4RY | 2 | 2 |
| VK4HR | 4 | 2 |
| VK5LC | 1 | 1 |
| VK6DW | 3 | 1 |
| VK3RR | 6 | 1 |
| VK3HT | 7 | 1 |
| VK2AEZ | 10 | 1 |
| VK3XA | 11 | 1 |
| VK3GM | 12 | 1 |
| VK3ACL | 14 | 1 |
| VK3ZD | 16 | 1 |
| VK2HO | 17 | 1 |
| VK2ABC | 8 | |
| VK2WH | 16 | |

DX C.C. LISTING

| PHONE | | | |
|--------|----------|--------|----------|
| Call | No. Ctr. | Call | No. Ctr. |
| VK4HR | 12 176 | VK4RT | 22 121 |
| VK6RU | 2 168 | VK4WJ | 17 122 |
| VK3BZ | 3 168 | VK4DO | 20 116 |
| VK4FJ | 21 164 | VK4JP | 24 109 |
| VK3EE | 10 163 | VK5MS | 8 109 |
| VK3JD | 1 155 | VK4CB | 28 109 |
| VK4KS | 9 152 | VK3WM | 29 109 |
| VK6KW | 4 150 | VK3HO | 25 103 |
| VK3ATN | 26 145 | VK2ADT | 13 102 |
| VK3LN | 11 141 | VK2AHA | 15 102 |
| VK3AWW | 14 140 | VK6PJ | 19 101 |
| VK3JE | 7 139 | VK3IG | 5 100 |
| VK4WF | 16 137 | VK3GG | 18 100 |
| VK4RW | 23 135 | VK5LC | 27 100 |
| VK6DD | 6 126 | VK3AUP | 30 100 |

| C.W. | | | |
|-------|----------|--------|----------|
| Call | No. Ctr. | Call | No. Ctr. |
| VK3BZ | 6 214 | VK5FH | 31 134 |
| VK3PH | 15 206 | VK4RF | 11 125 |
| VK4HR | 8 200 | VK3HT | 37 124 |
| VK3KB | 10 200 | VK3YD | 27 123 |
| VK4FJ | 29 191 | VK3EK | 3 122 |
| VK4EL | 9 175 | VK3JI | 25 118 |
| VK5BY | 45 172 | VK3PL | 38 117 |
| VK2EO | 2 170 | VK3UM | 12 116 |
| VK3CX | 26 168 | VK2OY | 44 115 |
| VK5RX | 23 159 | VK7LJ | 24 114 |
| VK6RU | 18 158 | VK4DA | 7 113 |
| VK3CN | 1 151 | VK7LZ | 17 112 |
| VK2CW | 16 151 | VK4RC | 13 107 |
| VK6SA | 28 150 | VK9XK | 41 107 |
| VK6BO | 33 150 | VK6KJ | 40 104 |
| VK4QL | 36 146 | VK3J7 | 42 104 |
| VK4DO | 20 144 | VK3YC | 34 103 |
| VK3XO | 43 144 | VK3PG | 46 102 |
| VK3VW | 4 143 | VK3AFA | 19 101 |
| VK2QL | 5 142 | VK3NC | 14 101 |
| VK3XK | 30 138 | VK2OA | 32 101 |
| VK3JE | 21 137 | VK7RK | 22 100 |
| VK3YL | 39 135 | VK2AEZ | 35 100 |
| | | VK4RW | 47 100 |

| OPEN | | | |
|--------|----------|--------|----------|
| Call | No. Ctr. | Call | No. Ctr. |
| VK3BZ | 4 224 | VK5LC | 55 118 |
| VK2ACX | 6 223 | VK7LZ | 23 116 |
| VK4HR | 7 214 | VK3VQ | 46 116 |
| VK4FJ | 32 206 | VK2ASW | 53 116 |
| VK6RU | 8 203 | VK3JA | 43 114 |
| VK3JE | 12 198 | VK2ADT | 14 113 |
| VK2NS | 16 195 | VK3HO | 38 111 |
| VK3HG | 3 181 | VK3MM | 49 111 |
| VK4EL | 10 175 | VK4RC | 21 110 |
| VK6KW | 13 171 | VK3ZB | 34 110 |
| VK2DI | 2 170 | VK9XK | 54 109 |
| VK4DO | 15 168 | VK2ZC | 25 108 |
| VK3KX | 1 167 | VK3KR | 56 107 |
| VK4KS | 24 167 | VK2YL | 38 106 |
| VK9GW | 48 153 | VK9DB | 11 106 |
| VK3AWW | 45 150 | VK3AWN | 59 106 |
| VK4RW | 52 145 | VK6WT | 58 105 |
| VK3LN | 29 144 | VK2VN | 18 104 |
| VK5FL | 26 143 | VK4UL | 27 104 |
| VK4WF | 40 141 | VK6PJ | 44 104 |
| VK3HT | 41 141 | VK6PW | 50 104 |
| VK3MC | 5 139 | VK2HZ | 17 103 |
| VK3OP | 19 137 | VK7KB | 30 103 |
| VK6DX | 42 137 | VK2TI | 37 103 |
| VK6DD | 22 136 | VK3YS | 57 103 |
| VK2ADE | 28 133 | VK7RK | 31 102 |
| VK3JI | 33 131 | VK4TY | 35 102 |
| VK2AHA | 9 128 | VK5HI | 51 101 |
| VK2AHM | 20 125 | VK2TG | 39 100 |
| VK3PG | 47 124 | | |

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Gracefully styled. Finger-tip control. Full range fidelity 10 to 60,000 c.p.s. plus or minus 1/2 db. Push-button programme channel selection. Complete input flexibility. Built-in preamp; 1.5mV sensitivity upwards. Automatic circuit correction. Independent filter and filter slope controls. Bass and treble designed for musical balance, independent of harmonic filtering.

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TWIN-LEAD "SPRIGS"

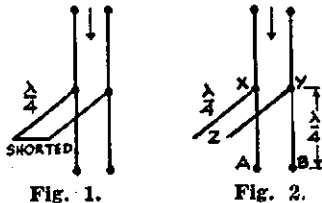
TWO ANTENNA TO ONE FEED LINE

BY G. M. BOWEN,* VK5XU

For those v.h.f. enthusiasts who place a 144 Mc. beam above the 50 Mc. one and find that having more than one feed line is either too costly or inconvenient, this article, gleaned from the "Technical Section" of Sylvania News, should be the answer. I particularly specify these two bands because they are not related harmonically. The arrangement will not work on 144 and 288 Mc., for example, because all the acceptor and rejector stubs or "sprigs," as they are referred to in the States, are quarter wave or three-quarter wave lengths.

The unit is constructed from twin lead with a velocity factor of about 0.82 and can be located at the head of the tower or mast. In the usual way the flat ribbon can be changed for open lines as soon as the rotating section is cleared. If two receivers are required, for example to work duplex cross-band, it is possible to develop a similar network for inside the shack.

Basically, the filter in each line from the antennae functions on the principle that an electrical quarter wave, when shorted at one end, presents a very high impedance at the open ends to any signal at the resonant frequency. In other words, it acts as a rejector circuit when placed across the transmission line as in Fig. 1.



If the stub is an open quarter wave, then across X and Y (Fig. 2) there will be a short circuit equivalent to an acceptor or series resonant circuit, but across A and B a high impedance to any resonant frequency signal. Thus the non-resonant incoming signal in Fig. 2, shown by the arrow, will be passed by X and Y since the impedance at X and Y is high. So it reaches AB, which is the junction of the feeder to the shack. The resonant frequency signal looking into the filter from AB will see a rejector circuit because it sees a half wave made up of AX and XZ.

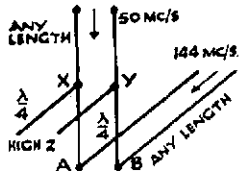


Fig. 3.

Fig. 2 will therefore develop into Fig. 3.

However, it will be seen that the 144 Mc. antenna and its feed line will possibly short out the 50 Mc. signal, so it will be necessary to insert a filter in the 144 Mc. line to place a high impedance at AB to the 50 Mc. signal. This is illustrated in Fig. 4.

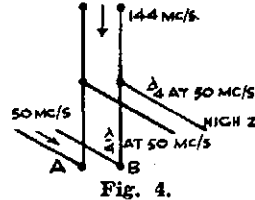


Fig. 4.

Combining these two filters to reject the 144 Mc. signal from one antenna and the 50 Mc. from the other, we arrive at the arrangement shown in Fig. 5.

Two quarter wave sections placed a quarter wave length from the junction of the two leads create high impedances

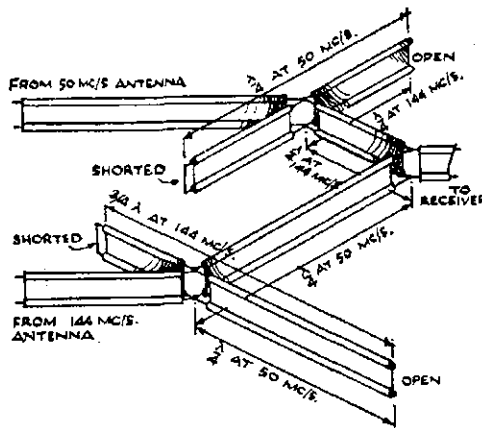


Fig. 5.

Length of Sections:—
 Quarter Wave at 50 Mc.—47 inches
 " " " 144 " —17-5/8 "
 Three-quarter " 144 " —52-7/8 "

AMATEUR BANDS AVAILABLE

| | |
|-----------------|------------------|
| *1.84— 1.86 Mc. | †288— 296 Mc. |
| 3.5 — 3.8 " | †576— 585 " |
| 7 — 7.15 " | 1,215— 1,300 " |
| 14 — 14.35 " | 2,300— 2,450 " |
| 21 — 21.45 " | 5,650— 5,850 " |
| 26.96— 27.23 " | 10,000—10,500 " |
| 28 — 30 " | †21,000—22,000 " |
| 50 — 54 " | †30,000 Mc. and |
| 144 —148 " | Above. |

* Available for emergency network purposes only. Normal Amateur activities are not permitted in this band.

† Temporary allocations.

because they are left open at their ends; in simple language, they reject the unwanted signals from the wanted ones!

If you study Fig. 5 carefully you will quite easily find the high and low impedance points. The two shorted sections can be earthed, since they are at voltage nodes, and the open ends should be supported away from any part of the beam structure. In Fig. 5, for the sake of clarity, the plastic ribbon has been shown as cut away at the junctions of the lines and the stubs. However in constructing the network, as much of the plastic as possible should remain in between or the sudden change in dielectric will create bad reflections.

Although originally designed for t.v. reception, it still can be used as a frequency selective network into which two transmitters can be fed. A single feeder then goes to a similar network which will divide off each signal to its appropriate antenna.

For successful operation of such an ideal arrangement, very careful matching of feed impedances is necessary. Otherwise if standing waves appear on the feeder, the filter network will become unbalanced. When used for receiving only, the matching into the receiver input impedance is important and the line must see its own impedance.

HINTS AND KINKS

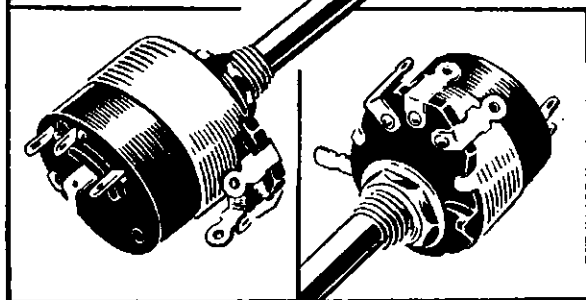
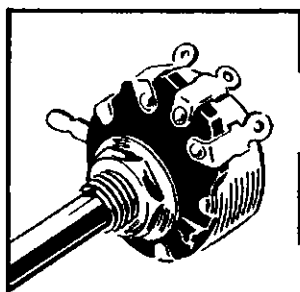
WEATHERPROOFED RIBBON FEEDLINE

300 ohm flat ribbon, of the light grey variety, does not take kindly to exposure to weather and after a few months in wind, rain and sun, cracking and subsequent conductor oxidation sets in. If, however, you enclose and seal the feedline in p.v.c. flexible sheathing, the outcome is a line comparable with the tubular kind. You can even use the old garden hose—or the newer plastic kind. Sealing, particularly at the elevated end of the feedline can be done effectively by applying first a coating of Pliobond adhesive with a final covering of Bostik or similar adhesive.—VK2NO.

24 VOLT RELAYS ON 12 VOLTS

Most of the relays found in ex-war gear are designed for 24 volt operation, and if used on 12 volts, do not have enough pull. In the case of two bobbin 24 volt relays, however, a simple modification will render them suitable for the lower voltage. Re-connect the two windings so that instead of series connection they are in parallel. Make sure that the polarity is correct, i.e. that the inductances aid instead of "bucking."—VK2NO.

* 73 Portrush Road, Toorak Gardens, S.A.



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MAX HOWDEN, VK3BQ

BY VK3VZ

ANYONE who tunes the 144 Mc. band knows Max Howden, VK3BQ, because he is one of our most active men on this band, and if you live within a mile and a half, as I do, will testify to the efficiency of the 45 watt signal radiated from that station.

To see how he does it, I paid him a visit and now pass on my findings so that we all might learn first what his ideas are on v.h.f. generally.

Max, as we all know, is one of our pioneering Amateurs who first came into the limelight in May, 1923, when he won the Trans-Pacific test by logging 22 stations. The band used was 150-250 metres, for in those days all wavelengths below about 250 metres were allotted to Amateurs. The receiver used to win the contest is now in the Victorian Division rooms.

In the following year, with the granting of transmitting licenses, contact was established on c.w. with W6AHP on 2nd November, 1924, and then G2OD in England on 13th November, 1924, also on c.w. The wavelength used was 87 metres, which was v.h.f. in those days. QRM was bad in the United States because about 22,000 Amateurs were licensed at that time, and to avoid this, the VKs pushed a little higher in frequency.

Since those early days, Max has retained his interest and has always been found helping to pioneer the higher frequencies. In 1938 I can remember him on the 28 Mc. band, which, with 56-60 Mc., was quite high frequency in those days.

Today his interest is mainly 144 Mc. and being a keen experimenter, he favours the breadboard type of construction.

The transmitter is fairly conventional, consisting of a 6AG7 tritode, with output on 24 Mc., 5763 doubler, 2E26 tripler, and 829B final, with an input of about 45 watts. This feeds a beam aerial which we suspect is the main reason for that terrific signal.

This beam is virtually three 4 over 4 beams, side by side and fed in phase, making 24 elements in all.

Two horizontal longerons, one above the other, are attached to the mast at their centres, and the booms of the four element sections are attached at right angles to this.

Bracing is carried out with 100 lb. nylon fishing line, and Max is most enthusiastic about the way it does the job. Nylon line possesses quite a deal of elasticity and allows the elements to give slightly in heavy gusts of wind. If you are keen on fishing, you will know how very strong this nylon line is.

Speaking of the beam generally, Max does not think the addition of the third 4 over 4 was worth the effort involved and considers that for all practical purposes the pair of 4 over 4's he had up previously was nearly as good from a result point of view and a lot less complicated to phase and match properly.

His only hint was to make sure that the pole passing up between the pairs of four element beams is a wooden one, as the losses are high with the ends of the elements near a metal pole.

Rotation of the beam is done by means of a shaft down the centre of the tower, driven by a right angle drive from inside the shack. An old motor car steering wheel does the turning.

The beam is extremely sharp and a variation of 10 degrees will cause a noticeable drop in signal strength.

The receiving side is handled by an AR88 receiver fed from a crystal locked converter, and it was this converter which caught my eye.

The signal to noise ratio was extremely good and the stations being received stood out with a perfectly quiet background. This was most noticeable on the country stations.

The converter uses a 6J6 neutralised 1st r.f. closely coupled to a 6AK5 2nd r.f., operating with only 8 volts on the screen and 100 volts on the plate. One half of a 6J6 is used as the mixer, again with only 8 volts on the plate, whilst coupling to the AR88 receiver is taken off the cathode. The plate of the other triode is left floating and oscillator voltage is injected through the grid of this second section.

An 11 Mc. crystal in a regenerative circuit, using a 6SH7, feeds a 6AK5 harmonic amplifier which in turn feeds into the 6J6 grid mentioned previously. The output of the 6SH7 is at 44 Mc., and the 6AK5 at 132 Mc., which beats with the incoming signals to give output in the range 12-16 Mc.

Max attributes the low noise of the converter to the triode 1st r.f., the use of low screen volts on the 6AK5 2nd r.f. and also the 6J6 mixer plate. In any event, he has found this converter superior to the cascode front end.

He passes this suggestion on to all who strive to build the ultimate in converters for v.h.f. bands. "If you are not satisfied with the converter you have, don't pull it down, build another one and then you will have the old one as a standard of comparison. If the new one is better—then pull the old one down, but not before."

Sound advice from an "Old Timer" who is still in the forefront of Amateur Radio today, and a leader in the latest techniques.

To cap our visit, a break-through occurred to Tasmania and VK7PF and VK7LZ were worked. This rounded off a very interesting evening, from which we made two interesting observations. Amateurs, no matter what age, retain a youthful enthusiasm which keeps them young and alert, and also that Max's years of experience are standing him in very good stead when it comes to modern v.h.f. work.

NATIONAL FIELD DAY

NOW ON SUNDAY, 3rd APRIL

This Contest, which was previously postponed owing to the Flood Emergency in New South Wales, will now be held on Sunday, 3rd April, 1955.

The rules were published in February, 1955, "Amateur Radio." Rule 1 is now amended to read "Sunday, 3rd April, 1955," and Rule 9 (return of logs) to read "Saturday, 30th April, 1955."

Remember, Contest is on Sunday, 3rd April, and logs are to be returned by Saturday, 30th April.

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Listed below are rating and characteristics of the 2E26 and other types from the comprehensive A.W.V. Radiotron range, which are ideal for amateur use.

| Type | Heater Volts | Dimensions In inches | | Transconductance Micromhos | Max. Plate Ratings | |
|------------------------------------|--------------|----------------------|--------|-------------------------------|----------------------|------------------|
| | | Length | Diam. | | DC Volts | Dissipation (W.) |
| 2E26 | 6.3 | 3 21/32 | 1 5/16 | 3500 | 700* | 18.5* |
| 813 | 10.0 | 7 1/2 | 2 9/16 | 3750 | 2250† | 125. † |
| 807 | 6.3 | 5 3/4 | 2 1/16 | 6000 | 750† | 30. † |
| Max. Plate or Anode Ratings | | | | | | |
| 866A | 2.5 | 6 9/16 | 2 7/16 | Peak Inv. Volts | Amp. Av. | |
| | | | | 10,000 | 0.25 | |
| | | | | Operating Volts | Operating Current MA | |
| | | | | | Min. | Max. |
| OC3 | — | 4 1/8 | 1 9/16 | 108 | 5 | 40 |
| OD3 | — | 4 1/8 | 1 9/16 | 153 | 5 | 40 |

*For Intermittent Mobile Service.
†For Intermittent and Commercial Amateur Service.

Amateurs agree that the A.W.V. Radiotron Beam Power type 2E26 is ideally suited to their VHF rigs. Designed specifically for such applications, this sturdily built unit will give better performance, longer life and added reliability to your transmitter:

Consider these features . . .

- HIGH POWER:** A single A.W.V. Radiotron-2E26 operated at its ICAS ratings will take an input of 33 watts at 500 plate volts in class C telegraphy at frequencies as high as 150 Mc., and 40 watts at 600 volts at 54 Mc. It will take an input of 22.5 watts at 415 plate volts in class C telephony at frequencies as high as 150 Mc., and 27watts at 500 volts at 54 Mc.
- LOW DRIVE:** At 144 Mc., about 2 watts of RF must be delivered to the grid circuit. A 6V6-GT is a satisfactory driver tube.
- ECONOMY:** Small in size with high power sensitivity, and high efficiency the A.W.V. Radiotron 2E26 makes an excellent final amplifier for a compact, inexpensive VHF transmitter operated from a simple low-voltage power supply.
- CONSTRUCTION:** The 2E26 has short internal leads, a rugged button stem fitted to an octal base having a low-loss micanol insert and metal sleeve, excellent internal shielding, and double-ended construction for isolation of grid and plate circuits.
- APPLICATIONS:** The 2E26 is an excellent medium-power final amplifier for 6 and 2 metres. As a doubler, it will supply more than adequate power to drive an 829-B or 815. It will deliver 15 watts of 2-metre RF as a TPTG oscillator.



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DENMARK PAYS A TRIBUTE TO VKIEG

The following letter, which is self explanatory, has been received from Borge Peterson, OZ2NU, and we publish the letter, together with the enclosure as received.

Box 335, Aalborg,
Denmark.
24/11/54.

Editor "A.R.,"

Dear Sir and Friend,

I am sure it is not often that you receive material for your magazine "Amateur Radio" from Denmark, but I am sure that you will allow the enclosed article to be published in your magazine. We are proud of the fact that the Australian Government has found the Danish ship "Kista Dan" useable for the expedition to Robertson Land and Mawson.

Your Amateur friend, who is writing and sending this, is happy to have been working with the building of the ship and to have had the opportunity a few days ago to hear a lecture on the voyage to Robertson Land by Captain H. Petersen, the chief on "Kista Dan," during its stay here on the yard where it was prepared for its next trip to the Antarctic.

With my best compliments and 73,

BORGE PETERSON, OZ2NU,
Shipbuilding Engineer, and
Traffic Manager E.D.R.

ACKNOWLEDGMENT TO BILL STORER, VKIEG

It is always appreciated by DX hunters when someone in the ranks of Radio Amateurs makes it possible to "get" a new country. We know of several cases during the last few years as announced in the DX columns of the different Amateur magazines. One of the most well-known through 1954 has been Bill Storer, VKIEG, on Robertson Land in the Antarctic. We remember also the Chilean Expedition to Easter Island earlier in the year (1954).

It is of interest that both the ships which have been used by these two expeditions were built on the shipyard of Aalborg in Northern Jutland.

The "Kista Dan" has for a few days been back here on the yard for a necessary "make up" before going down again to the Antarctic. The writer was happy to be present during a lecture given by Captain H. Petersen, chief of the "Kista Dan," who told about the voyage to Mawson and about the people making the expedition.

As a Radio Amateur and as one of the builders of the two ships mentioned, the author takes the opportunity to greet the men who have been pioneers and furthermore, have been excellent ambassadors for the Radio movement.

The expression of gratitude isn't coming from the writer alone, but from innumerable places around the world, from DX operators favoured with contacts with Bill in the Antarctic.

In the spirit of this, the Traffic Department of E.D.R.—the Experimenting Radio Amateurs—has awarded a certificate of acknowledgment to our Amateur friend Bill Storer, VKIEG, and our thoughts are following it on its way down South with the "Kista Dan" struggling its way through the Antarctic Ocean—an effort worth a certificate in itself.

Thank you Bill, a thank you from our hearts.

POLICE NOTICE

One thousand microfarads reward is offered for the capture of Hop Along Capacity who escaped from Pushpull Primary Cells yesterday armed with a carbon rod. He is wanted for the inductance of an 18 year-old coil. Pushpull E.M.F. have been searching the magnetic field for ampere hours. It must be noted that when cornered he will offer great resistance which must be neutralised. Ohm town dielectric agents please pick up and relay.

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AUSTRALIAN V.H.F. RECORDS

| Band Mc. | TWO-WAY WORK | | | World Miles Rec'd |
|-------------|-------------------|----------|-------|----------------------|
| | Stations | Date | Miles | |
| 50 | VK5KL-W7ACS/KH6 | 28/8/47 | 5355 | 10800 |
| | VK3IM-VR2CB | 30/12/53 | 2405 | |
| | VK7BQ/LZ-VK9DB | | 2211 | |
| 144 | VK3GM/3-VK7LZ/PF | 9/3/52 | 317 | 1400 |
| 288 | VK3AFJ/3-VK3AAF/3 | 21/3/54 | 63.8 | — |
| 576 | VK3ANW-VK3AKE | 11/12/49 | 81.6 | — |
| 1215 | | | | 100 |
| 2300 | VK3ANW-VK3XA | 18/2/50 | 9.1 | 150 |
| 5650 | | | | — |
| 10000 | | | | 108 |
| 21000 | | | | 800 ft. |
| 30000 | | | | — |

It is in the interests of all v.h.f. enthusiasts to notify F.E. through Divisions, if you can better the above figures. Please give exact details of both stations' locations for checking, when submitting your records.

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."

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are holding a

CONVENTION

at PALM BEACH on

30th APRIL, 1st and 2nd MAY

All Amateurs and S.w.'s. invited.

A Scramble will be held on 30th April and 1st May. Try and contact these stations.

Components for V.H.F. Men

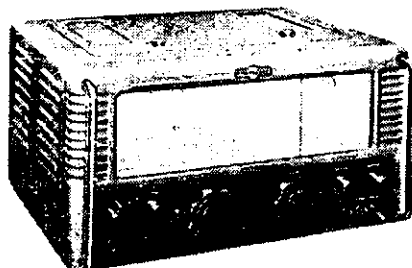
- **EDDYSTONE** Cat. No. 709 144 Mc. Tuning Assembly
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 - Cat. No. 580 Single Section 12.5 pF. 14/4
 - Cat. No. 581 Single Section 60 pF. (screwdriver adjust.) 18/5
 - Cat. No. 582 Single Section 60 pF. 18/5
 - Cat. No. 583 Split-Stator 25 x 25 pF. 16/11
 - Cat. No. 584 Butterfly 34 x 34 pF. 17/11
 - Cat. No. 585 Single Section 100 pF. 23/7
 - Cat. No. 586 Single Section 140 pF. 24/7
 - Cat. No. 587 Butterfly 15 x 15 pF. 20/6
 - Cat. No. 588 Single Section 27.5 pF. 16/4
 - Cat. No. 589 Single Section 54 pF. 18/5
 - Cat. No. 738* Single Section 100 pF. (double end plates, for use in Oscillators and V.F.O.'s.) 33/10
 - Cat. No. 739 Butterfly 8 x 8 pF. 20/6
- Above Prices subject to sales Tax at 16-2/3%.
- * Cat. No. 738 at 12½% Sales Tax.
- **EDDYSTONE MINIATURE MICRODENSERS—**
 - Cat. No. 551 Butterfly 25 x 25 pF., 90 degrees rotation 27/8
 - Cat. No. 552 Split-Stator 25 x 25 pF., 180 degrees rotation 28/2
 - Cat. No. 553 Single Section 50 pF., 180 degrees rotation 25/7
- Above Prices subject to Sales Tax at 16-2/3%.
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 - B9-A 11/5
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 - Belling & Lee "Nylon" B7-G (inc. Tax) 7/4
 - B9-A (inc. Tax) 8/3
- **BELLING & LEE 9-Pin EF50 Type Ceramic Sockets, 9/3 inc. Tax**
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SHORT WAVE LISTENERS' SECTION*

VICTORIAN MONTHLY MEETING

The meeting was held in the rooms at 191 Queen Street at 2000 hours on 22nd February, 1955. After the normal business, Gerrard Lane gave a lecture on 2 mx equipment. A new member for the month was Don McDonald, of Balwyn. Good DX Don. Meeting closed at 2215 hours.

A.B.C. Visit: On Wednesday, 23rd February, the members of the VK3 Division visited the Melbourne Studios of the Australian Broadcasting Commission. Some 15 members turned up including Arthur 3AHD. All had a very interesting time and we thank our hosts of the A.B.C. for conducting the very informative tour.

NEW REPORTERS

I would like to say welcome to Ted Bayley, of Ballarat. Ted is a P.M.G. linesman and has been an s.w.l. for some 15-20 years. He uses a 9-tube Hallicrafters Sky Champion and a W8JK beam. He has received QSLs from 122 countries and has some 2,200 QSLs.

From Rod de Balfast, of Launceston, we received a very healthy list of reports. Rod uses a 2-tube t.r.f. receiver, using a 6U7 and 6L5 with a half wave end fed Zepp on 40 mx.

To Rod and Ted may you have a good season of DX.

CALLS HEARD ON THE BANDS

144 Mc.: 3ATN, 3YS, 3LN, 3ZAW, 3ZAF, 3ALW, 3UE, 3ZAA.

3.5 Mc.: W6, W0, W7.

7 Mc.: ZL, ZM6, W6s, W5, KC6, KH, HF, HP3, CO2, CO8, and HR4.

14 Mc.: W3, KH6, W8, ZL3, W9, W2, KH2, W0, PY2, W7, CE3, CN8, 3V8, 4X4, OD5, F8, F9, DL3, YV5, VK1, VK9, ZS1, CO2, CS3—these from Frank Nowland and Geoff Morris. From Rod, of VK7 land, CN8MN, W8YU, W6BUD, DUICV, KC6CG, KH6ST, KA2LK. From Michael Ide CTI, EA4, RK3, KA3, KA2, KA7, A0, KC8, US2, W5, VET, OEL, KH6, KG6, KJ8, W8, W7, YV, 4S7, W3, HP3FL.

21 Mc.: From Frank and Geoff: W6AL, W6CBE, VK9DB, VR2CG, W6ONT, W6EY, W4VVU, A14AA.

SOUTH AUSTRALIAN S.W.L. GROUP

Jim Paris, of Prospect, S.A., has forwarded news of the VK5 Division forming an S.w.l. Group.

On their first meeting, seven members turned up and they received enquiries from another six people.

To the VK5 S.w.l. Group we here in VK3 wish you all the best and a highly successful group.

S.W.L. REPORT FORMS

The Victorian Division of the W.I.A. have issued printed S.w.l. Report Forms which are available from the rooms at 191 Queen Street, Melbourne, for a small fee of 2/6 per 50 sheets.

SEND CORRECT AND DETAILED REPORTS

We have received from overseas Amateur Stations details which show that Australian s.w.l.'s. are sending false and uninformative reports and expect 100 per cent. QSLs from the stations sent to. Your reports must be accurate and to the point and must contain the detail which is required by the transmitting station.

Reports should contain information on the frequency upon which the station is working, date, time (G.M.T. and your local time), signal strength, readability, fading, interference, weather conditions, programme heard, your receiver details (including number of valves), your aerial (direction and height of same), your name and address.

To members of the W.I.A. you may send your reports via the QSL Bureau for a small fee, and they will go much cheaper than by ordinary mail. But remember, if you want the stations to return your QSL card, then include an International Reply Coupon with each report.

Just place the report and reply coupon in an envelope and place the call sign of the station on the envelope and forward to the Outward QSL Manager of your Division.

S.W.L. REPORTS

Many short wave listeners have from time to time reported reception of a station and because that station does not normally issue verification of reception in the usual form, their report is unanswered.

A form called "Prepared QSL" was used by many s.w.l.'s. during and immediately after the last war. However, their use still stands good

* Compiled by John Wilson, 37 Rayment Street, Alphington, Vic.

where many Amateur Stations who have no cards, or whose stock is exhausted, will favour you with a reply.

But a report should consist of more than is customarily found in reports, such as: Ur sigs hrd 0200 hrs G.M.T. on 20 metre phone. Wkg W0000 S7 QSA5. Please QSL.

That kind of report is of no help to anyone. Stations prefer to know just how well their signals are received. Many overseas short wave broadcasting stations usually are well informed by medium of expert technical advice, how well their signals will reach a given location. But even the best of predictions can go astray and a report or reports from listeners go a long way in compiling accurate details of the station's range.

For any Commercial Broadcast or Short Wave Broadcast Stations, the minimum report should be 30 minutes. Containing sufficient material for them to identify their own programme, announcements, musical items, etc., should be identified where possible and an accurate time given for beginning and commencement of each item. For best results use Greenwich Mean Time, 10 hours behind Australian Eastern Time. Often a careful check can be made with a sheet of graph paper which can be divided into two parts. (1) Signal strength and readability.

Each square could represent 1 minute and while you are filling in details of the programme in your log book, each minute mark a point on the graph sheet. When your listening time is over, join the points and you will then have a pretty good idea how the reception was maintained over the listening period. Signal strength could be compared with a signal strength meter or by a scale devised yourself following the degrees listed on the bottom of the Official Report Forms available from the Group.

You may then forward your report on appropriate form, together with your graph, and forward same to the station. Station addresses will be featured from time to time in this magazine.

For a reply, enclose stamp to cover return postage in Australia only. Outside Australia, but inside British Empire, Imperial Reply Coupon. Outside British Empire, including the U.S.A., use an International Reply Coupon.

Don't forget, a good report usually receives an early reply. Good luck in your reporting.

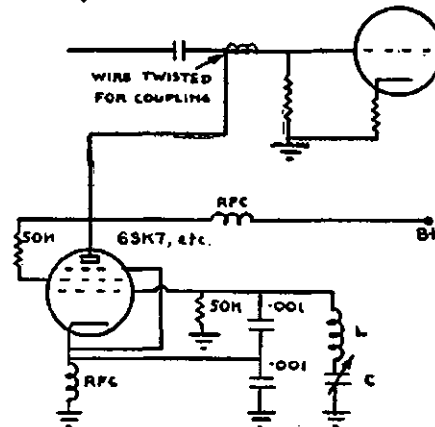
Suggested outline for prepared QSL—

To: Own Name and Address.
I/We acknowledge receipt of your report dated reporting reception of station operating on Mc. Metres on (date) (time, G.M.T.). Station was operating using a power output of watts into antenna, radiating in direction to

This certifies that your report has been checked against Station Log and found to be correct.
I/We hereby confirm reception of Station.....
Signed by Station Operators.

S.W.L. HINKS AND KINKS SECTION

This month we publish a circuit of a Clapp Oscillator submitted by Bruce Ackland. Bruce suggests that this oscillator be used either as the main oscillator in your receiver or else as the second



oscillator in a dual conversion job, thus saving the cost of an expensive crystal. The Clapp oscillator is noted for its excellent stability and the fact that it is

not very sensitive to changes in valve capacitance, during the warm up period. Naturally, as with any oscillator circuit, only the best of components should be used and the most rigid construction employed if the best results are to be obtained.

BROADCAST BAND

Radio Erreann, Ireland. Station at Athlone uses 100 kw. on 586 Kc.; Station at Dublin, 5 kw. on 1250 Kc.; Station at Cork, 5 kw. on 1250 Kc.

Radio Erreann states that they have no short wave outlets and that the transmitters at both Cork and Dublin are new transmitters and are now on regular broadcasts.

A 100 kw. transmitter is to be installed in Athlone before the end of the year in replacement of the existing one which has been in use since 1933. The Athlone transmitter is capable of covering all parts of the country reasonably well, but the service area of Dublin and Cork transmitters are limited.

Regular broadcast hours are as follows: 0800 to 0915, 1300 to 1430, and 1700 to 2330 G.M.T. On Sundays the hours are from 1230 to 2330 G.M.T.



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KNOW, BUT DO
YOU DO IT?

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MIC 36



£6/18/6

Housed in attractive plastic case, this Microphone is ideal for home recording and public address, etc. Response unexcelled for its size and price. The performance is not affected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s. Recommended load resistance not less than 1 megohm dependent on low frequency response. Can be supplied complete with switch and floor stand adaptor as required at a small extra cost.

TABLE AND STAND MICROPHONE

MIC 22



This omni-directional Microphone is robust in construction, with a pleasing appearance. Vibration, shock or low frequency wind noise will not affect the performance. The low frequency cut-off is dependent on the load resistance. The cut-off is given by the quotation, $F = 80 \div R$, where $F =$ c.p.s., $R =$ megohms. An adaptor (floor mounting) is available at low extra cost.

SPECIFICATION

Output level = -50 db ref. 1 volt/dyne/cm².
Output impedance—equivalent to approximately 0.002 uF. (0.8 megohm at 100 cycles).
Frequency response—substantially flat from 40 to 6000 c.p.s.

Recommended load resistance—not less than 1 megohm, dependent on low frequency response. £9/18/6

HIGH QUALITY MICROPHONE

Designed to meet even the most exacting requirements, this Microphone incorporates the world famous floating crystal sound cell construction. Its special characteristics are that its fine performance is not affected by vibration or shock. The fidelity is not impaired by low frequency wind noise.

SPECIFICATION

Recommended load resistance—not less than 1 megohm.
Output level -65 db ref. 1 volt/dyne/cm².
Frequency response—substantially flat from 30 c.p.s. to 10,000 c.p.s.
Directivity—non-directional.
Size—2½" spherical diameter.
Connector—Standard international 3-pin.

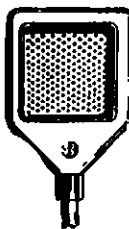
MIC 16



£24/19/6

LAPEL MICROPHONE

MIC 28



£5/19/6

Designed to give freedom of movement, this Microphone is small and non-directional. Housed in a soft moulded rubber case, which gives protection against shock, it is provided with a pin at the rear of the case for pinning to the lapel.

SPECIFICATION

Output level—approx. -55 db ref. 1 volt/dyne/cm².
Recommended load resistance—5 megohms.
Frequency response—level throughout the whole of the audible spectrum.
Capacity—0.0015 uF. at 1000 c.p.s.
Impedance—100,000 ohms at 1000 c.p.s.
Cord—6 ft. shielded cable.
Size—1-9/16" wide x 2¼" long x ¾" thick.

GENERAL PURPOSE MICROPHONE

MIC 35



£2/15/-

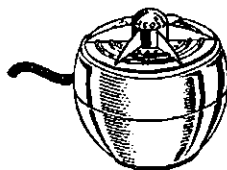
substantially flat response from 50 to 5000 c.p.s.

SPECIFICATION

Output level: -55 db ref. 1 volt/dyne/cm².
Cable—approx. 4 ft. of co-axial supplied.
Weight—6 ozs. unpacked, 7 ozs. packed.
Dimensions—microphone only 2¼" x 2¼" x ¾"

HAND OR DESK MICROPHONE

MIC 33



£6/18/6

This Microphone has been designed for the high quality public address and home recording field. High sensitivity and flat characteristics are obtained by a specially designed acoustic filter. Housed in an attractive plastic case with an unexcelled response for its size and price. Unaffected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s.

MICROPHONE INSERTS



(MIC 32 illustrated)

CRYSTAL MICROPHONE INSERTS

These inserts are available in varying sizes ranging from as small as 15/16" square to 1-13/16" round, with various thicknesses from 7/32" to 9/16". Suitable for every purpose such as hearing aids, public address, tape recording, amateur broadcasting, etc., they have responses from 2250 c.p.s. to 3500 c.p.s. at 5 db to 30 db. Insert can be supplied with or without 10 meg. resistor as required.

MIC 32 insert, £2/15/6; all others, £1/19/6.

MICROPHONE INSERTS



(MIC 23 illustrated)

AMPLION (A'SIA) PTY. LTD.

EXCLUSIVE AGENTS:

SYDNEY, AUSTRALIA

DX ACTIVITY BY VK3AHH†

PROPAGATION REPORT

3.5 Mc.: Times of openings and quality of overseas conditions were relatively reliable throughout the month. Europe was represented between 1830 and 2000z and North America around 0800-1300z. The Pacific Islands and the Far East broke through between 0800 and 1200z.

7 Mc.: Here conditions have 100% been fair to good with European and North African break-throughs over the long path 0700-0930z and along the short route 1900-2200z. Openings along both, long and short route, can also be reported for North America (2000-2300z and 0700-1400z). Occasionally, South American conditions could be noticed around 0800-1000z. 0800-1400z was the period for the Pacific Islands and South East Asia.

11 Mc.: This band provided reasonable conditions when open. Contacts with all continents have been reported. Times for Europe were 0400-1000z and 1100-1400z. North American contacts were possible around 2100-2400z and 0300-0900z with some erratic break-throughs at other times. Openings to Africa existed during the periods 0800-1000z, 1200-1500z, and 2200-2400z. Conditions to South America were reported as 0300-1000z.

21 Mc.: More or less regular openings to North America have been reported (2300-0300z). Three European break-throughs have been observed in Victoria (on the 6th, 9th and 20th February).

27-28 Mc.: According to a report, this band had been open to California.

NEWS AND NOTES

While continuous, heavy rain hit New South Wales, while abnormal weather conditions caused extensive floods, the **Radio Amateur** was in the mind of all who were concerned with this catastrophe. Where communications were cut, where food and other essentials were needed by country towns and areas, he offered his helping hand, his expert-like performance, his ability and training. Very efficiently organised by the N.S.W. Division, smooth and orderly traffic was maintained at all times. Once again, this proved to authorities and public that, in emergencies, Amateurs—proficient in operation and technique as well—secure most reliable communication. Thus let us join in with this word of praise to the VK2 Amateurs for a job well done!

With monotonous regularity, day follows day, month follows month, year follows year, and cycle follows cycle! Yes, the good old Sun has spots again! Jokes aside, it may now be stated that the number of sunspots is increasing steadily. As is generally known, the exact time of the actual minimum value cannot be recognised accurately until a year or so after, which was one reason for your scribe to hesitate with such announcements. However, it now seems to be certain that the slope is positive. Thus we have entered a new cycle and can look forward to a gradual improvement of DX conditions on the 27-28 Mc. and 21 Mc. bands. Here we like to offer a word of appreciation to those Amateurs who, during the tedious minimum period reported on 27-28 Mc. conditions, namely VKs 2AFE, 2ALJ, 3YS, 3YT, 4EL, 4TN, 4XJ, 5HI, 9GW and s.w.l. Jim Hunt.

The 1955 team on Macquarie Island, i.e. VKs 1HH, IDC, and 1ZM, have now commenced operation while, at time of writing, the expedition ship Kista Dan is on her way back from Antarctica and is now expected to arrive in Melbourne in the last week of March or beginning

of April. Welcome home to VK1DY, VK1PG and VK1EG!

VQ6LQ, now on leave in G land, will return in April. HB1MX/HE is frequently active from Liechtenstein on three bands, namely 7, 14, and 21 Mc.

The list of active V8 stations is as follows: Antarctica—VP8BP, VP8AO; South Shetlands: VP8BX, VP8BY; South Orkneys: VP8AQ.

Guadeloupe is represented with FG7XB on 7 Mc. c.w.

KC6ZB will leave Yap Island early in April for vacations.

The W.I.A. Olympic Games Committee (3TE and 3AHH) has co-opted Max 3ZS. Considerable preparatory work has been done. Readers will be kept informed through this and other channels.

QTHs OF INTEREST

FG7XB: Antoine Noel, 44 Chemin des Petites, Pointe Pitre, Guadeloupe, F.W.I.
HZ1AB: 7244th Air Base Squadron, M.A.R.S., A.P.O. 616C, C/o P.M. New York, N.Y.
EL2L: Sam Butler, Monrovia, Liberia.
VQ9AR: Floreal, Mauritius.

ACTIVITIES

3.5 Mc.: Frank 2QL heads the list with W9*, W0* and SM5HD. DL, G. LZ1KSP, YU3AB, KP4CC, DU7SV, KR6LJ, KH6VU, Neil SHG follows with W1*, W3*, W0*. Eric BERS195 heard DU7SV, KP4CC, W6. 3AHH's log shows numerous Ws* and G6YQ, KR6LJ, SM5HD, LA7CE, F8DW.

7 Mc.: 2QL reports OQR5U* and CR6AI, 4X4BT, E00DB. The next in line is Laurie 2AMB with G6Z0*, G3DCU, G3RT*, G4CP*, OH6Y*, VE*, KP4JE*, KP4CC*, CO2BM*, SM6AQ*, SV5WV*, J20DN*, LU1FBQ* and EA4CS, EA4BV, CR9AH, VS6AE, CO8FH, VS1GO, DU9JG, SMSUQ, Fred 3YS heard KC6AJ and Noel 3ZO adds CR9AF*, KL7*, CO8FH*, KR6OS*, JZ0DN*. Eric BERS195 follows with AD4EAR, CO7HS, CO8AQ, CR9AH, EA9DF, FA8CR, FA8RJ, FA8DA, FA8BG, FA9RW, F9GWF, DU9JO, HB1ET/MM, HB9HL/MM, HZ1HZ, JA, OQR5U, JZ0DN (1300z), VQ3FN, VQ4RF, ZB1DT, ZC4IP, ZE3JO, 4X4BD, 4X4GD, 4X4GW, 3V8AB. Dave Jenkin heard KL7, DL3VR.

11 Mc. C.w.: 2QL: IT1TAL, CR5SP, EA8DF, Noel 2AHH, VS2DW*, KZ5GH*, ZB1CH*, VS9XZ*, DU8CO*, 2AMB: GM*, G*, VS6*, VQ4AQ*, OE5JK*, OZ7SN*, CT3AB*, KR6*, JZ0AG* and KC6CG, Harry 3GU: DL*, 3HG: OH*, 3JA: ZC4RX*, ZC4JA*, G*, GI*, VQ4AQ*, MP4BBE*, DL*, OH*, CR9AI*, ZC4CK*, PA0*, VQ8AY*, VU*, SM*, JA*, CE4AD*, PJ2AN*, YV5BE*, In, ON*, Bill 3TX: 4X4*, Lance 3ZA: SUICN*, PY5ETG*, VQ6LQ*, DU1VQ*, CP3CA*, DU7SV*, CT1JS*, and 457NX, PY8MO, VK1EG, VP8AZ, ZS2KX, EA8AY, FA8BT, KP4CC, VQ4RF, F93XK, GP4BQ, 3ZO, HB9*, YU*, F93Y, ZC7OJ, CN8PG, CN8BE, DJ1BZ, Alin 4SS: ZD2DCP*, ST2AR*, ZS1S*, FW8AB, YS10*, YU*, HK4DP*, HL2BA*, EIMS*, JZ0AG*, EA9DF*, EA3IV*, DL*, LU2MT*, LU1*, LU1SE*, LUSA*, ON*, CN8IN*, CN8HM*, CN8FG*, ET3LF*, CT3AB*, CT1DJ*, GM*, GI*, KP4YT*, KP4DW*, FA8CR*, FA8IH*, CE3RE*, CE4AD*, KC6AJ*, OE1USA*, OE1WB*, LA7X*, OZ1XX*, I*, CO5FL*, CO2WD*, CO2OE*, VS6DC*, VS6DB*, VS6CR*, VS1B*, DU1CV*, DU7SA*, G*, SM*, John 5HI: EA9DF*, ET2S*, HB9*, Ray 3RK: KA/JA*, F18BA*, Austin 5WO: OD5AI*, DJ1BZ*, IIAIV*, Ws*, Brian 6ZI: OH*, SM*, BERS195: CE1BD, CE3RE, DU1CV, DU1VQ, CN8IN, F18AP, F18BA, F08AM, KC6, KP4AZ, KW6BB, OQ5GU (2215z), PY1 ADA, KP1PG (0845z), VS1BJ, VS6CG, VS6CT, VU2CP, YV5AE, YV5AK, Dave Jenkin: VS6DC, 457LB, S2DW, OH, G, JA, GW, GM, CE3RE, VQ4AQ, DL, G14RY, ON, 457KH, CN8EB, LU6DJX, KP4BU, CO8DL, VQ8CB, VP, DU6SV, SM, 457NE, CE3DZ, CT3AB, F18BA, KR6, VU2MD, F7, CN8FG, ZS6AD, HB9, LU1CAG, AP57M, OH, VS6CW, CN8GA.

14 Mc. Phone: 2AHH: CE3QT*, YN1LB*, ZS2BC*, YK1A*, MPKAC*, VQ6AL*, ZS5JM*, VPTNG*, G*, VP2KM*, EA3TZ*, 457SS*, HB9*, YV5OE*, DU7SV*, 3V8BP*, 5A4TR*, CX5AF*, Stan 3TE: CT1HL*, CT1PK*, DL*, EA3JE*, EA7EM*, ET2MZ*, F9*, G*, HB9*, HC1KC*, I*, JA*, KA*, KA0J*, KM6*, KP6AK*, KV4BB*, LA5YE*, OE2DP*, OE13USA*, OD5AB*, OH*, OZ1PS*, OZ3TH*, PA0NU*, P11*, SM*, VE*, VS2BE*, VS2BE*, VU2RC*, XZ2OM*, YV5VE*, YV5EU*, 3V8BP*, 457*, 4X4BA*, 4X4GB*, Harold 3AHC: HP3FL*, DL*, CN8*, VR2*, TI2*, KP6AK*, I*, EA3*, KP4*, LU7*, CS3*, CX*, OH*, VU2*, MP4*, VS7*, KV4*, Gs*, KR6*, VS2*, 5HI: CO3JL*, CO1AF*, 5A4TR*, 5A4TX*,

VE*, EA3JE*, CT1PK*, DL*, YU*, HC1KC*, EA9AZ*, C3WV*, VR2CG*, Austin 5WO: GM*, G*, DU*, HZ1AB*, KA*, VU2*, JA*, KR6*, 457*, VS2*, ON4*, YU1*, KW0*, KG4*, VQ4*, HC1FG*, VY5*, DL*, OH*, Pat 7PM: XE2KW*, EA7DK*, VS1EB*, KR6*, ZS1SW*, CT1PK*, XZ2OM*, F48AK*, G*, CN8MM*, BERS195: KP4AZ, VS2CP, Jim Hunt: CW, GM, G6CFG, IS1BV, SM, HB9, OH, DL, 4X4AS, CT1CF, OH, OZ7BG, Y12AM, OZ3TH, SV0WO, OZ8GC, YU, PA0NU, P11, OE2DB, HZ1AB, MP4AC, OD5AB, 4X4DK, G, VS2BE, F18AO, 457YL, VU2RC, VU2FX, XZ2OM, VS2UW, VK1PG, ET2US, ZS6BV, ZS1SW, VQ4FK, VQ4AQ, ET2MZ, CX5AF, PY2AHS, CO2BL, KZ5DJ, KZ5PP, LU8OF, KP6AK, Dave Jenkin: O2A, PY5DP, CN8MS, VR2BK, VR2AS, G, YV5BE, ZD4EFC, CT1CL, OZ6BA, CT1CK, VS2EB, VS6BE, KR6.

21 Mc.: Austin 5WO QSOed on phone, HC1FS* and VS1FE*. Jim Hunt heard DL1VX, G3CHU, G3GKF, G3DQY, G3BJJ, G3TR, G3ABH, G5DF, G8CD, G8SY, 4X4AS, ZB1DK, CT1FX, F8LT, OE1WH, IIAIV, OD5AJ, HB9, YU, A13AO, VU2ET, VU2CW, VU2CY, VS1FE, VS6BE, VR2CG, JA, KA, KG6, KH6, DU7SV, HC1FS, HC1PL, Ws.

27-28 Mc.: Jim Hunt heard one W6.

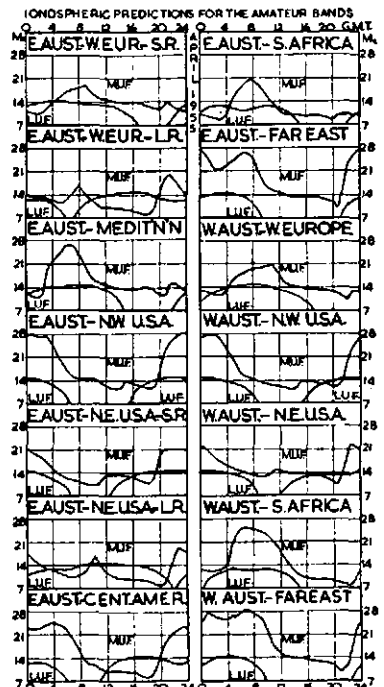
Rare Qs's were received by—2AHH: ZS7C, FB8BR, VP4IW, VP1NG, CX5AF, F43JY, VP2KM, 2AMB: ZC4IP (7 Mc.), 3KB: ZD6RD, 5WO: LA5YE, FA3ZH, CN8IB, F18BA, HB1PG, BERS195: DU7SV (3.5 Mc.), EA8DF, HB1MX/HE, IT1TAL, MP4KAC, OA4BN, VQ3CF, VQ4RF, 5A2FA, 954BE.

This month we say thank you to The Southern California DX Club and their Bulletin, and VKs 2QL, 2AHH, 2ANB, 3GU, 3HG, 3JA, 3KB, 3TE, 3TX, 3YS, 3ZA, 3ZO, 3AHC, 4SS, 5HI, 5RK, 6ZI, 7PM, and s.w.l.'s BERS195, Jim Hunt, and Dave Jenkin.

SUBSCRIPTIONS

● Please pay your Subscriptions PROMPTLY when due. Failure to do so may result in the loss of valuable issues of "Amateur Radio." High costs of production make it necessary to limit the number of extra copies printed each month.

PREDICTION CHART FOR APRIL, '55



† Hans J. Albrecht, 10 Belgravia Ave., Box Hill North, E.12, Vic.
* Call signs and prefixes worked.
z—zero time—G.M.T.

PRINCIPAL CHARACTERISTICS OF THE QQV03-20*

| HEATER | | Series | | Parallel | |
|--------|---------|--------|---------|----------|--|
| Vh | .. .. . | 12.6 | .. .. . | 6.3V | |
| Ih | .. .. . | 0.65 | .. .. . | 1.2A | |

CAPACITANCES

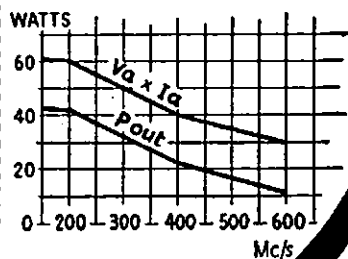
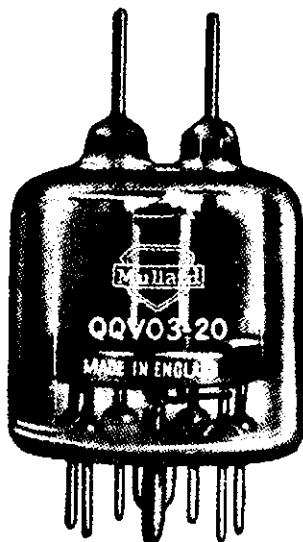
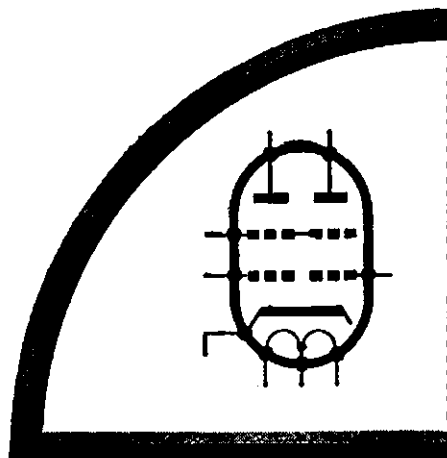
| | | | |
|---------------------------|---------|-----|------------------|
| Each Section | | | |
| cgl-all | .. .. . | 6.5 | $\mu\mu\text{F}$ |
| ca-all | .. .. . | 2.0 | $\mu\mu\text{F}$ |
| Two Sections in Push-Pull | | | |
| cout | .. .. . | 1.3 | $\mu\mu\text{F}$ |
| cin | .. .. . | 4.0 | $\mu\mu\text{F}$ |

LIMITING VALUES

As Class "C" push-pull amplifier for C.W. Telegraphy or for F.M.

| | | | |
|-----------------------------|---------|---------|------|
| Va max. | .. .. . | 600 | V |
| pa max. | .. .. . | 2 x 10 | W |
| Vg2 max. | .. .. . | 250 | V |
| pg2 max. | .. .. . | 2 x 2 | W |
| Vg1 max. | .. .. . | -75 | V |
| pg1 max. | .. .. . | 2 x 0.5 | W |
| Ik max. | .. .. . | 2 x 55 | mA |
| f max. (at reduced ratings) | .. .. . | 600 | Mc/s |

BASE B7A



*CV2799

A high performance Double Tetrode for the new U.H.F. wave-band allocations

Providing 15 watts output at 500 Mc/s, and with an effective upper frequency limit of 600 Mc/s, this new Mullard double tetrode, the QQV03-20, is an ideal valve for communications equipment designed to operate in the new U.H.F. wave-band allocations.

As a result of new and important design features, this valve has the outstanding advantages of high anode efficiency, excellent power gain, low filament consumption and small physical dimensions. In addition, being of conventional all glass technique, the QQV03-20 does

not require the complex and expensive circuitry that is normally associated with the disc-seal type of U.H.F. valves.

This double tetrode has special advantages in compact communications equipment, where, due to its small size and low filament consumption, it enables maximum savings in space to be made.

Brief technical details of the QQV03-20 are given above. More comprehensive information will be gladly supplied on request.

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INDUSTRIAL POWER VALVES AND RECTIFIERS—TELEVISION PICTURE TUBES—ELECTRONIC PHOTO-FLASH TUBES—HEARING AID VALVES—X-RAY TUBES AND ACCESSORIES—GEIGER COUNTER TUBES—CATHODE RAY TUBES—PHOTO CELLS—IMAGE CONVERTERS—RADIO RECEIVING AND TRANSMITTING VALVES—THYRATRONS—STABILISING AND VOLTAGE REFERENCE TUBES—ELECTROMETERS—COLD CATHODE TUBES—MEASURING INSTRUMENTS—SCIENTIFIC APPARATUS—RADIO RECEIVERS—COMMUNICATIONS EQUIPMENT—ULTRASONIC GENERATORS—PERMANENT MAGNETS—MAGNETIC MATERIALS AND COMPONENTS, ETC.

MR7-53



FIFTY MEGACYCLES AND ABOVE

NEW SOUTH WALES

The February fixture of the V.h.f. Group was a Direction Finding Field Day held on 19th. There were seven stations taking part, as well as several home stations. An area within 40 mile radius of Sydney was divided into defined localities which were balloted for. A station could operate anywhere within the boundaries of the area he drew. Scoring: Each station was allotted 20 points, to which were added 3 points for locating a station within a ¼ mile, 2 points within a ½ mile, 1 point within 1 mile, and points were deducted on the same scale if the station was located by another. This proved to be a very interesting event, the results being 2ANF 23 points, 2OA 22, 2AOA 20, 2HE, 2HL and 2AJZ 19, 2AZO 18.

On Thursday, 17th February, the 144 Mc. band was wide open in the Western-South Western section of N.S.W. and through to Northern and North-Western Victoria. To use Hugo's (2WH) words, "fantastic conditions existed." Contacts made included 2AJO-3CI 5 x 7 each way on phone, 2WH-3ATN 5 x 5 each on phone, 2WH-3CI, and 2WH heard 2AJO 5 x 5 on phone. The contact between 2WH at Forbes and 3ATN at Birchip took place between 2230 and 2252 hours, the distance being about 360 miles.

The March meeting of the Group took place at the Petersham Technical College, Crystal Street, Petersham, on Friday, 4th. The lecture for the evening was given by Mr. Noel Miller, 2AQH, on the detection and suppression of radio interference, which was a very interesting and entertaining discussion on power line and sundry other sources of electrical interference encountered throughout the State on the broadcast band. Noel expressed a theory which is being confirmed in practice that a large proportion of power leak noises are due to the bolts attaching insulators, cross arms, and stays on power lines becoming loose, thus allowing the potential gradient between the line and ground to vary.

Other items of business discussed at the meeting included a motion relating to the annual election of officers of the Group, and it is now the policy of the Group to hold its election of officers at the meeting following the annual meeting of the N.S.W. Division. This means that the officers for 1955-6 will be elected at the April meeting.

A letter was also received from the Divisional Secretary stating that holders of the Limited Licence were to be admitted to the Institute as full members.

The Field Day which was mentioned in last month's notes has been postponed until the end of April due to the Group taking part in a search and rescue exercise organised by this Division. This Field Day will now be the annual Autumn Field Day and will be on similar lines to the Spring Field Day last October. Full details will be given over 2WI and mailed to country members.

The mention of country members brings to mind the policy of the Group to keep the portion of the 144 Mc. band between 144 and 144.1 Mc. clear for country contacts. Country stations who try to contact Sydney are asked to use that portion of the band as that is where most attention is given when looking for signals from the country.—2APQ.

VICTORIA

Last month proved a really excellent one for 2 mx DX with practically every country station coming into Melbourne. The outstanding performance of the month was that of Ray 3ATN (Birchip) who worked Hugo 2WH (Forbes) on both c.w. and phone, the distance of this haul is approx. 350 miles. Another c.w. and phone contact came when 2WH worked Syd 3CI at Nagambie, a distance of 300 miles. Alan 3UI at Tatura and 2AJO at Coolamon also made a contact. 2ATN also heard Ron 3ZD at Warragul. Another first is reported this month in v.h.f. activity to Max 3BQ who made a contact with Don 2RS at Albury. This makes the first Melbourne to VK2 contact. Albert 3PG and Syd 3CI also worked 2RS and Arch 3BW heard 2RS, but no contact took place.

During the month also, 3ZL, 3SE and 3PO of Ballarat, 3ANQ Warrambol, 3AKR Westmere, 3AGD Dunkeld, 3ATN Birchip, 3DI Leonagatha, 3CI Nagambie, 3UI Tatura, 3HG Coleraine and 7LZ were all heard in Melbourne at Q5. 3BQ heard 7LZ although the Launceston to Melbourne D.C.A. beacon was breaking through. On the Fox Hunt last month, Bill 3ZAC and Bob 3OJ acted as control stations. Many thanks Bill and Bob. The Fox was successful on the first run, but on the second run bottled himself up by waiting for the Williamstown ferry which had closed down for the evening two hours previously, and on the run back along Williamstown Road was caught by Norm Dench and Ray 3KD. On the third run, 3VZ was first.

The final location was at the home of Graeme, 3ZAA, where twenty-five of the Group rounded off the evening with supper and a post mortem on the doings of the evening. We wish to thank Graeme and Joan for their friendly hospitality in opening their home to us. We welcome to the Hunt for the first time Max 3ZAW, Ray 3ZAE and also Ray 3KD.

The V.h.f. Group wish to extend to Max 3BQ their best wishes on the 30th Anniversary, which occurred during the month of his first spanning the Pacific with radio signals. Max is the most active v.h.f. worker on the band in VK3.

At last month's v.h.f. meeting, Hans 3AHH gave an extremely interesting lecture on "Electronics in Meteorology" to a capacity house. Hans went to a very great amount of trouble in preparing the lecture and even when 11.30 came around, Hans still had a considerable amount of material which he was unable to give us. It is a long time since one lecturer has been able to hold the interest of the meeting for 3½ hours straight. It was a most enthusiastic audience who passed a vote of thanks to Hans at the conclusion.

The second V.h.f. Field Day for the year was a very successful one with over 40 of the gang taking part. This is the largest number of portables to take the field in the past three years. There was intense activity during the whole afternoon, several of the stations reporting over 20 contacts. Some of the best contacts were 3UI at Mt. Hickey to 2RS at Albury, 3ATN at Birchip to 3ALW on Pretty Sally Hill, and 3GK on Churchill Island to 3LN on Mt. Macedon. Alf 3IE, who on one wait on Mt. Dandenong, has some very excellent contacts. The weather was very delightful on all the mountain tops and the Field Day proved a most enjoyable one for all those who participated.

A very hearty welcome to Amateur Radio is extended to Neil Town, 3ZAT, who has just received his call sign. We will be looking forward to hearing your call from Montrose, Nell.—3LN.

SOUTH AUSTRALIA

You know how it is chaps, holidays and domesticity before all else and before you know where you are, another month has shot by and, well, I could go on for ever. Of course there has been great glee in the sub-editorial household and I'll never be allowed to forget my sub-sub-editorial lapse.

However, I haven't been unoccupied and I have some more details of the so-called "Butler overtone oscillator" (or if you like, cathode-coupled oscillator) for you. It certainly is one of the easiest to get going and the power output can be increased by making the cathode resistors much greater in value than 470 ohms. When using a 12AT7, with output on the ninth overtone, there is hardly enough to drive a double-beam tetrode into class B. There is plenty of output for the mixer stage in a xtal converter though, and the 7th overtone doubled again in the second half of the 12AT7 is quite feasible. The second disadvantage is a serious one and it can easily be missed. The xtal holder provides sufficient capacitive feedback to take control as a type of "cathode-coupled cum Franklin" self excited oscillator, with maximum oscillation appearing at widely spaced frequencies. Under these circumstances the xtal does not effectively "lock" the frequency. The cure is effected by paralleling the xtal holder with a coil which resonates on a frequency just a little lower than the overtone required. This provides an inductive reactance and very little energy can get "around" the xtal. The coil must be phased correctly so that it does not accept energy from the plate circuits.

A recent copy of "CQ" gives further details and I found the A.R.R.L. Handbook (1953 Edition) lists the circuit in the v.h.f. section.

As Warwick has used the only notes concerning the v.h.f. activity in the S.E. area, I shall merely thank Stewart 5MS for forwarding them. Further northwards in Narracorte the enthusiasm is mounting and Bram Jellett now has his L.A.O.C.P. and call sign. Congrats Bram: perhaps you can entice Wally to enter into competition! A xtal converter should work beautifully in front of that "750".

Heading north into the rain-stricken areas, Tom 5TL has now settled into Alice Springs and has hopes of getting back on 2 mx. It will take less time to build that converter Tom. What about a flip on 6 mx? Even an 807 will perform well there.—5KU.

WESTERN AUSTRALIA

50 Mc.: A few stalwarts still keeping the flag flying. 6BO, 6CC and 6GB have been putting in an appearance on occasions. Still little or no activity from 6HK. I must fix that feeder! 6SJ has been fairly quiet on 6 mx, but plotting great things for 7 mx.

144 Mc.: Still the band of greatest activity so far as yours truly is concerned. No new calls

issued to report this month, but some of the yet-to-be active types are showing signs of progress. 6ZAS now has a beam up at 25 ft., and the rx seems to be perking as well as an AR301 can be expected to perk. The tx is under way and an RK34 has been assigned the duty of p.a. 6ZAQ threatens activity by "21st August at 8 p.m."—Isn't it David? Anyway something may even have been heard from that direction by the time this appears in print.

6ZAV was treated to an invasion the other night when 6SJ, 6WJ, 6ZAZ, 6ZAQ, 6ZAS and 6HK all rolled up unexpectedly. However, after initial surprise was overcome, a fine evening was had by all. Thanks Don! This, by the way, after the gang had visited 6ZAZ's shack.

6ZAA has been plotting a spot of portable activity during lunch hours some time in March—more to report there later. Via 6ZAA comes news of activity in Kalgoorlie from 6ZAB.

Howard at the moment has no one to work, but has run tests with himself—so to speak—by leaving the tx running at home and rallying forth in the car with the rx. The tx is 6N7/832 m.o.p.a. with a superregen with r.f. stage as rx. It is hoped to "xtalise" the gen before long and then perhaps arrange tests with 6DW in Bruce Rock if possible. So there you are DWI! 6ZAK spends quite a lot of time just listening, with the tx in pieces awaiting re-build. 6ZAT should have finished N.S.T. by now, so may have a little more time to chase drive to the 815. 6ZAE, and likewise 6ZAR, both have some considerable time to go with the aforementioned N.S.T. and activity is therefore at a very low ebb.

288 Mc.: Signs of activity on one metre have been stirring again. 6ZAV has a very neat mod. osc. superregen set-up for the band and recently contacted 6BO over two or three miles with good signals. Tests with 6ZAA at 14 miles proved negative however. Wally has been endeavouring to put a stabilised transmission on the band, but eventually resorted to a s.e.o. Have you found the right metre yet Wally?—6HK.

NEW GUINEA

Conditions on 50 Mc. from Port Moresby during December, 1954, were very poor, with several stations heard, but not worked, namely 6HK, 6BO, 2ADT, 4NG and 4WD. After the New Year, things looked up a little allowing daily contacts with 4NG, 4WD and 4LK, but no other VKs. The ZLs broke through one afternoon only and 10 ZL1, ZL2 were worked before the band closed for good. Nothing else heard. Chased VE2CG daily, but not even a weak carrier, even when he was working 4NG at 5 x 9. m still using same xtal converter and running 25w. to 832, but now have the 4 el. w.s. beam at 50 ft. instead of 20 ft.

Both Frank 9FN and myself are interested in working into VK on 2 mx. We both have gear going and will be ready by next Xmas to run checks with northern VK4 areas. If such can be arranged, I intend taking the SCR522 to Burn's Peak—close on 1,000 ft.—overlooking the sea to the South and setting up a 16 el. beam.

The D.C.A. G/A v.h.f. on 118 Mc. from this site works aircraft to almost 200 miles consistently with input power below the Amateur limit and merely a ground plane antenna. Truly, the aircraft are usually at 5,000 to 7,000 ft., but likewise their antenna system is low to nil gain. With antenna gains of 14 to 16 db at both ends of such a circuit, the signals would be terrific. The above performance is a normal condition unassisted by the vagaries of propagation conditions and it gives some indication of the Amateur possibilities of spanning the Coral Sea on 2 mx under those rare, but favourable, conditions.

Would like to hear from anyone interested in the above, together with their opinions as I can't claim any experience on 144 Mc., my greatest DX being QSOs with 9FN about 1 mile distant.—9DB.

WIRELESS INSTITUTE OF AUS.

(N.S.W. DIVISION)

Box 1734, G.P.O., Sydney

A.O.C.P. CLASS

The next A.O.C.P. Class will commence on 23rd April, 1955, and all intending Amateurs are requested to contact the above address.

Radio Theory and Morse Code instruction. Duration of class is six months. Fees moderate.



FEDERAL N.S.W. FLOODS

Although the full story is not yet known and it will be some time before full details are available, the time is appropriate to record a word of thanks to the many Amateurs who rendered such valuable service during the recent Flood Emergency in New South Wales.

One of the striking features was how smoothly the emergency net went into operation and congratulations are therefore due to those responsible for its organisation.

In view of the fine work achieved, it seems a pity that this has led to a public expression of various viewpoints which would have been better handled through Divisional and Federal Administrative channels. Federal Executive is always conscious of its duties of representing the Federal Council when dealing with the appropriate administrations in regard to protecting the interests and presenting the Amateurs' point of view.

VK9 PAPUA AND NEW GUINEA DIVISION

Federal Executive is pleased to announce that following a vote of Federal Council, steps are being taken to complete the necessary Constitutional changes for the final implementation of the Papua and New Guinea Division.

Executive is sure that all will join with them in welcoming this new Division to the Institute. With such an enthusiastic band as Frank Nolan, VK9FN; Doug Beadel, VK9DB, and others at the helm it is certain that the Division will go from strength to strength.

The local people are most generous in the support of the local Amateurs, as the following example illustrates. During the hook-up on 7 Mc. on Sunday, the Wau members suggested that the "Teenagers" might form a club. Within 10 minutes, donations of a transceiver, batteries and some £13 in cash had been received, and all from local people who listened to the hook-up. Apart from this, club rooms, complete with free light and power, will be provided by the Wau citizens.

With such understanding and assistance from the people about, one can be certain that the new Papua and New Guinea Division will be a splendid adjunct to the Wireless Institute of Australia.

AMATEUR ADMINISTRATION APPOINTMENT

Federal Executive and members will wish to congratulate Mr. L. Pearson on his nomination to the position of Controller Radio Branch.

Mr. Pearson's long association with the Department has given him an insight into the administration of the Amateur Services and as he himself is an active Amateur, he has a personal understanding of our problems.

He follows a worthy line of predecessors in Mr. J. Malone and Mr. J. Martin, all of whom have been most helpful to the Institute. We wish Mr. Pearson a long term of office and hope that the cordial relationships will exist as previously.

O.B.E. TO MR. MALONE

Mr. J. Malone, one time Chief Inspector (Wireless) and more recently chairman of the O.T.C., has received a well merited award of the O.B.E. We congratulate Mr. Malone and feel sure that all members join with us in expressing these sentiments.

ANOTHER O.B.E.

Another O.B.E. award of interest to Amateurs generally is that of one to Mr. J. Clarricoats, General Secretary of the Radio Society of Great Britain. Mr. Clarricoats has held this secretarial position for the past 25 years and the Wireless Institute of Australia sends heartiest congratulations.

FED. CONTEST COMMITTEE

The Committee acknowledges receipt of the following logs for the Ross Hull Contest:—

VKs 2ABC, 2HE, 2ZX, 3KC, 3XK, 3YS, 3ZL, 4CG, 4MT, 4NG, 4WD, 5AX, 5JO, 5MK, 5QR, 5ZL, 6BO, 7LZ, 2Ls 1BJ, 2ADO, 2AGD, 2DS, 3RZ, and VR2CG.

A quick perusal shows that more than 110 VKs and more than 40 ZL stations participated. VK9DB and VR2CG added interest.

FEDERAL QSL BUREAU

RAY JONES, VK3RJ, MANAGER

Bill Storer, VK1EG, was scheduled to QRT at Mawson on February 11 according to Roy VK4FJ. The itinerary then was to proceed to

Heard Island to assist in packing up, thence to Kerguelen for fuel and water, and homeward bound. Confirmations for 53 countries of the 111 worked had arrived by February 5, but the wads I have since despatched should make the total much higher. No news has been heard of VK1EM or any of the other "abominable snow men" since their departure.

Melbourne Amateurs were delighted to meet Bill Baird, W2CPN, but better known as W9RCQ of the immediate pre-war years. Bill was a "power" in the land in those days running a kw. on all bands. His stay in Melbourne is likely to last until the end of March and he has taken the opportunity to attend the March meeting of the VK3 Division and also take part in the hidden tx hunt conducted by the V.h.f. Group. He is returning to the States by air via Singapore, Rome and other European spots. His business interests which brings him to our fair country are connected with thin plastic containers for the packaging of food stuffs. My suggestion to him that the field of plastic sausage casings had not yet been exploited, was not received with much enthusiasm.

Mike XZ2OM, in forwarding a batch of cards bemoans the poor response from VK stations and to this end only sends cards to those received. His outstanding list includes VK2s, VK3s, VK4s, VK5s, VK6s, and VK9s. His full QTH is F/Lt. Aung Myint, XZ2OM, Burma Air Force, C/o. P.O. Box 1490, Rangoon, Burma. He is always willing to oblige any VK station needing an XZ contact.

Prof. Rufino Gae Sacasa, of Madrid, Spain, has published charts and a booklet containing a new technique in predicting optimum traffic frequencies for distances from 100 to 1300 kilometres in all the world. Prices are: (1) 5 nomograms (model for teaching) and booklet, £1/18/- Sterling; (2) 5 nomograms in plastic and booklet, £10 Sterling. He may be contacted at El Encinar 10, Madrid, or through the U.R.E., Apartado 220, Madrid, Spain.

The QSL Manager for Sicily is Domenico Marino, IT1TAI, Box 300, Palermo, Sicily. His call sign is often heard on 7 Mc. c.w.

In a recent QSL to Eric BERS195, Kurt, of HBIMX/HE, states that he works from the rare country of Leichtenstein every week-end on the 80/40/20/15 mx bands on both c.w. and phone and seeks contacts with VK and ZL stations. He QSLs 100 per cent.

Roy Arnel, Ex-VK1RR, Macquarie Island, who is now a marine radio officer, was in Gladstone, Qld., early in 1955. His stay was very short and the Norwegian tanker on which he is aboard then left for Panama and Europe. In a brief note to a friend in Melbourne, Roy said he hopes to get his discharge from the tanker later this year, after which he intends to return to VK with an eye on another visit to the Antarctic. He further stated that he did not send out any QSL cards for VK1RR, but will do so after his return to this country.

NEW SOUTH WALES

The February meeting of the Wireless Institute (N.S.W. Division) was held at Science House, Gloucester Street, Sydney, on 25th February, 1955. The President, Jim Corbin, 2YC, took the chair a little late, owing to the Emergency which had arisen that day, and apologised for the late start.

A visitor in ex-ZS6AEV was welcomed by the meeting prior to the minutes being read by the Secretary, Harry 2ACH. Eleven new members were then admitted by the meeting.

The cancellation of the Picnic, arranged for the following Sunday at Sutherland was announced, the weather and the Flood Emergency being the contributing factors.

It is hoped that a Film Night will be arranged in the immediate future and details of the meeting at which this will be held will be given over VK2WI. Ladies will be welcome.

An Emergency Exercise was discussed and arranged, both 7 and 144 Mc. equipment will be used to form a link with the assistance of the Bushwalkers' Club of N.S.W., in an endeavour to assist in the location of lost persons. The whole scheme was outlined to the meeting and it was arranged to take place on 13th March, 1955.

An interesting lecture was given by Barry Goodman, VK2ZAG, on V.h.f. Antennae Theory, Design and Practice. Barry presented his lecture in a most interesting manner and illustrated it with charts which made his points clear to all. General antennae theory, matching and transmission lines were dealt with during the course of the lecture. A vote of thanks was tendered by Frank 2QL to Barry for his effort.

The President then outlined the procedure to be adopted by participating stations under Emergency conditions and stressed the importance of operators contacting VK2WI and getting in touch with the local Police to offer services, the question of gear to be designed was discussed, stressing the desirability of some standardisation of gear.

The Class Secretary announced that a new A.O.C.P. Class will commence on 23/4/55. Tuition includes radio theory, covering all aspects of radio, and competent instruction in Morse code. Those interested should contact the Class Manager, Box 1734, G.P.O., Sydney.

The next meeting of the Division will be held on 25/4/55 at Science House, Gloucester St., Sydney. All are welcome.

ZONE NOTES

Hunter Branch.—Eighteen members and visitors attended the February meeting of the Hunter Branch at the Tighes Hill Technical College on 11th February. Two films were shown, entitled "Scientists in the Antarctic" and Turbo Jet Propulsion, these in turn being followed by a lecture given by Max Soebels, 2OT, who used a Patten generator to describe and illustrate the checking of linearity in t.v. receiver. Preparations are being made by some of the Hunter Branch members to go to the Urunga Convention at Easter, those expected to attend being Harold 2AHA, Bill 2XT, Les 2AOR, and Bob Bailey.

Many stations in the area have been operating in the Flood Emergency which is still operating as this is written.

The official station of the Hunter Branch, VK2AWX, is to be heard each Monday at 8 p.m. on approx. 7095 Kc. with full information regarding all Branch activities. The April meeting will be held on 8/4/55 at 8 p.m. at the Tighes Hill Technical College.

Zone Officer Noel 2AHH, of Kempsey, reports that there is little to report from the North Coast area this month, most of the operators being busy at this time. Definite bookings at Urunga have been made by VKAs DU, ALQ and AID, which brings us to the reminder that any of you who intend to attend Urunga should contact the organisers at once and reserve accommodation for what will be a bumper week-end. ZAHN has been on holidays at Fort Macquarie recently. ZZX soon to travel to Sydney for a rest, has had 2AWY from Orange on holidays at Inverell.

The N.S.W. Amateur Radio Co-operative is off to a good start and subscriptions are coming in at a steady rate. However, it is hoped that more of our members will send in their money to enable the board to commence on their programme and find a home for VK2WI in the near future. All communications should be addressed to the Secretary, N.S.W. Amateur Radio Co-operative, Box 1734, G.P.O., Sydney.

Busiest man in the Western Suburbs, indeed, probably in any Sydney suburb, is Chas 2AWQ, of Russell Lea. Surprising how few know there is such a suburb in Sydney. It is in the Rodd Point area. Chas is very active on 40 and can be heard working well after midnight. His shack, according to my spy, is probably the smallest, tidiest, and well-equipped as anywhere. It is built inside the garage at the rear end, sound-proof, and all the wiring is concealed behind the walls. Here Chas often does the Sunday morning broadcast for VK2WI, keeps informed on 2 mx activities, 20, 40 and 80 mx. Chas also has 40 and 2 mx portables for his car. His other activities are W.I.A. Councillor, assists Disposals Committee, Secretary of the N.S.W. Amateur Radio Co-operative Ltd., assists in the compiling and printing of the "Bulletin," and the compiling of the W.I.A. broadcast. Yes, a very keen young man, but Chas would be the first to admit he is not the only busy bee and acknowledge the willing co-operation of the keen young Councillors and members of W.I.A.

Congratulations, President Jim Corbin, on your efforts to infuse new blood in W.I.A. affairs. Congrats also to Les, Fag 2LP, who entered upon the state of matrimony on 5th February last. Les expects to be on 2 mx from his location at St. Ives before very long.

Welcome to the bands Ken Squires, 2SD, and congratulations on gaining the A.O.C.P. after only six months tuition at the W.I.A. Class and valuable help on c.w. by Andy 2AX. Ken was soon on 40 mx with a good signal from a temporary AT5 tx. His big rig is well on the way. Bob 2AVQ, back from holidays, was soon busy on the air, fixed up a new mast, changed his battery operated g.d.o. to a.c., did a little more work on his 2 mx converter. Indisposition has prevented 2NO from taking part in any Amateur Radio activity of late, and the two-thirds completed 2 mx rig remains on the stocks for the time being.

VK2 AMATEURS

President and Council of the N.S.W. Division W.I.A. wish to congratulate all Amateurs who took part in the recent Flood Emergency in N.S.W. To serve one's State and fellow citizens is the highest ideal of all, and the W.I.A. and its members accepted with eagerness another opportunity to serve in this capacity.

Every call on Amateur Radio was met quickly and efficiently, and the status of the Amateur and its organisation, the W.I.A., has risen considerably.

The report of the flood will be in our next issue; for now, congratulations OMs. You were wonderful.—VK2WI.

Most of the activities of some of the more distant of our members have been hidden behind conditions, but from our spies we hear that 2AYS has been busy at Broken Hill, 2ALL still working the DX and now has a cubical quad in the air. 2DQ still plays with s.s.b. on 14 Mc. 2DX at Mackville lost his beam again we hear from 2FM who was up that way recently.

We still require more notes each month and I take this opportunity to thank those who have helped out this year and hope that in the coming year that conditions will permit more activity.

Stewart 2PL reports that Brian Harriman and George Jones have passed their A.O.C.P. and are now awaiting their Limited licence. I hope you boys get that 2 mx gear working soon, congrats on the ticket. Keith 2ZAA at Tumut is having good contacts on 144 Mc. to Sydney. Don 2RS at Albury is building a new tower to erect 14 and 144 Mc. beams; should be able to get that signal through to Coolamon then Don. Lyn 2AQE has acquired a new home in Wagga so we should soon hear from him from the new QTH. 144 Mc. will be the band of operation, so the v.h.f. gang should turn their beams through Wagga. News from Coolamon should get better now as more interest is being shown in operation on the "Old Man's Band."

Late news is that Alf 2BW and his XYL paid a visit to Griffith and spent a pleasant afternoon with 2PL last Sunday. Ted 2AXD at Griffith is building a new rig; hope to hear you on the air soon again.

VICTORIA

The March meeting of the biggest and best Division was held on 2/3/53 at the M.T.C. Before the show started, there was standing room only. The President 3TF opened proceedings and after welcoming our visitors, including W2CPN, very quickly dealt with the few items of business needing attention.

Our new members for the month are R. S. Beckett, 3WV; W. Butement, 3AD; and Associate T. K. Robb. My apologies for any misspelt names and a hearty welcome to the W.I.A. Don't forget to come to the meetings.

The main interest for the night was the films, for which we are indebted to 3EG. "Blue Ice," a coloured film on Antarctica, and the 1954 Redex Trial with a couple of others for good measure were enjoyed by all.

The next meeting, Wednesday, April 6, is the month of poor attendances. To wit, Annual Meeting. Who will ask the awkward questions this year? Come along and find out!

Due to the state of emergency in VK2, the National Field Day was postponed to a date to be announced. Let us hope the weather holds good until it is over and that there will be a few more starters. As is my custom, I have a grouch. Why must we go five miles from home? Why are all the best locations only 4½ miles away? As from now, I'm starting a campaign to have the distance reduced to ¼ mile, and Pansy had better be on my side—or else! Anyhow, that is quite far enough to push a bicycle, especially when it is loaded down with a day's rations, a Type 3 and accumulators.

The Victorian Division congratulates the VK2 boys on their magnificent work during the recent floods. They more than deserve the commendations that will be passed to them from all directions. To all those thoughtless types who caused them needless QRM, a special

award of a wooden spoon should be granted. If somebody will supply the spoons, there should be little difficulty in compiling a list of the culprits. May I suggest that on future occasions, if you are in doubt about emergency traffic, you stay off the air entirely. In other words, "if you can't help, don't hinder."

At last I believe it Single sideband can be copied. Thanks to Jack 3WR, who is using this system, I've been able to have a little practice. It's not so difficult when you know how. What does sound interesting is the application of the principles involved to a.m. rx design. What about an article for the magazine when you get it going Jack?

Does anyone know what a Coulomb is? You don't? Well ask Mrs. 3LN and be baffled with science. There is no holding Phyl now. Len offered to call and pick her up after the W.I.A. classes, but the offer was declined. Watch out Len, or you will become a permanent baby sitter. Your rig is as good as gone already. Tell me Sir, does she contemplate entering tx hunts against you or is the team to remain intact?

Now here is a gem of a story about two prominent v.h.f. men. It appears they were stationed on a couple of mountains about five miles apart, trying to make contact on 2 mx. For some reason or other, no dice, so they resorted to c.w.—on their headlights, 2 mx bah!

At last my VK5 spies are earning their money. Now have all the gen on their cricket match. I'd like to have words about the wicket keeper the phone boys had, but in the photo I have, 5UX is right behind him. Now this 5UX appears about 6 ft. 6 in. tall and must weigh 18 stone at least. If he is on Pansy's side, I'd better soft pedal on the subject. Did hear that our worthy 5FS did a good job, but after carefully studying the photo, it is obvious that a ball would have to be more than "wide" to clear the portly chap. Next year he is acting as the sight screen, at least so I hear.

Listening round the bands for personal items I glean 3YE contemplating a new rig and looking for ideas, 3AJL trying his re-built modulator; appears it refused to work when unpacked. 3ALK has been presented with another son; plans to train them all to keep a 24 hour vigil for the rare DX or operate right through the R.D. Contest, 3AHC is finding it harder to get new countries. Can see that 15 watts being jacked up somewhat. He claims he nearly lost the new tower and beam when the helicopter went his way. Should have had him round a week or two earlier and had him place the beam in position for you Harold. 3SO is back on the air after spending a couple of months in hospital. One of the first QSOs was with 3ATK and they got to reminiscing on their Service days. The QSO finished at Max's QTH.

3WL and 3WM still seem to manage to raise the DX. At least they are heard calling them. The 6 mx gang has dissolved or gone into smoke or something. What is it? No DX, no activity? More cannot be said, except it is a good band for local contacts. Alright so is 2 mx, but will somebody please tell me why 2 mx is used all the year and not 6 mx? The ball is now in the v.h.f. scribe's corner. 3ALO is expected to make a come-back in the near future, at least a new rig is under construction. 3AMZ has acquired a BC348 and Geloso v.f.o. and has gone DX happy.

80 MX TRANSMITTER HUNT

Forty-seven attended the hunt in spite of the thunder storms and heavy rains which prevailed. However, the bad weather didn't make very much difference to the actual hunt as most of the competitors eventually found their way to the location of the hidden tx. On this occasion it was hidden by Reg 3ZAD and Barry 3JB. Prior to the hunt, Reg had done some much needed repairs to the keying wheel which now sends a far clearer signal. The tx was hidden at Pound Bend, near Warrandyte, and was located under some dense scrub at the base of a 30 ft. pine tree, which supported the antenna. The winners, Jack 3VZ and Alf 3IE, took one hour and eighteen minutes to find it. Second place went to Laurie 3ALY, one minute behind the winners.

CENTRAL WESTERN ZONE

Must thank Chas for writing the notes last month while I was on my annual leave. Trev. 3ATR and his XYL are on a cruise up north, so hope the weather treats you OK. On arriving home, found that clippers and razor had been at work after a long holiday. Yes, Chas' beard was missing; think it may have been his XYL who encouraged him to take this drastic action. It certainly has made him look his old self again. Sorry chaps that these notes are so skimpy, but hope to have something better next month.

NORTH EASTERN ZONE

Jim 3JK now has two new things, a car and a signal on 2 mx, to keep Murdoch Ave. in

the news, while Jack 3AKC represented them on the February hook-up. Bruce 3QC is now on 40 and 80 mx. Moving further afield, Howard 3YV would like any Amateurs passing through Wangaratta to call at 14 Reid Street and pass the time of day with him and Bruce. Henry 3HP is quite active in his various fields. Des 3EP was away on holidays when last heard of, and Ron 3AQQ was thought to be getting used to the recently connected a.c. power. Col 3WQ is another very active in more than one field, while Jack 3PF is not quite so fortunate regarding Radio, but Len 3AIL is having an interesting time, and Ken 3KR reports a good QSO with Doug, now 7LJ, on 40 mx recently. Unfortunately, Hugh 3AHE had already set up other plans when the zone hook-up was announced, and for the moment, Vic 3ABX is missing.

3CO is not quite sure yet that he will be leaving the district. Syd 3CI has quite an elaborate 2 mx antenna as his latest effort. Alan 3UI is putting the finishing touches on his mobile v.b.f. rig.

The monthly hook-up of the North Eastern Zone has been changed to 1330 hours on 3700 Kc. on the last Sunday in each month.

EASTERN ZONE

The February meeting was held at the home of Alf Mackrell. There was only a small number present due to a misunderstanding as to the date it was to be held. In future we will keep to the third Friday to avoid any further confusion. Several stations have been heard calling Lew 3AZC of late so it would appear he is active now. Ossie 3AHK is complaining of conditions on 14 Mc., but he has not got that on his own. Visitors to the zone recently were Russell 3SX, on one of his business trips; also Harry 2L4JA and Rod 2L4MY came through these parts on the last leg of a 7,000 mile hitch-hike around VK. Alf has arranged for accommodation at Warrigal Creek Station on the zone field day, to be held this month. There has been a move by some members to change the name of the club, but nothing final as yet. The March meeting was held at Maffra when some films were screened.

QUEENSLAND

If by this date you haven't paid your dues you are now unfinancial. You must be financial to receive "A.R." and other Institute matters.

The Annual General Meeting will be held on Friday, 1st April, and the Annual Dinner on Saturday, 2nd April, at 6.30 p.m. at Anzac Club.

The Downs Group are convening a Convention at Palm Beach on the long week-end of May Day. The Council hopes every member possible will support this enterprise. They are donating sundry pieces of gear to them to be used as prizes. It's to be hoped the Group get the support they deserve and it is hoped that it may be one day an annual Divisional affair.

The Listeners' Group got away to a fine start with some thirty or so enthusiasts at the initial meeting. With the promise of gear, rent and assistance from members of the Division, the Group should become quite an active adjunct to the Division, if enthusiasm is a guide.

February meeting opened with some very entertaining films by Ernie 4GE. He promises another lot for next meeting. The attendance was very poor, as usual, only enough members present to make a quorum. To those who want a reminder, the time is 8 p.m. on the fourth Friday of the month, the place is the Royal Geographical Society, Ann Street, so what say we see you a little more often in the next year.

Response to the call for new Councillors was very poor, having received only three new nominations. So it looks as if we are stuck with most of the old crew once more. It's a pity as I think most members should take their turn at the helm of the Division and then they won't be so keen on the criticism of Council's actions which is usually the members' own lack of activity in the Division the cause of all complaints.

Well chaps here's hoping for better conditions, more activity and a stronger Division, and seeing you at the Annual Meeting and Dinner.

VK9 BRANCH

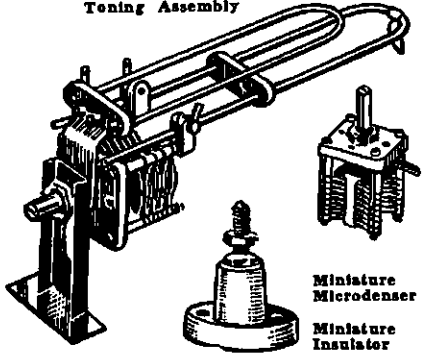
By the time these notes reach the press, the VK9 Branch may well have blossomed into the VK9 Division, and thereby making the cover of the Call Book a little more accurate. At the time of writing we are awaiting only the green light from Federal Executive.

These being the initial notes from this area, I would like to take this opportunity, on behalf of the VK9 Branch Committee, of thanking each and every member for the splendid support offered in enabling the Branch and ultimately, the Division, to be born, and I feel sure that this fine spirit will continue, keeping the Division to the fore in all future activities.

The call of the Future...

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Suitable Conversion "WILLIAMSON" to U.L.
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Leakage Inductance:
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Prim./Sec.: 15 mH. maximum.

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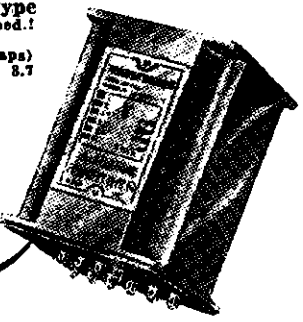
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ALL IN NEW COLOUR



LOOK FOR THE SILVER-GREY TRANSFORMER

Our membership of just on 100 per cent. of the current licenses is also an enviable attribute, and maintaining this figure requires no more than the spirit of friendship and co-operation that presently abounds.

The 7080 Kc. hook-up on Sunday mornings has been quite successful, the conditions normally allowing the most distant—as well as the nearer stations—to participate with good to excellent signal strengths. All in all, a large percentage join in and the net is fast developing into a pleasant Sunday morning interlude, provided Moresby has its QRM machines switched off. What say Frank?

And now for a four round the Islands to briefly meet some of the gang: Our only guardian at Samarai, Doug 9DT, has been in the net, mostly on c.w., but recently on phone. At Rabaul, Bill 9BW and Bob 9BS always appear to be working the same DX, but as they are almost side by side it has to be that way. Quite a few DX QSLs have turned up for you both, Bill 9BW does a tremendous job with his 4 watts. Occasionally Ron 9RG is available when not moving around the plantations. What about a portable rig? John 9KT recently put the rig back together. The Rev. Father Carl, 9YT (at Lamason), is still on a lengthy sojourn in the States. Harry 9HO, at Kavieng, has been suffering transformer troubles, though he is heard from Peter 9FP. Over to Keith 9EB at Lae; interested in your 50 Mc. plans—particularly the airborne mobile we were discussing. Arch 9CB, having returned from leave, has settled in and got things chooing.

From Madang, Carl 9CS advises that his duties exclude him from the net. Thanks for the letter Carl, all understood. At Wewak, Roy 9AU must have been thrashing the 20 mx DX during 1954 as I have a stack of QSLs off the last boat and about 90 per cent. are yours. Also Chas 9CR owns a few of the cards, guess this Wewak must have something. Don 9DS is as rare as a CT4; what about switching on the Geloso with the all-band final DQ? The thing must work because I have several cards to prove it! Frank 9WZ (at Momote (F/Sgt. to you) not heard of late and may have returned to a lower VK call area by this (numerically I mean!). Both Peter 9RM and Ron 9RC (at Wau) having their share of trouble lately, but who isn't?

Back in Moresby there is Alf 9AB, who has a nice rig, but says he's too busy to get on. Morrie 9MT has threatened to get on for years, but hasn't yet made it. Chas 9WG occasionally makes the grade, but not often enough. What about it Chas? Get into practice for the next R.D. Contest; we'll open the VK5 eyes this year! Frank 9FN gets on as frequently as possible and heard chasing DX at times—of all things! Frank had plans for beams and 6 mx gear, but the new son seems to have the upper hand up there. Reg 9SP was in Moresby for a while from Omati, met him several times and heard him on the air from Badili, but not so of late. George 9GV is at present residing in Moresby.

Doug 9OQ recently joined our ranks from VK2 and I wish him, on behalf of the VK5 gang, a pleasant stay in the tropics and good hunting in the year ahead. Doug is just completing the rig and should be on the air any day. (For the information of Geoff 2AVW (ex-9CW) Doug moved in where you moved out.) Reg 9ZAL, our only limited license holder, is still working on that 2 mx gear up there on Paga Hill. Both 9FN and myself are ready to test when you are Reg. Les 9HI at present on leave in VK proper, and trust he is having a right royal time. Talking of leave, yours truly happens to be writing these notes on board the M.V. "Bulolo" on the way to VK2 on leave, but I'm not complaining. My activities have been gratifying, also keep a watch on 21 Mc. Incidentally, 9BW is the only other VK9 I've heard on this band. Was rather disgusted with 6 mx conditions this year, but better luck next time.

Well fellows, I've made a start on these notes and to keep them going would appreciate any items of interest from the gang, particularly with regard to activity or contemplated activity on v.h.f. bands, etc. Regards to all.—9DB.

SOUTH AUSTRALIA

The Annual General Meeting of the VK5 Division (known as the Division which has what it takes!) was held in the club rooms to a large audience. I cannot help but notice the increased interest of the members of the Division in the business of the Division, an increasing interest that is good to see and one that will keep us in a healthy condition as long as it continues. It is a little difficult to write anything about an annual general meeting because every meeting of this type runs strictly to pattern and are the same as those of twenty years ago. The general business of the night was opened by a general discussion on a pro-

posed amendment to the constitution which would permit, at a future date, the acceptance of the holder of a Limited A.O.C.P. into the Division as a full member. The amendment was passed unanimously. Jim 5JK then brought up for discussion the matter of Civil Defence Emergency Networks, and the matter was eventually put back into the lap of Council for further discussion.

Doual 5BY then rose to his feet to say a number of congratulatory words about Joe 6JO, who was retiring from the Council after an association with the VK5 Division dating back almost 25 years. These sentiments were echoed by all present in no uncertain manner, and I can say nothing further on this matter other than to add that the VK5 Council has lost a stalwart. Actually he is only retiring because he feels that he would like to become one of the members sitting down in the body of the hall, feeling possibly that after 25 years up with the "loffy-woffies," he had lost touch with the general membership. This meant the end of the business side of the meeting and the way was made clear for our usual three-monthly buy and sell night handled in a masterly fashion by Doual 5BY to the intense amusement of the membership and to the financial gain of the Division as a whole.

Among the welcome visitors were the following: H. Green, J. Parry, D. Hyde, A. Humphrys, P. Cornelius, Fred 9WZ, K. Skewes, B. Forsyth, D. Caffrey from Port Moresby, F. Mines, J. Campbell, and J. Crawford. A number of these visitors attended because of the possible formation of a Short Wave Listeners' Group, and Jim Paris took them in hand after the meeting and organised a meeting for them at a later date. I was talking to him today and he tells me that a preliminary meeting of the Group has since been held and judging by the enthusiasm displayed at this inaugural gathering the Group will fill a much needed gap between the Amateur and the Listener, to the eventual benefit of the Division. To the discomfiture of the Council, one of these prospective members of the S.W.L. Group wrote to Jim and told him that he had read of the formation of the Group in the local paper, which means that at last I have a reader, and proof in writing at that!

SOUTH EAST AREAS

The monthly meeting of the South East boys was held on the last Thursday of the month, and as usual brought the gang out of their hiding places. No tapes being available, Tom 5TW read a short section from "London Calling" on conditions existing on the various short wave frequencies, Stuart 5MS then gave his version on the conditions existing on 20 mx, winding up the talk with a round-up on the DX to be heard for the month, supporting his comments with a batch of QSL cards just received. The meeting concluded with general comments on all things Amateur Radio, and a good time was had by all.

The news from the S.E. areas this month seems to be mainly to do with the v.h.f.s. and whilst it has always been my policy to avoid trading on the corns and the territory of the v.h.f. scribe (he is a big burly brute and possessed of a violent temper), but as there has not been any v.h.f. notes in the magazine for the last two issues from VK5, I feel that I may enter where angels fear to tread!! On boy, on boy! what a victory for me. Just because it is school holidays, these chalk welders think that they can knock off everything and slacken off. Not whilst Simon Legree Parsons is around! Up Bowen, up Bowen, must I use the whip!!!!

5TW is usually active on 144 Mc. on Monday nights for his contacts with 5CJ and 5CH, although Tom is to be found on the regular band of 40 mx if conditions permit. A new-comer to 144 Mc. is Leo 5ZAG who is using a modified 522 and is hoping to get further afield when he gets everything lined up. Bram 5ZAB, from Naracoorte, is in the process of modifying a 522 to operate on 144 Mc., and is building a shack—25 x 14 ft. 5CJ has been heard at times on his favourite hunting ground of 40 mx, but Col is another one who has been heard in schedules with the gang on 144 Mc. 5CH has been a little active on 144 Mc. from his new shack, still unfinished. 5PB has recently had his new 750 re-aligned and Wally is very pleased with the performance of the rx these days. 5KU has been heard occasionally on the air.

5FD is another backslider who has been heard on 40 mx several times this month. Associate Roy Bishop, who is a regular attendant at the monthly meetings, is extremely keen on Amateur Radio, but his business activities rather cramp his style at times. Keep up the good work Roy and have a go at the ticket, it is not that hard to get, even I got it after the sixteenth attempt! 5MS had the pleasure this month of contacting VP5AE on telephony, thus striking a double this year (1st VK on c.w. and

1st VK on telephony), apart from TF5SV, this was his only new country for the month. Stuart has built a new modulator using 811s, class B. Claude 5CH gets a second mention in the notes this month because he brought along to the monthly meeting an RAX type rx and explained its uses to all concerned. Claude uses it as a Q5-er following a BC348, and if all is to be believed it certainly delivers the goods.

This month has been a bad month for me, mainly for two reasons. The first reason being that the VK3 scribe has now become openly insulting instead of relying on veiled innuendos. The cheek of his opening paragraph in last month's magazine, "in reply to many requests, mainly from VK5," wouldn't it? Why I am speechless! If I had not lent my umbrage to F.E., I would mount it and ride away never to return. The second reason however is a horse of another colour. I was listening to Jim 5FO in contact with a VP4 recently, and the VP4 said to Jim, "What sort of a character is this Pansy that writes the VK5 notes?" Actually he did not say character, apparently he was having difficulty with his spelling in English, and used the VP4 equivalent of moron. Now this word moron had me stumped and when I asked Jim's XYL, who speaks VP4 language almost as fluently as she speaks Hindustani, what the word moron meant, she said it meant soothsayer or wise man. Now perhaps you can see just why I am so upset this month. Here I have been writing the VK5 notes for all these years with the strict intention of giving the impression that I am a first class dillpot, and the first VP4 that reads them thinks that I am a soothsayer or wise man!

The Editorial of last month's magazine was well received in VK5 and hit the nail on the head with respect to not using our bands as we should. However, the suggestion that the time is fast approaching when we will have to send our own delegate from the W.I.A. to represent Australia at the next International Telecommunications Conference was not so well received. Not that the idea was rejected, but the expense angle was the bug-bear. After all, the money for such a trip has to come from the Divisional funds, or in other words, from the pockets of the members, and VK5 for one has to be mighty careful in balancing its budget to keep the Division on an even keel without asking its members to cough up for a trip away for any delegate, no matter how good he may be. He would only be a voice crying in the wilderness, and if the two larger world societies cannot now be expected to represent VK at the Conference, then it would be expecting too much from a lone delegate to do better. This is purely the opinion of the rank and file of VK5 and could be wrong, but no matter what VK does in the matter, or anyone else as far as that goes, Amateur Radio will take just what is dished out by those up above, and like it. It has never been any different.

Last month saw the annual cricket match played between the c.w. boys and the phone boys from VK5. This cricket match is really an annual grudge match which always seems to be won by the c.w. boys, no matter what tricks the phone boys get up to notwithstanding. The phone men, with Len 5OC as captain, won the toss and elected to bat first, to the accompaniment of cheers and jeers from the c.w. team captained by Arch 5EA. Batting with superb skill, Jim 5FO and Gordon 5XU rattled on 29 before being separated, and Len 5OC, together with Clem 5GL, paid a short visit to the wicket, being each presented with a full grown duck by the delighted c.w. team.

The next man in passed through the pavilion gates to a terrific uproar from the crowd, it was Pansy 5PS, that debonair welder of the willow, that exponent of the leg glance, that muscular darling of the teenagers. Luke 5LL, who was wheeling him on to the ground in the oval wheelbarrow, apparently found him too much of a weight because without warning he tipped up the wheelbarrow and marched back through the gates. "Will he break his duck?" the crowd asked, "Will he hit a six?" Their questions were not answered because one of the fieldsmen was explaining to him that the bat was held by the thin end and not the thick end! We will draw a curtain mercifully across the rest of his innings; more by luck than judgment, his bat got in the road of the ball and bounced away a couple of times for a total of four runs, and to his disgust and the crowd's delight, Les 5AX deliberately knocked his stumps flying into the air. Luke 5LL and Joe 5JO, together with Les 5UX, Gebert, Hewitt, and John 5KX, stayed long enough to knock up a total of 80 runs, which more than satisfied the phone boys who are always thankful for small mercies.

The c.w. team took the field in a very confident manner when it came time for them to bat and knocked up the excellent score of 115 runs. The driver of the bus was "rung in" for the c.w. side, as were three other visitors, and the phone men are considering whether or not a protest could be upheld. Judg-

CORRESPONDENCE

QSL CARDS WANTED

Balling Estate, Kuala Ketil, Kedah, Malaya.

Editor "A.R." Dear Sir, I should like to make an appeal through your correspondence column to ask the VK Amateurs to try and improve the QSL situation.

In countries such as Malaya, there is a large turn-over of Amateur population, for example few Forces Amateurs are active here for more than two years. As QSL Manager for VS2, I find it very difficult to trace these Amateurs after they have left.

Recently I received a batch of about 50 cards from the VK4 QSL Bureau in Brisbane. Of these cards, which took only five weeks to arrive by sea mail from Australia, a few represented contacts early in 1954, the majority in 1953 and some in 1952. Among them were cards from a s.w.l. listener in Brisbane itself giving signal reports on contacts made in 1953 and 1952. He must be a very optimistic chap if he expects verifications after all this time.

In the last six months I have received cards from the Outgoing Bureaux of only three VK sections, where are the rest? Surely they must have cards for VS2s.

Surface mail postage is not expensive and this small Society manages to clear its outgoing QSL Bureau every month. I am sure the VKs should be able to do it at least every three months, even if there is only say 10 cards, or is this asking too much?

How about it chaps, remember the fellows with the QRP stations do appreciate a QSL card and get disheartened if it takes years to arrive or does not come at all.

I send out my own QSLs for the VKs each month and after two years, the results are as follows:

| Section | Cards Sent | Cards Received |
|---------|------------|----------------|
| VK1 | 5 | 1 |
| VK2 | 54 | 13 |
| VK3 | 69 | 11 |
| VK4 | 34 | 11 |
| VK5 | 29 | 11 |
| VK6 | 29 | 8 |
| VK7 | 5 | 1 |
| VK9 | 10 | 1 |
| | 235 | 57 |

A pity so few received. I would be very grateful for some VK1 and VK9 cards for DX C.C.

—J. C. PERSHOUSE, VS2DQ.

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.

EXCHANGE: MN26C Compass Receiver, new, complete, for ARB Receiver complete in good condition. R. Campbell, Box 42, Sorrento, Vic.

FOR SALE: Band switched Transmitter, all bands 10 to 80. Final tube is 807 with 600 volts. Outfit complete in table cabinet, v.f.o., modulator and power supply being built in. Professional appearance and performance. Contains total of 18 tubes. Price £60. Buyer pick up. J. E. Rogers, 61 Broadway, Yallourn, Vic.

FOR SALE: Steel Tower 36 ft. with timber boom, also 52 ft. 2-piece Timber Mast. Best offer. S. R. Coleston, 6 St. Vincents St., Glenhuntly, Vic. UL 5595.

FOR SALE: Xtals, unmounted, 300-465 Kc., 10/- ea. Relays, 6,500 ohm, d.p.d.t., £1 ea. 750 ohm Relays, s.p., 12/6 ea. Odd Relays with slugs, 7/6 ea. 10 position Uni Selector, 6 volt solenoid operated, suit model train auto signals, etc., £2 ea. Robust chassis, 3 1/2 x 16 1/2 x 2 1/2 in. with cover, grey crackle finish, £1 ea. A. W. Oakes, 1 Palmer Street, Oakleigh, Vic. Phone: UM 3178.

ing in the R.D. Contest, and also formally moved the motion to amend the Constitution to make holders of the Limited A.O.C.P. eligible for full membership. At the conclusion of the business, a lecture on "Feedback in Amplifiers" was given by Mr. Bruce Kline, Engineering Chief of 7HT. Mr. Kline traced the history of feedback (both wanted and unwanted) and gave typical circuits with their effects. A vote of thanks, proposed by 7AL, was carried with acclamation.

In last month's notes I omitted to include a comment on the excellent assistance given to the v.h.f. communications crew by Mr. Barney Watson on last Regatta day. Barney, always ready to help, provided transport, battery charging and a.c. power for the shore end, thus making the whole job so much easier. Barney is also a member of the Lecture Committee which has provided so many good lectures lately. Tiny 7JD shattered his long silence recently when he came in on the Sunday 40 mx hook-up. So the new rig must work OK although there's been large bumps of silence since, so maybe something blew up.

Jim Millway, of the Central Group at Tarraleah, who recently gained the Limited A.O.C.P., is on a visit to VKs land. Congrats to you on the licence Jim. Within the month it is expected that Doug 7AB and Ted 7EJ will be moving to Hobart to take up residence. Doug was instrumental in designing and building a v.h.f. mobile rig for the Devonport Fire Brigade recently. Another Doug—7DZ—hero of the recent "sleep in the car" episode, will be on the way to England in a week or two. Max 7ML is now working on an all-band rx to go with his recently built miniature tx. Associate Vance Lohmann having fun with v.h.f. taxi equipment and would welcome suggestions as to how to eliminate ignition noise from cars who sit under the rear bumper bar.

As this is the last time that I will be writing these notes, I wish to take this opportunity of thanking all who have handed on bits of news, etc., and to wish the incoming Sub-Editor good hunting.—7LE.

NORTHERN ZONE

For our February meeting a very welcome visitor was Ed Bovis, ex-G3EXD, who has settled in the beautiful Tamar Valley in Australia's premier State and is awaiting receipt of his gear from G land. Hope to hear you with a VK7 call sign Ed. During Feb., Mac 3AKM spent his holidays in Northern Tasmania and managed to see a few of the gang. An overnight visitor to Launceston was DL6YU, Hans Moldner, who has been on a wool-buying tour and is returning via ZL and U.S.A. Hans runs a kilowatt into a pair of p.p. 813s on 80, 40 and 20 mx, using a separate Command tx as v.f.o.-exciter on each band. He is on the lookout for VK and ZL contacts.

Of local interest, 7LZ has modified his 2 mx tx to run 100w, and has a good signal in this area. There has been quite a spate of 2 mx activity with building of "personal portable" 2 mx rigs and highly directional beams to try and track from that master of evasion, 7XW. Three times in February Chris conducted hidden tx hunts, which are certainly stimulating local interest in the zone.

NORTH WESTERN ZONE

Recent visitors to the North Western Coast were Harry ZL4JA and Rod ZLAMY who were hitch-hiking round Tasmania and appeared very impressed with what they saw. Another visitor was Keith 3HK who was travelling in a small car with a portable rig on all bands and seemed to be enjoying himself.

Members of this zone recently made a trip round the Hydro development schemes in the central highlands of Tasmania where a large gathering at the QTH of Reg 7WN at Tarraleah included Jim 7ZAM, of Tarraleah, Bill Ion and Associate Wolfgang, of Bronte, Harry 7BR, Len 7LS, Charlie 7CF and Gill, of Queens-town, Denis 7DR and XYL, of Ulverstone, and the N.W. party included Syd 7SF, Ellis 7WA, Roy 7RN and Associates K. Hancock and R. Wilson. Refreshments were served by the ladies and were very much appreciated.

Sam 7UW is home from hospital now and thinking of bigger and better ideas for DX. Murray 7MR is still on the sick list, but we hope he soon recovers. It is rumoured that our zone president is being transferred to Hobart for which we are very sorry, but hope he at least gets a rig going on 80 mx to get in touch with us occasionally. Ellis 7WA has just completed a new 8JK aerial and is in the process of building a new final with an all-band tank. It is rumoured that 7SO will be on the air soon with 100w, of r.f. on his aerial and also that 7SF has gone mad on racing cars; watch out for your neck Syd.

ing by the rude remarks passed by the c.w. boys after their win, it is possible that even ruder remarks might be passed should we protest, and with this in view, the phone boys can only say, "wait until we meet again next year." Les 5AX, Arch 5XK, Rob 5RG, Arch 5EA, Martin, Fergie, Beaney, Turnbull, McCauley, Winkler, and McCauley (Don) has the distinction of playing for the winning team and our congratulations go out to them.

Well, it has come around again, next month sees me on my well earned holidays. This means that Doc 5MD will get his annual chance to have a shot at me through the magazine, and also have the pleasure of writing the weekly notes in the daily paper under the heading of "Pro 5PS." Did you ever read such a misnomer? Pro 5PS! That's the one thing that grates him, having to sign such a pen-name, especially for the whole State to read. Anyway, don't believe a word that he says, it's a lie, it's a fabrication, it's a distortion of truth.

WESTERN AUSTRALIA

At the February meeting of the Division, those present were entertained with talks by Sid Smith, 6SJ, on his recent overland trip to the Eastern States, and Wally Coxon, 6AG, on "Technical Aspects of the Flying Doctor Service." Sid related some of his experiences while "on the track"—some amusing, some otherwise, and held the floor for a very interesting half an hour. His comments on the mobile gear and activity with same in VK3 aroused considerable enthusiasm amongst the gang. Wally Coxon, as engineer for the Flying Doctor Service in this State, was of course well in touch with his subject, and gave details of some of the modern technical advances being made by the service in this State.

I don't think it would be out of place at this stage to comment on the fine job done by members of the VK2 Division in the recent New South Wales flood disaster. Local press comments were very favourable and one had only to listen on the various channels in the 3.5 and 7 Mc. bands to realise the good work that was being done. Congrats!

Once again it has been found necessary to re-open the 3.5 Mc. channel for the W.I.A. news broadcasts of a Sunday morning. If you have not been receiving the 7106 Kc. channel very well, try 3750 Kc. next Sunday, and results may be a little better.

Another point concerning the broadcasts is the unwelcome news of the temporary retirement from this task of 6GH. George has other commitments which will keep him more than occupied during the next twelve months, but he hopes to be able to resume duty as broadcast officer at the end of this period. At the moment it is not clear who will fill the gap.

6BS has been heard again on 3.5 Mc., but a very elusive character is Basil these days. 6ZZ, after a burst on 7 Mc., turned up on 20 mx to give the beam a dusting. 6LM not so busy with house building as to find time for an occasional contact. 6EC also bobbed up on 80 mx again with news of t.v. progress. He and 6WJ got stuck into a discussion about sync. pulses, square waves, linearity, e.h.t. and similar t.v. like terms. 6KJ also QSOed on 3.5 Mc. and remarked that the skip on 7 Mc. was once again too long for good city/country contact.

6WL and 6WZ heard in contact on 7 Mc. recently. Harry apparently has a new mike, as what sounded f.b. quality before is better than ever! 6KO's call sign heard being mentioned by the DX on 14 Mc., so Kevin must be getting stuck into it properly. Similarly with 6DX in Kalkoorlie. No need to hear Bill himself to know he is active!

TASMANIA

The March general meeting attracted quite a good gathering to the club rooms, about 30 members being present. Business for the evening consisted of last minute arrangement for the Annual Meeting and Dinner, and the collecting of nominations for the Council. Several new names appeared on the nomination list and it is hoped that some will be elected, it is always a good idea to keep fresh blood coming into the Council, and by the time these notes appear the new Council will have been elected. Here's wishing them a successful term of office.

It was decided to hold a Picnic and Tx Hunt on the Sunday following the Annual Dinner for the entertainment of visitors and others, the hunt to be on foot and within a mile of the Picnic site, no holds barred! The Federal Councillor, 7BJ, gave a summary of the results of the recent enquiry into the method of scor-

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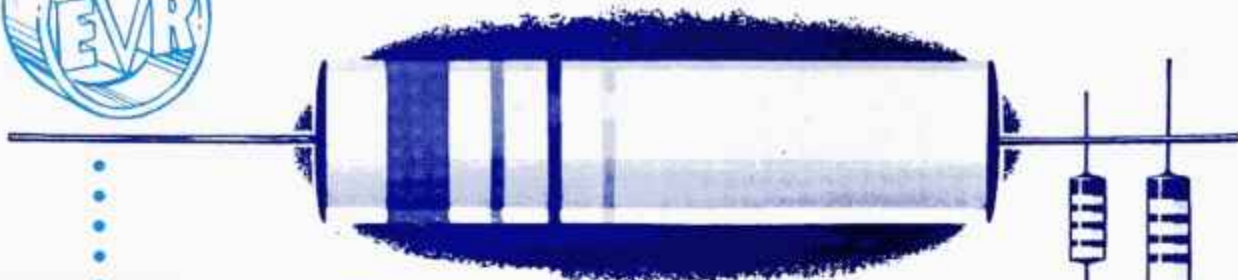
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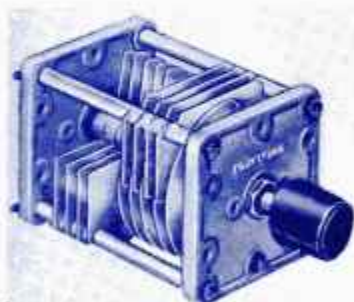
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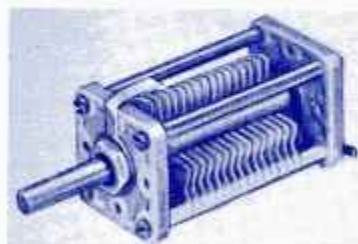
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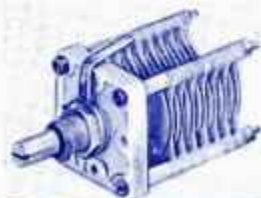
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EDITORIAL



THE YEAR AHEAD

I feel it is my duty as Federal President to give you a brief account of the work before the Federal Executive for the next twelve months. I would first like to inform you that your Executive are all men with wide administrative experience in public, civil and service affairs and you have our collective assurance that we shall do our utmost during the year to further the interests of the Institute as a whole. All members of the W.I.A. should be well aware that in both the Federal and Divisional spheres, our organisation is administered by volunteers. The corollary is that these men must give first attention to their civil and public vocations. It is then important that what time is available for our hobby is used to the best advantage and not frittered away in fruitless argument or internecine strife. We should apply ourselves with diligence and zeal to the tasks in hand and endeavour to be mutually helpful so that profit and pleasure may be the eventual result. This has been and will continue to be, the "motif prime" of your Executive.

There are many large problems facing your Executive. Too often in the past, though not from choice, it has been "bogged down" with administrative detail when the time should be devoted to more important and more urgent problems. I suggest Divisions can relieve quite a lot of this burden by familiarising themselves with the contents of the Constitution and the Policy Book. Our normal tasks of preparing and presenting your representations to the

proper authorities can also be effected more expeditiously if they are presented to us in the correct constitutional manner. Needless correspondence can be avoided and I do enjoin all Divisional Councils to give first priority to matters requiring a vote of Federal Council. These votes are too often unnecessarily delayed resulting in further delays before an official decision is made by the authorities concerned.

Every member should know of the correct channels through which he can express his opinions and present problems. This channel is through his Divisional Council via his Federal Councillor to Federal Executive where a Federal Council vote is called for or, alternatively, presented to the authorities depending on the circumstances. In this way, a member may have the whole weight of Institute opinion behind him rather than the individual unconstitutional direct approach, which is regarded officially as a "voice crying in the wilderness." Do please adopt the correct channel as a member, when your Executive can pursue your proposal to a successful conclusion with all the vigour and force at its disposal.

Without encroaching too far into your retiring President's territory in relating to matters of the last year, it is indeed gratifying to see the Short Wave Listeners' Section of the W.I.A. growing so quickly. It is from the ranks of these young men that so many of us graduated to our present status, and I would like to see them encouraged and helped as much as

(Continued on Page 13)

THE CONTENTS

| | | | |
|---|---|---|----|
| A Discussion of Receiver Performance | 2 | Fifty Megacycles and Above | 10 |
| Amateur Call Signs for January Seventh Annual Urunga Convention | 5 | Worked All VK Call Areas (W.A.V.K.C.A.) Award | 12 |
| DX Activity by VK3AHH | 7 | Short Wave Listeners' Section | 13 |
| Prediction Chart for May, 1955 | 9 | Federal, QSL, and Divisional Notes | 15 |

A Discussion of Receiver Performance*

Some Fine Points and Unsolved Problems of Receiver Design

BY E. W. PAPPENFUS, W0SYF

SINCE good communication superheterodyne receivers have been available for about 20 years, it is surprising that there is anything left to discuss about this line of equipment. However, the large number of letters that are written to the manufacturers questioning receiver performance points to the need for a discussion of the action of a receiver under certain conditions. These include weak-signal reception as well as performance in the presence of a very good signal. Many Amateurs feel that there is no need to miss a QSO because a signal is weak. They feel that if a signal can't be read, it is strictly the fault of the set design. At the same time, it is hard for many radio operators to understand why a receiver cross-modulates and blocks when the kilowatt station next door comes on the air. As you may guess, this is a discussion of the reasons why a receiver is not all the Amateur expects and perhaps also a defence of receiver design.

The subjects to be discussed include receiver sensitivity, signal-to-noise ratio, noise figure, cross-modulation and blocking. It is self-evident that a receiver for Amateur use, and particularly for DX, must have a great deal of inherent amplification. The ability of a receiver to make a lot of sound in the loudspeaker with a very weak signal is called "sensitivity". High sensitivity in a receiver is a necessary, but not sufficient, definition of weak-signal receiver performance. "Signal-to-noise ratio" is also very important.

It is not quite as apparent that a good communications receiver must be free from overloading or cross-modulation when strong signals are present. These undesirable effects are generally overlooked in the general confusion and congestion of the present-day Amateur bands. It must be admitted that the modulation splatter blamed on the local Amateur at the other end of the band is sometimes generated in the receiver. It is unfortunate that a receiver designed for very good weak-signal performance should have difficulty with extremely strong signals. This, however, is the case, and it is an area in which an engineering compromise must be reached. Like most compromises, it is open to argument, and there is no completely clinching evidence to prove that the receiver design was right. The compromise involves r.f. stage gain, a.v.c. characteristics, r.f. selectivity, type of r.f. tubes, type of mixer tube, and mixer noise. With all of these balancing factors it may be seen that it is not an easy decision for the set designer.

The signal-selectivity chart for a 75A-3, shown in Fig. 1, will help to explain some of the items discussed previously. In developing this chart, a signal generator was set for a conven-

● Here is an article on receivers that anyone with the slightest interest in "why" should not pass up. It won't tell you how to build anything, unless you read carefully between the lines, but it will certainly help you to understand some effects that may have been a mystery up to now.

ient level at the antenna and then moved back, stage by stage, toward the diode detector. The signal generator output was adjusted to hold constant diode-load voltage at each point in the circuit and, of course, the frequency was changed appropriately at the i.f. amplifier. The signal generator was then returned to the antenna terminals and increased to simulate a stronger signal. Again the signal generator was moved toward the second detector holding diode-load voltage constant. Moving the signal generator along, stage by stage, is equivalent to a voltage measurement at that point. A family of curves was generated, as shown, that gives a complete picture of receiver performance with various r.f. input levels. A change in gain is represented by a change in slope of the curve. Note the constant gain of antenna link to first r.f. grid, and the reduction in gain due to a.v.c. in the first r.f. stage and the i.f. amplifiers. It is clear how the gain of the five controlled stages changes to hold the diode-load voltage almost constant.

A.V.C.

The basic function of automatic volume control in a receiver is to keep the diode-load voltage constant and thus

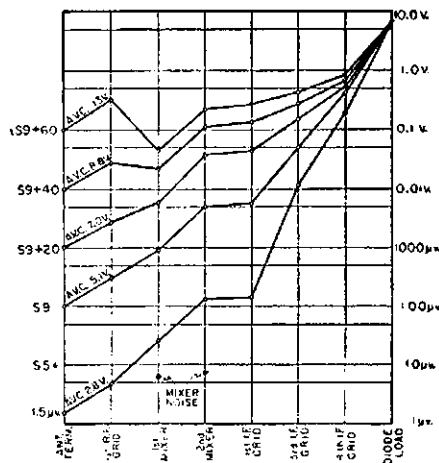


Fig. 1.—A signal-level chart of the 75A-3 receiver, showing the signal levels that exist through the receiver for various input signals and bias voltages.

hold constant audio output for changing signal levels. This is apparent from Fig. 1, because the diode-load voltage does not rise appreciably above 8 volts as the signal level is changed from 1.5 to 100,000 microvolts. This constancy of receiver output voltage does not tell the whole story, however. It is important to "delay" the application of a.v.c. voltage until a suitable signal-to-noise ratio is reached. This allows the receiver output to increase in a linear manner with input signal level so that receiver noise is rapidly overcome. In the 75A-3 the a.v.c. does not become effective until the input signal is about 1.5 microvolts. In addition, some sets delay the application of a.v.c. voltage to the r.f. stage until even higher signal levels are reached. This also contributes to a linear improvement in signal-to-noise ratio as the input signal is increased above the a.v.c. threshold. As an example of delayed a.v.c. action, if a 2-microvolt signal gives a 10-db. signal-to-noise ratio, then a 20-db. increase to 20 microvolts will give a 30-db. signal-to-noise ratio. A 10-db. signal-to-noise ratio provides a good readable signal, but a signal with less noise is more enjoyable and less tiring to the operator.

By dividing the a.v.c. voltage applied to the r.f. stage in the 75A-3, suitable action is obtained without separately delaying the r.f. stage a.v.c. voltage. Since a sharp cut-off tube is used in the 75A-3 r.f. stage, there is a secondary reason to limit a.v.c. voltage to this tube. A 6BA6 is a better tube for a.v.c. action, but unfortunately it is a very noisy tube compared with the 6CB6 that is used.

Manual gain in the 75A-3 operates on the a.v.c. line, just as the automatic volume control does. This means that the gain distribution is proper for any reasonable setting of the manual gain control. It is possible to degrade the signal-to-noise ratio with manual gain control if too much gain-adjusting action is applied to the r.f. stage, so that mixer noise is proportionally larger. Noise tests on a receiver should be made at various signal levels to insure that manual gain control is applied to the proper stages.

WEAK SIGNALS

It is possible to put a large amount of over-all amplification in a receiver because the amplification at a given frequency can be held to a manageable level through the use of the superheterodyne principle in single or multi-conversion (75A) schemes. The gain from antenna to loudspeaker in a typical communications receiver may be as great as 10 million, but all this gain does not permit the Amateur to copy a weak DX station unless the noise contributed by the antenna coupling circuit, the first r.f. tube shot noise, mixer noise, etc., is held to a low value. That

* Reprinted from "QST," January, 1955.

is the reason receiver performance is specified by signal-plus-noise-to-noise ratio.

A signal generator modulated 30 per cent. at 400 c.p.s. (to simulate a speech signal) is fed into the receiver antenna terminal. The proper resistor is placed in series to match the receiver input impedance. The signal generator output is increased until there is a 10-db. increase in the reading of an output meter connected to the receiver audio over the level present when the modulation is switched off. This means that the signal (modulated portion) plus noise is 10 db. stronger than the noise level is acceptable for voice communications, hence the justification for this value. A good c.w. operator can copy signals with a lower signal-to-noise ratio, but the lower the signal-to-noise ratio, the more expert the operator must be.

It is dangerous to generalise, but it is possibly safe to say that any Amateur receiver with a 10 db. signal-to-noise ratio at from 1 to 3 uv. is in the high quality class. Noise-figure tests of receiver performance make use of a noise diode and are the only real means of comparison between receivers of different bandwidth, because receiver noise voltage varies proportionally to the square root of the bandwidth. A narrow-band receiver should not be compared directly with a wide-band set. Noise figure expresses the ratio in db. between the noise level of the receiver under test to a so-called perfect receiver in which all noise is assumed to be generated in the dummy antenna due to its thermal noise.

It can be shown that a perfect receiver with 6 Kc. bandwidth and 100 ohm input would require 1.4 uv. to have a 10 db. signal-plus-noise-to-noise ratio. This receiver when operated with a dummy antenna matching the receiver input impedance has a 3 db. noise figure. It is theoretically possible to improve the noise figure by mismatching the antenna, but this is not important from a practical standpoint in the Amateur bands from 10 to 160 metres, because the antenna impedance cannot be predicted accurately. Again a compromise in design results, and a 100 ohm input impedance was selected for the 75A-3. Since signal generators are generally available and noise diodes are not, it is customary to use the signal generator method with 10-db. signal-plus-noise-to-noise as the standard of comparison between receivers. Incidental frequency modulation in the signal generator can cause errors, particularly at high frequencies, and should be guarded against.

Noise in a receiver results from so-called thermal-agitation noise in the input circuit, shot noise, mixer noise and amplifier noise. Pentagrid mixers are particularly noisy tubes, but they are advantageous because of the ease with which the oscillator can be fed into the mixer and the freedom from coupling of oscillator voltage to the signal grid.

If enough gain-producing elements precede the mixers, then the mixer noise can be neglected. Since the greatest gain exists from the grid circuit of

the first r.f. amplifier to the receiver output, it is logical to expect this noise to be louder than any other receiver noise. This is not always true, but in a properly designed receiver the input noise makes the greatest contribution to over-all receiver noise. This can be demonstrated by peaking the grid circuit, with a resistor of proper value across the antenna terminals. A rise in receiver noise output when the first r.f. tank circuit is tuned compared with the completely detuned condition indicates the proper gain distribution. A drop in noise level as the first r.f. tube is removed also shows that the mixer noise is not an important factor in over-all receiver signal-to-noise ratio. Two r.f. stages are generally not required to approach the ideal weak-signal receiver performance, because a single stage using a high transconductance tube will amplify the signal sufficiently to override the mixer noise. The chart of Fig. 1 shows the equivalent noise present at the mixers. The gain here appears sufficient to override completely the mixer noise with 1.5 uv. input.

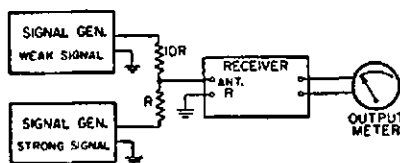


Fig. 2.—The cross-modulation effects in a receiver can be measured by using two signal generators connected as shown here.

If this peaking effect of noise with antenna terminals properly loaded with a resistor is not found, then the antenna coil gain, antenna circuit Q or r.f. amplifier gain should be adjusted until the receiver noise is dominated by the receiver input noise. Only then can the operator say that his receiver is able to hear the weakest stations. This actually is a rather theoretical consideration because of the large amount of static and interference prevalent, except perhaps on the 10 metre band. When the weakest reading on the S meter across the entire 20 metre phone band is S6 to S9, because of a solid array of strong signals, obviously receiver noise is not then the limiting factor. Receiver bandwidth is much more important. Atmospheric and man-made static on the antenna also limit the signals that can be copied. Only rarely can the full signal-to-noise capabilities of a receiver be used. This can be checked by tuning in an unused portion of the band (that's a joke, son) and then removing the antenna from the receiver and replacing it with the equivalent resistance. If the receiver noise output drops, then the antenna noise is the limiting factor and not the noise developed within the receiver.

STRONG SIGNALS

For the reception of strong signals, an additional receiver requirement is added. Radio frequency voltages applied to any stage of the receiver must not exceed the bias for that stage with any signal ordinarily encountered. Fortunately, the receiver a.v.c. voltage increases the bias applied to each stage

and at the same time reduces the gains through the receiver when strong signals are tuned in.

Five controlled stages are used in the 75A-3 a.v.c. circuit. By removing one controlled stage or by reducing the proportion of a.v.c. voltage fed to a stage, it is possible to change the receiver gain distribution. The set designer has this "handle" by which he can set the gain curve to the desired shape. The curves of Fig. 1 show sufficient r.f. gain adjustment so that the mixers are protected from large signal voltages for any signal within the range of the S meter. Because mixers are somewhat critical in the application of bias, the first and second mixers are omitted from the controlled circuit and set at a suitable bias by voltage drop across a cathode resistor. The exact gain distribution within a receiver is not critical within the limitation that all stages must be held below the over-load region with the highest signal level ordinarily encountered.

Strong signals outside the passband can reduce the set gain if rectified grid current flows in any stage which can charge up the a.v.c. line. A decoupling resistor and a low-resistance a.v.c. line minimise this effect.

Representative voltages for 0.5 volt input are 1.5 volts on the r.f. grid and 1.1 volts on the second mixer grid. At these voltage levels the mixer draws grid current and its conversion gain is reduced. The overload point for a receiver is defined as that input level at which a 6 db. drop in audio output occurs compared with the maximum audio output as the input signal is increased. Overload point for the 75A-3 is at 1.4 volts. A small amount of grid current in the mixer is not serious, as indicated by the fact that the overload point is well above the input at which the peak r.f. grid voltage applied to the second mixer exceeds its bias.

All s.s.b. operators will cry out loudly at the above statement. It is possible to tolerate grid current in a receiver mixer because the performance standards are so much lower than in linear amplifiers. In a s.s.b. transmitter it is desirable to keep intermodulation products down 30 db. Harmonic distortion of the signal in a receiver can be tolerated if it is 10 to 20 db. below the signal level. This explains the ability of the receiver mixers to operate satisfactorily with small positive grid voltages.

For the reception of weak signals described earlier, it is desirable to have as much gain as possible ahead of the mixers. This would insure that the signal level would be strong enough to override completely the noise from the pentagrid mixers. However, from the standpoint of strong signals, it is desirable to have low amplification until the selectivity of the receiver is effective. This would insure that only signals in the i.f. passband would tend to overload the set and these could be more readily accommodated by the high a.v.c. bias and gain control that is effective in the i.f. amplifier. These requirements for no amplification ahead of selectivity for strong signal reception and high gain in the antenna circuit and r.f. stage for weak signal reception are in direct conflict. It is fortunately possible to make an engineering compromise that will

† Goodman, "How Sensitive Is Your Receiver?" "QST," Sept., 1947.

ZEPHYR MICROPHONES

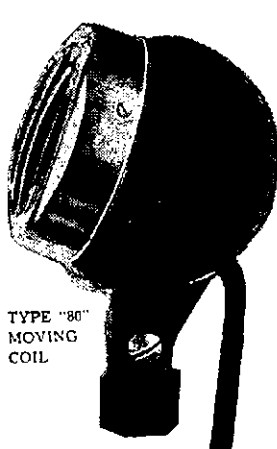


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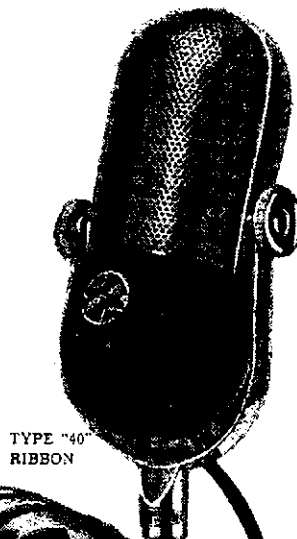
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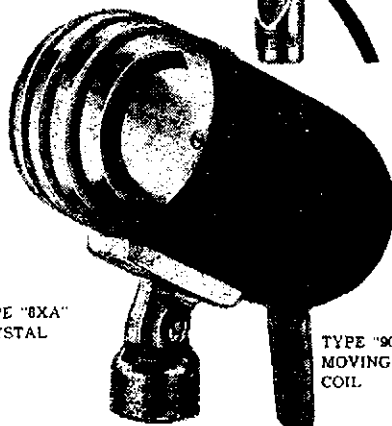


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accommodate the majority of operating situations which confront the Amateurs. Weak signals can be handled by using just enough r.f. stage gain to override the mixer noise by about 6 db. or slightly more.

CROSS-MODULATION

When the receiver is tuned to a weak signal, and a strong signal is present outside the i.f. passband, then a different condition prevails than in the strong signal case outlined above. There is very low a.v.c. bias generated to protect the grids of r.f. and i.f. amplifiers from grid current and only moderate gain reduction to prevent strong signals from stage to stage in the receiver.

The only gain-reducing elements present are a small amount of a.v.c. bias generated by the desired signal, and the selectivity of the r.f. and variable i.f. coils in double conversion receivers. The selectivity of these coils determines the r.f. voltage applied to mixers and i.f. amplifiers. With very large signals applied to any stage of the receiver, nonlinear operation causes modulation components of the strong signal to appear on the weak signal. This, in effect, means that strong phone signals outside the selectivity curve of the i.f. amplifier can still be heard. The term "cross-modulation" has been applied to this effect.

Cross-modulation in a receiver is measured by a laboratory set-up as shown in Fig. 2. Two signal generators are used to simulate the two signals. One signal generator feeds the receiver through a resistor equal to the input impedance while the other signal generator feeds through a resistor of ten times the input impedance. The resulting impedance is then very close to the matching value. The signal generator feeding through the large resistor is set for a value of r.f. that will produce an antenna terminal signal of, say, 10 uv. (approximately S6) at receiver centre frequency. The audio output is measured and signal generator modulation is removed. The second signal generator is then turned on and adjusted for 30 per cent. modulation. At various frequencies near the receiver centre frequency the r.f. level from the second signal generator is increased until the receiver audio output is 10 db. less than that measured with first signal generator.

A plot of these values for the 75A-3 operating at 4.0 Mc. is shown in Fig. 3. Adjacent signals at S9 plus 40 db. can interfere if they are closer than 15 to 20 Kc. from the desired signal. Approximately 50 Kc. separation is required for signals that are 60 db. above S9. The cross-modulation curve of Fig. 3 is an inverse composite of the receiver input selectivity. The lower part of the curve is determined by the selectivity of the receiver circuits to the second mixer grid and the upper part of the curve is shaped by the selectivity to the first mixer grid. The r.f. stage is never responsible for cross-modulation below 1 volt r.f. on the antenna for a 10 uv. desired signal level. The portions of the curve at which the first and second mixer respectively contribute to the cross-modulation are indicated. A portion of the curve entitled "both" is a transitional area in which both mixers contribute to cross-modulation.

The application of a.v.c. voltage to the r.f. stage reduces its gain and helps protect the subsequent stages from excessive voltages. The matter of cross-modulation characteristics of an r.f. tube is extremely complicated, so just taking a given tube and applying a.v.c. bias is not the whole answer. There is no substitute for a large number of cross-modulation tests to determine proper r.f. stage conditions. There does not seem to be a receiving tube available that possesses the extremely large signal-handling capabilities required. Several tubes recently announced show some promise, but until they are proven, the receiver designers laughingly suggest a 4-125A or similar for the receiver r.f. stage.

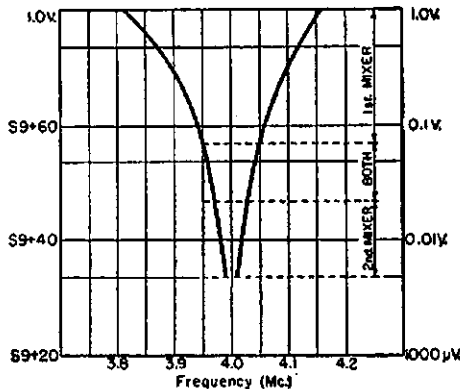


Fig. 3.—The cross-modulation characteristic of the 75A-3 receiver, with the receiver tuned to 4.0 Mc.

To prove cross-modulation when operating "on the air," the received signal can be reduced with a 20 db. resistive attenuator. This will reduce an S9 signal to about S6, which is still readable, but at the same time drop a 1-volt signal, due to that kilowatt next door, to 0.1 volt. If the splatter disappears when the attenuator is placed in the antenna lead, then the difficulty is in the receiver. Remember not all modulation splatter is in the receiver. A few inconsiderate Amateurs are guilty of severe overmodulation.

A more simple test is to remove the normal antenna and connect any short piece of wire that will reduce the desired signal to a just readable level, and then note the presence or absence of splatter. Either test is acceptable for tracing the source of this type of interference.

If you are not looking for weak signals, either of the above methods for reducing input signal level can help receiver cross-modulation. A separate r.f. gain control (variable cathode resistor) is also sometimes helpful in reducing the cross-modulation that occurs in the mixers.

This receiver discussion has been handled in general terms. A later article will give some hints as to how the 75A-3 can be adapted best to serve the Amateur with special interests like DX work on one hand or just local rag-chewing on the other.

I would like to express my appreciation to the many Collins engineers who assisted in this discussion of receiver performance.

AMATEUR CALL SIGNS

FOR MONTH OF JANUARY, 1955

NEW STATIONS

- VK— New South Wales
 2ABF—C. E. J. Sims, 2 Verlie St., Merrylands.
 2ASX—C. H. A. Armstrong, The Caravan Park, Wagga Wagga.
 2ATN—F. G. Barron, Flat 2, "Exeter Manor," 78 Macquarie St., Parramatta.
 2AWC—J. W. Cohen, 27 Hinkler Cres., Lane Cove.
 2AXT—A. R. J. Topp, 33 Western Rd., Parramatta.
 2ZAF—J. P. Folkard, 10 Clovelly St., Watsons Bay.
 2ZAQ—L. W. Cook, 159 Bronte Rd., Waverley.
 2ZAV—W. J. Lark, 34 Church Ave., Westmead.

Victoria

- 3IB—A. C. Hawker, 75 Lloyd St., Dimboola.
 3RG—J. H. Jones, 36 Hamel St., Box Hill.
 3SB—A. L. Brehaut, 29 Clyde St., Oakleigh.
 3XT—G. F. Millerd, 18 Ward St., South Melbourne.
 3ADL—C. Luckman, 2 Milton St., Canterbury.
 3AML—R. E. A. Grigson, 14 Grace St., Malvern, S.E.4.
 3AQF—J. R. Fryer, 424 Plenty Rd., Preston, N.18.
 3AVS—M. Strohfeldt, 13 Lindsay Ave., Murrumbidgee.
 3AXG—J. M. Gibson, 31 Dawn St., Highett.

Queensland

- 4ZAQ—M. F. McManus, 72 Sylvester St., Windsor.

South Australia

- 5AE—F. A. Eastick, Station: Administration Hostel, Cr. Todd St. and Stott Tce., Alice Springs, N.T.; Postal: C/o. P.O., Alice Springs, N.T.
 5KS—R. A. Sedunary, 51 Gertrude St., Glendore.
 5ST—R. T. Southwood, C/o. Dept. of Civil Aviation, Box 35, Tennant Creek, N.T.
 5WB—W. S. Beaney, 83 Glengyle Tce., Plympton.
 5ZAG—L. M. McGrath, 14 Tallara Ave., Mount Gambier.
 5ZAX—R. W. G. Wehr, 20 Kintore Ave., Prospect.

Western Australia

- 6HM—C. W. R. Holman, C/o. Radio Station 6NA, Narrogin.
 8ZAV—D. F. M. Brown, "Valona," Coode St., Bayswater, Perth.

Tasmania

- 7VS—I. L. Griffin, Alexander St., Cornwall.

Territories

- 1EM—E. L. Macklin, Mawson, Antarctica.
 1RA—R. W. Allison (Dr.), Mawson, Antarctica.
 9RO—R. M. Ellison, S.D.A. Mission, P.O. Box 21, Wau, N.G.

CHANGES OF ADDRESS

- VK— New South Wales
 2QL—F. T. Hine, 30 Abbotsford Rd., Homebush.
 2QF—L. W. Hughes, 64 Lowry St., East Bankstown.
 2ACV—A. E. Mulcahy, Station: S.S. "Koorawatha," Postal: McDowraith McEacham, Box 255C, Melbourne.
 2ADH—F. C. Deaman, Flat 52a, Housing Commission, Liverpool.
 2AJQ—J. C. Turner, 284 Keppel St., Bathurst.
 2AKU—J. Georgeson, 7 Rothwell Cres., Lane Cove.
 2AQN—J. F. Cox, 8 New England Drive, Kingsgrove.
 2AVO—J. T. Crichton, Rous Rd., Goonellabah.

Victoria

- 3LF—M. K. Bunn, 1183 Burke Rd., Kew.
 3LG—J. A. Williams, 110 Johnston St., Newport.
 3MX—P. J. Sebire, 4 Howell St., Moorabbin.
 3UJ—A. Roudle, Croydon Way, Croydon.
 3ZU—F. A. O'Donnell, Lynch St., Yarrowonga.
 3ABM—J. E. Watson, Station: S.S. "Eastern," Postal: C/o. Messrs. MacDonald Hamilton & Co., Box 386D, Melbourne.
 3AJO—J. R. O'Halloran, Church St., Lakes Entrance.
 3ALA—E. A. R. Clark, Laura St., Maffra.
 3AOB—E. F. O'Brien, 33 Hare St., Shepparton.
 3AQR—J. M. Ray, 9 Hedderwick St., North Balwyn.
 3ARF—R. C. Shortell, "Redwood," Bayswater Rd., Croydon.
 3ASC—S. T. Clark, Station: 104 St. Helier St., Heidelberg; Postal: Flat 20, 100 Drummond St., Carlton.

(Continued on Page 12)

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SEVENTH ANNUAL URUNGA CONVENTION

The North Coast and Tablelands Zone Convention was again held at Urunga commencing 8th April and running until 11th April, and it again proved to be one of the most popular Conventions. The weather was not so kind as in previous years, but as the time passed, it appeared that the organising committee also had some say in the activities of Jupiter Pluvius.

Many of those attending had arrived by Friday and duly settled in to the hotel, guest houses and the camping reserve, and all attended a meeting held at the Ocean View Hotel on Good Friday night. The meeting was presided over by the Convention President, Alan Williams, 2FH, who welcomed firstly the President of the N.S.W. Division, Jim Corbin, 2YC, and the Federal Secretary, Doug Bowie, 3DU, to Urunga. Alan outlined the agenda of the meeting and the President gave his introductory speech on Institute matters. The site of the 8th Convention of this zone was discussed and it was decided that the Convention be held at Easter weekend, 1956, and should be held again at Urunga. Its ideal geographical location, its facilities both for accommodation and for the organising of competitions, and the great support given to the committee by the local organisations, making it the ideal place for such a function.

Officers were duly elected for the coming year, the election resulting as follows: Patron, Crief Retallick; Convention President, Noel Hanson, 2AHH; Vice-President, Jack Gerard, 2ADN; Secretary, Alan Williams, 2FH; Treasurer, Ted Gabriel, 2AVG; Organiser, Peter Alexander, 2PA; Sydney Liaison Officer, Ted Whiting, 2ACD.

Discussion then took place on a number of matters affecting the Zone Disposals, the N.S.W. Co-Operative Ltd., etc. Answers to many questions were given by the President and both he and the members of the N.S.W. Council present, Barry 2AAB and Don 2ASW, came away from the meeting with many ideas and the opinions of the members of the North Coast Zone members.

Many informal discussions were held with Doug Bowie, Federal Secretary, and many points of interest were cleared up, Doug being particularly pleased that he was able to make so many personal contacts and discuss so many and diverse subjects.

The next day, Saturday, the morning was given over to the registration of those attending and of course the usual ragchew. On such occasions many old friendships are realised and many new ones made in an atmosphere of conviviality. Those registered: 2AHA, 2XT, 2ACU, 2YC, 2AAB, 3DU, 2ARY, 4PR, 2EA, 2QI, 2PA, 3AID, 2SR, 2OE, 3ALQ, 2AVG, 2AVS, 2AUI, 2FH, 4TH, 4FP, 2AXZ, 2AHH, 2ACD, 2ASW, 2WQ, 2AWG, 2APB, 2JK, 2ABT, 2ABP, 2AJF, 2AMV, 2JC, 2APS, 2ADN, 2ASA, Associates Norm Dash, Bob Bailey, Les Gilbertson, Harry Miller, Roy Woods, Norm Moody, Snow McCaulay; Ladies: Mesdames Bowie, Rafter, Bowler, Alexander, Ash, Dunford, Meagher, Smith, Miss M. Hunt.

The "Gerry Challenger Remembrance Contest" for 7 Mc. Portable and Mobile stations was held in the afternoon. All contestants starting from the green and proceeding to their locations within a 3-8 mile radius of the town to commence operation 30 minutes later. Concurrently with this event, the ladies were conducted on a launch trip up the beautiful Bellingier River by "Admiral" Moody.

Following dinner, a social gathering was held at the camping reserve at which some excellent films were shown by Ted Hamey from Coff's Harbour, slides by John Meagher followed showing the results of the recent disastrous floods at Gilgandra and Forbes. The popular item on the evening programme was, of course, the de-modulating of the 807. Music was supplied by Rod Woods on the accordion and most attending reached their accommodation at a very early hour.

The 144 Mc. Tx Hunt was held in doubtful weather, but despite the conditions several contestants found the tx manned by 2FH and Norm Dash some miles out of town. 2AAR and others experienced difficulty with a road but all ended well.

The W.I.A. Broadcast was made from the mobile station of 2ASA and was conducted by Jim Corbin and Doug Bowie.

Possibly the most humorous event held at Urunga was the Blindfold 144 Mc. tx hunt held on the green in the front of the hotel. The control station was moved for each heat and all agreed that it is a most amusing event. Meanwhile, "General" Moody conducted the ladies on a scenic car trip up the Bellingier Valley to Bellingen and return, the scenic beauty of the district impressing the visitors.

Next event was the Urunga Scramble for a trophy donated by United Radio Distributors. The object of this contest is to work the most stations on any power from any source, no holds barred. A special prize in this event is given for the best contact on a miles per watt basis.

Sunday night-brings an annual event, the Concert held in the School of Arts, Urunga. At this concert all the local people are invited by the zone members,

the hall was full and a fine programme was arranged by Jack 2ADN. Artists taking part were Vic Hardacre, Lindsay Cox, Ina Alexander, Melody Cox, Roy Woods, Noel Hanson. Apologies for non-attendance were received from Crief 2XO who, with Mrs. Retallick, is marooned temporarily in VK7 and many other chaps who found that they could not attend. The comper for the evening, Ted 2AVG, introduced Jim Corbin, Doug Bowie, Mr. Cooper (President of Progress Association) and Mr. A'Hearne (Secretary Progress Association). In his address of welcome to the visitors to the town, Mr. Cooper stated how pleased his Association was to see so many visitors to this popular resort and referred to the part Amateur Radio played in the recent emergencies. Jim Corbin replied in his customary manner, but on this occasion did not eclipse his endurance feat of the previous night when he spoke for some long period of 75 minutes (2ADT and 4AB please note!).

Following an excellent concert, the prizes won in the events of the Convention were presented by Doug Bowie, Federal Secretary (3DU). These were distributed as follows:

Gerry Challenger Trophy and Replica: Don 2ASW, 72 points, 1st; Noel, 2AHH, 65.7 pts., 2nd; Peter 2PA, 61 pts., 3rd. Urunga Scramble: Barry 2AAB, 45 contacts, 1st; Noel 2AHH, 43 contacts, 2nd; Alan Williams, 36 contacts, 3rd. Hidden Tx Hunt, 144 Mc.: John 2AMV, 1st; Norm Moody, 2nd; Harold Whyte, 3rd. Blindfold 144 Mc. Tx Hunt: John 4FP, 1st; Leith 2EA, 2nd; Harry Miller, 3rd. Lucky Number: Jack 2AJF won a toaster donated by A.G.E. Co. Ltd. Most miles per watt in the Urunga Scramble: Bill 2XT with a contact with ZL1ADV.

Finally supper was served by the ladies of the local Progress Association and a further 807 was suitably dealt with, with the musical encouragement of Roy Woods. An excellent evening was had by all.

Ragchews and farewells are the order of the day on Monday, Doug and his wife to Sydney en route to VK3, full of thoughts and ideas for the future; the Hunter River gang back to their homes around Newcastle, and many journeying by road and rail to various parts of the State, all ready we feel sure to return to Urunga next Easter to enjoy more of the hospitality of the North Coast gang.

Noel Hanson wishes to record his personal thanks and the thanks of the committee for the support you gave them. More Amateurs visited this Convention than any previous one, and hopes that you will all return next Easter when it is hoped to arrange a bigger and better programme. Thanks go out also to the management of the Ocean View Hotel, Urunga; Pilot Guest House and Berry's Guest House, Urunga Progress Association, R.S.L. Urunga Branch, and to all those who contributed to making our stay in Urunga so enjoyable.—2ACD.

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DX ACTIVITY BY VK3AHH†

PROPAGATION REPORT

3.5 Mc.: This band continues to offer relatively good conditions for overseas communication. Times for North America, the Pacific Islands, and the Far East were between 0730z and 1300z. Openings to Europe existed around 2000-2115z.

7 Mc.: Here conditions followed the general pattern with Europe and North Africa over short and long path (1900-2200z and 0700-0900z) and North America around 0600-1400z. Some long path contacts with the East Coast of North America were possible around 2100-2300z. South America break-throughs were noticed around 0700-0900z.

14 Mc.: Some deterioration of conditions on this band has been reported. The band opened to Europe via the short path around 1300z and sporadically over the long path to G-land (0700-1000z). African openings occurred around 1700-2000z. Conditions to the American Continents existed between 0200z and 0800z, and around 1200z.

21 Mc.: This band showed some good break-throughs to North and South America and Africa (2300-0400z, 0500-0900z).

27/28 Mc.: The only report referring to this band does not mention any contacts.

NEWS AND NOTES

Wherever DXers meet, on crowded Amateur bands or even personally, there is one topic which is certain to be dealt with, unfortunately more by words than deeds: Common are our complaints and united we stand against "Commercials." The following list of frequencies within the 7.0 to 7.1 Mc. "exclusive" (!?!?!?) Amateur band, which are useless in Europe, has been received from a well known DXer, Ake, SM5AQQV: 7000, 7005, 7008, 7010, 7018, 7022, 7025, 7030, 7049, 7050, 7062, 7065, 7070, 7075, 7079, 7085, 7088, 7092, 7096, and 7100 Kc. On these frequencies B/C stations have actually been received and identified in Europe. We shall never be scared off the band by them, but shall insist on our rights—proven and true in 1921 as well as 1955!

Consequently, let us get into action! Let us boost 7 Mc. activity by every possible means: Contests, Scrambles, Certificates, etc. etc.!

The 23rd March, 1955, found Bill VK1EG, George VK1DY, and John VK1PG, of the Australian 1954 Antarctic Expedition being welcomed by VKs 3IB (ex-1AC, Macquarie Island), 3BG, 3YS, and 3AHH.

During the month, a well known W DXer, Bill Baird, W2CPN, gave the Melbourne gang an excellent chance for an interchange of thoughts and ideas on Amateur problems everywhere. It was a pleasure to have you here, Bill! We appreciated your interest in our W.I.A. activities!

Corn Island will be represented for three or four days beginning 23rd April, 1955. The station will operate on all bands under the call sign YN0YN. Information was received by 3WB from ZL2ASQ. (Thanks 3WB.)

HC8GI is active on 14160 Kc. (from 3KR, 3TE, W8CZD). The boys at Mawson, Antarctica (VKs 1EM, IRA, 1AWI) have commenced operation (from 3XB).

Activity by FY7YE and ZD8AA has been reported (from 3TE, W8CZD).

The only legal stations in Ethiopia are ET3R and ET3Q (from SM5AQQV).

A new station on the New Hebrides is YJ1DL (from ZL1ADU).

† Hans J. Albrecht, 10 Belgravia Ave., Box Hill North, E.12, Vic.

* Call signs and prefixes worked.
z—zero time—G.M.T.

ZC3AC can be expected to be on again next month. Frequency: 14163 Kc. He can copy c.w. (from 6MK).

By courtesy of the Northern California DX Club and their DXer: Activity list of VP8 and LU-Z stations: South Shetlands—CP8AK, AW, AX. LUs 3ZS, 4Z1, 1ZT, 7ZO, 8ZS; South Georgia—VP8AT, AU; South Orkneys—VP8AQ, AE, and LU7ZM; Falklands—VP8AP, AN; Antarctica—LU1ZK, 2ZC, 9ZM, 1ZS; Grahamland—VP8AJ, AA, AO, BA, BE.

And from the Southern California DX Club and their Bulletin: MP4QAJ, FD8AA, and FL8AI are active on 14 Mc.

At time of writing there is no active VK1 on Cocos Island, but rumours are that the meteorological officer, who is qualified to get a license, will soon do so and represent the islands again (from 6MK).

Signing and posting, production, preparation, drafting and arrangement of our official W.I.A. propaganda for the Olympic Games were done by VKs 3TF, 3RN, 3ZS, 3AHH. Useful assistance was provided by VKs 3DU and 3NY. Other W.I.A. Divisions and the 76 Overseas Amateur Radio Associations should have received the information by now.

ACTIVITIES

3.5 Mc.: Frank 2QL worked Ws* and VE7AHS, and heard KM6AX, KH6, JAS. Neville 2APL reports W3 and JA1CJ. Neil 3HG worked W2* and Kel 3AEF reports W6* and VE. Norm 3AXX heard a series of Ws, and Austin 5WO also contacted W6*, W7*. The next is Eric BERS195, who heard a number of Ws. 3AHH worked Ws* and heard Europeans, KM6AX, KH6 and JAS.

7 Mc.: 2QL reports FA8RJ*, FA8DA*, CT1D*, G*, ON*, PA*, LU4* and EA, IBNU/Trieste, GC3KAV, OH, DL, MP4BBL, Laurie 2AMB adds LU1SE*, LU3EX*, HB3RN*, DL1FF*, DL7AA*, G5CR*, G3DCU*, G3BK*, VP8KL*, FA8DA*, CT1D* and FA8RW, YUZADE, KR6AZ, LU8GB, YV1AD, OZ7BM, CE3EQ. 2APL worked KH6* on phone. Jack 3JA contacted W3* over the long path. Ivor 3XB contributes P12AN*, VP80B. 5WO keyed with JA4BB* and KM6AX*. BERS195: CE4AD, CN8M, CN8IN, EA6AV, FA8DA, FA8RJ, FA8RW, HB1EU, HB1SS, HB4FF, HB9QF/MM, IT1TAI, IBNU/Trieste, JA7E, KP4AQC, KP4CC, KR6PT, KZ5A, KZ5BE, MP4BBL, OD5LC, OQ5RU, JZ0DN, T3ASU, VS1BJ, VQ2AE, VQ4DW, Y1ZAM, ZEZJO, 4X4FW, SM8AYN, YU2CL/MM, Jim Hunt adds HP3FL, HR4WH, YN4QB, CT1SQ, DU1GF, CR3IT, KH6—all on phone. Dave Jenkin reports JA1AF, DL4YN, YU5AJJ, YU4DOP, SM8CWC, FK8AL.

14 Mc. C.w.: 2QL: P12AJ*, KG6*, KJ6*, and MP4QAL, MP4QAH, 2AMB: ZM6AR, FO6AG, 2APL, GC3KAV, Alan 3CX: ZM*, DL*, KA*, VR3A, MP4QAK, T12BX*, KH6*, VK1HH*, ZB1AY*, HB9*, LA*, JA*, VS1BJ*, G3DCU*/VK3*, and 4W1AB. Ken 3KR: 1*, 457WP*, OH*, VK1ZM*, DL*, YU*, 3KB: VK1EM (Mawson), YV5AE*. Lee 3KO: KA*, KR6*, OH*, ON*, YV*, SM*, DJ*, KR66*. Fred 3YS: FI-8BB*, KX6*. Bob 4RW: ZD3BFC*, YV5BJ*. Ray 5RK: KA/JA*, 5WO: KC6AJ*, DL7*, Ws* (long path). BERS195: CN8GW, COTAH, DU-1CV, FAZDAP (?), KJ6, KR8, LUISE, PY2CK, JZ0AG, VK1HH, VS1BJ, VS6CG, VS6CV, VS6DB, VU2ET. Dave Jenkins: YV5DE (1120z), FM7WD (1130z), KV4BK, VS1BJ, DL, KG6, G, ON4, FA8ZZ, JA, VS6CT.

14 Mc. Phone: 3KB: KR5OK*, HC1ER*, HC8GI*. Stan 3TE: CT1PK*, DL*, EA*, F*, FA9WD*, G*, GW5XN*, I*, KC6*, KL7*, OH*, PA9*, XE1TR*, 3V8BP*. Harold 8AHC: BVIUS* (Formosa, 14165 Kc.), Europeans* 4BW: ZD3BFC*, OA5N*, HK3AZ*, LU6AAF*, LA5HE*, K541W*, ZB1AJX*, HC1ER*, VR3C*, EA9AZ*, CT1PK*, HC1FG*, HB1MX*. John 5HI: KJ6*, VR2CZ*, KX6*, KH6*, XE1RE*, F*, KR6*, Z55AO* (1030z), 3V8AS*, HK3CZ*, I*, DL*, TG9OM*, HC8GI*, ON*, HC1ER*, ZS1SW*, YV5AO*. 5WO: G*, PILJ*, F*, GD3IBQ*, GW3EL*, PA0DMG*, EA*, KA*, VS6CL*. Tom 6MK: ZD3BFC*, EL2X*, ZD2RRW*, ZS3P*, ZD6RD*, VQ5EK*, VQ3CB*. BERS195: KA0IJ, KR6, KX6, Jim Hunt: ZS1SW, 3V8AS, KTIW, EA9AS, HC1ER, YN1LE, XE1TR, KL7, XZ2ST, VU2RG, VU2ES, VU2SS, KP6AK, DU7SV,

F18BB, ZM6AR, VS6BE, VS2EM, F/8BF, F18AO, VS2DQ, DU1JE, DUICE. Dave Jenkin: OA2A, ZS1SW, T12RM (0734z), G, I, CN8MS, VR2BZ, HC1ER.

21 Mc.: Percy 8PA reports Ws*, HC1FS*, OA4C*, DU7SV*, KAZKS*, JA*, KZ5MB*, KZ5AS*, KH6BCU*, KA8RJ*, KC6ZB*, HC1ES*, HC1PL*, KR6AB*, 4SYL*, JA*, YN1AA* and KZ5CF. 5WO: Ws*, KH6AVH*, VQ2DT*, KA8BK*, W5AXI/MM*, W5*, HC1FS*, HC1EP*, HC1ES*, 6MK: VQ2DT*, ZS*, VQ4*. Jim Hunt heard HC1FS, HC1PL, HC1ES, KZ5AS, KZ5BR, HK5ER, YN1AA, 3L3LA, VQ2DT, VQ4AQ, 4SYL, VS6GZ, VS6CG, AP2L, VS1FK, MF4, KAC, 4X4AC, G3ABH, HZ1TA, KC6ZE, KG4, KA8RK, KA2KS, KA2KC, KA2MH, H6ARN, KH6BCU, KH6IJ, KH6AR, W1DSE/MM, W2ULO/MM, KZKZX/MM, W2ZMM/MM, W3UKY/MM, W3HXE/MM, W3OZA/MM, W4JGZ/MM, W5AXI/MM, W6KUY/MM, W8ULH/MM, Ws.

27/28 Mc.: 3FA reports that KA2KS heard VK signals during the WVE Contest.

Rare QSLs were received by 2AMB: CP3CA, 5WO: CR7AR, AP2Q, EA5AR, OA2A, MP4BBS, YV5CE, OE2HW, ET3GB, 6MK: V5SKU, BERS195: TA2EFA, MD2KP, VK1RL, ZC4IP, V55KU.

Thanks to the Northern California and Southern California DX Clubs, SM5AQQV, W8CZD, ZL1ADU, and VKs 2QL, 2AMB, 2APL, 3CX, 3HG, 3JA, 3KR, 3PA, 3TE, 3WB, 3XB, 3XG, 3YS, 3AEP, 3AHC, 3AXX, 4RW, 5HI, 5RK, 5WO (you should also have been mentioned here in the last issue—sorry Austin, my mistake!), 6MK, and s.w.i.'s. BERS195, Jim Hunt, and Dave Jenkin.

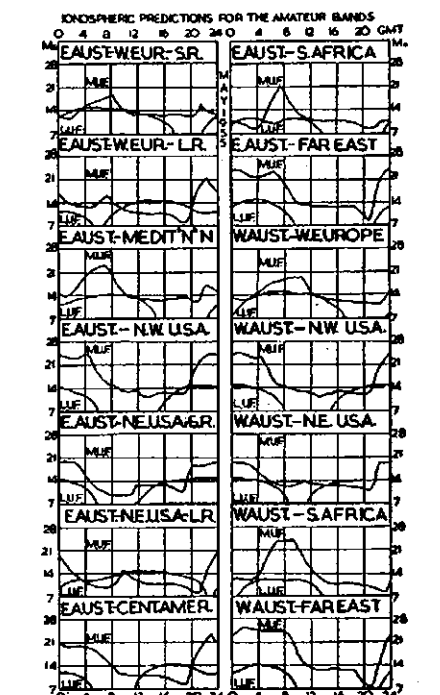
VALE KEITH RUDKIN, VK2DG

Radio Amateurs throughout VK and ZL felt deep sorrow at the untimely death of Keith Rudkin, VK2DG, at the age of 44 years. Keith was always a c.w. man, and during his years of operating on the DX bands he made thousands of friends and gained himself a full score of certificates. On numerous occasions Keith won the c.w. section of the VK-ZL Contests and he also won the c.w. section of the Jubilee Contest. Keith formerly was Radio Engineer at 2ER and latterly at 2NX where he performed sterling service during the recent flood emergency.

His quiet unassuming manner endeared him to all who met him and he will be sadly missed from the ranks of the Hunter Branch.

We extend our deepest sympathy to his wife and sons in their time of sorrow and we know that Amateur Radio will be the poorer for his passing.

PREDICTION CHART FOR MAY, '55



FIFTY MEGACYCLES AND ABOVE

WESTERN AUSTRALIA

NEW SOUTH WALES
The annual election of officers of the V.h.f. Group took place at the April meeting held at the Petersham Technical College when the following officers for 1955-56 were elected:

Chairman: Roy Hart, 2HO; Vice-Chairman: Pere. Healy, 2APQ; Secretary: Bob Winch, 2OA; additional members of the Management Committee: John Miller, 2ANF; Bob Black, 2QZ; Harry Solomon, 2AJZ.

The lecture for the evening was given by Arthur Mead, 2AJA, his subject being "Care and Maintenance of Accumulators," which proved to be most interesting and informative, with the accent on batteries used for mobile/portable work. Arthur described methods of charging, the reason why batteries would not give satisfactory service, and how to tell if a battery is fully charged by the simple method of after gassing has ceased at what was considered the end of the charging period, a charging current is applied and gassing should take place immediately; if there is a delay before gassing starts, a further continuous charging period is required. Arthur also recommended thin plate batteries for portable work.

There was also a very interesting discussion on the search and rescue exercise held in conjunction with the Federation of Bushwalkers when Jim Hooper, their Field Co-ordinator, gave members a detailed summing up of the day's activities from the bushwalkers' point of view, indicating that they thought that the day was very successful and could be, in some respects, improved upon, both from the radio angle and methods of organising a search. However it showed how time could be saved by having searching parties equipped with radio so that contact could be maintained with a search base. During this outing there were four stations operating walkie-talkie equipment in the rugged country in National Park, four mobile stations operating from roads in that area, and a control station at Waterfall with a rear link to Roseville. Members of the Group who took part were VKs 2OA, 2APQ, 2AZO, 2ANF, 2HL, 2YR, 2ATO, 2ALO, 2VL, 2ZAR, and 2HO, together with 20 members of the Bushwalkers' Association.

During the course of the meeting the retiring Chairman, Per. 2APQ, reported on the activities of the Group during the past 12 months. Membership is now 55, with an average attendance of 35 at the monthly meetings. There were nine lectures given and a film night, in accordance with the policy of at least one fixture each month; there were 15 held. These were a few of the points contained in the report and it is understood copies of the report will be included with the Bulletin.

The B.c.l.-T.v.i. Committee, under the Chairman, Bob 2QZ, was also ratified; other members being 2OT, 2APQ, 2OA, 2ALJ. The object of the Committee is to advise, assist and compile data which will help in the elimination of t.v.i. and with this in mind it is hoped that a lecture on t.v.i. can be arranged for the May meeting.

The Direction Finding Field Day, held on 27th March, was most interesting, the uncertainty of the weather apparently prevented more stations taking part in the field, however those who did had an enjoyable day. Stations operating in the field were 2AJZ, 2ATO, 2ZAG, 2ANF, 2AWZ and those at home 2HO, 2HE, 2HL, 2NP and 2ALO. Full details of the scores will be given in next month's notes.

Details of the Autumn Field Day held on 24th April will also be given next month.

Fixtures set down for May are Hidden Tx Hunt on Wednesday evening, 11th, and a two-hour 14c Scramble after the V.h.f. Broadcast on Sunday, 22nd. Listen to the 2WV v.h.f. broadcast at 7.30 p.m. each Sunday night for further details.

Well chaps, this issue completes my term as your scribe and I sincerely thank those who assisted by giving me details of items of interest for use in these notes. Harry 2AJZ has now taken over the job for the next 12 months, so please pass those interesting bits of news on to Harry.—2APQ.

VICTORIA

On Friday evening, 18th March, not far from the hour of midnight, the VK7s were heard by Ben 3RK, who got busy on the telephone to let the gang know. Peter 7PF and Col 7LZ were both worked by several of the gang with good reports at both ends, and during the next couple of days all of the regular Melbourne 2 mx gang were able to make contact. We learnt from 7PF that he made 68 contacts during this break-through, his best being with 3AGD, a distance of approximately 370 miles.

The popularity of the Fox Hunt continues to grow and the last Hunt saw ten cars and one motor bike set off from the starting point.

The fox changed tactics on this occasion and used more the hide and seek methods. On the first run, the fox was successful. On the second, he hid in a lane and waited there for at least half an hour, although during this time curiosity got the better of the fox car crew. Len 3LN, Phyl, Jim 3NY and Clem 3GY, and they left their hiding place to see if anyone that was about and of course the fox car was immediately run down by Ian 3ZAM to make the first catch of the evening. Ian's father, who is his driver in the Hunts, held a call sign in 1913, back in the days of spark transmission and now with Ian entering into radio, his interests have been renewed.

Fred 3YS and Jim 3ABA had a very welcome visitor with them in Bill W2CPN. Bill seemed to enjoy the Hunt very much; he informed us that the idea was a new one to him and very different to anything he had experienced in the United States. The next run was to the Malvern Town Hall, where the fox car stopped in a parking area behind the police station, and again the fox was successful. On the run to the final location, Alf 3IE was successful in running the fox down and then all cars gathered at the home of Jim 3NY for supper and the final rag chew. Two spacemen joined in the hunt for the first time in Ron 3ZBH and Lance 3AHL, they came along per motor bike and sidcar. Suitably garbed for a chilly and slightly damp evening in waterproofs, flying helmets with enclosed headphones and microphone, they could have been two men from Mars. Max 3BQ acted as control station and was assisted with cross bearings from Bill 3ZAC, Bob 3OJ and Eric 3ADU.

We wish to congratulate Glen Jennings on attaining his A.O.L.C.P. at the recent exams. Welcome back on the bands 3QK, from Churchill Island. Ted will be on the DX session each Thursday evening. His frequency is 146.7 Mc. Welcome back also to Frank 3ADX, Bob 3ML, Ben 3GG and Ben 3RK.

We have the information that VK5ZAB, south east of Narracoorte, is putting up a 32 el. beam, 78 ft. high with a 50w. final and he will be 220 miles from Melbourne. Also 5MS, at Mt. Gambler, will have a five over five up by the end of Easter and should make another DX contact for Melbourne.

The delayed v.h.f. meeting took place on 4th Wednesday of last month with a visit by the Group to the Sydenham National Transmitting Centre. We were indeed fortunate in having two of our own members in Perc 3PA and Jack 3JD on duty for the night to act as guides for us. At a virtual v.h.f. meeting held during an informal buffet supper in the amenities room of the station, it was decided to assist the Short Wave Listeners' Group with lectures for their meetings and it was also decided, at the suggestion of the country members of the Group, to run a special get-together meeting in May and we specially would like anyone interested in this meeting to make a note of 18th May as we are hoping for a good attendance so that a maximum of both city and country members can meet each other.

The V.h.f. Field Day held on Sunday, 3rd April, saw 3ZAM at Ben Cairn, 3YS at Kinglake, 3AHL and 3ZBH on the Youyangs, 3LN at Kellor, 3IE and 3VZ at Eltham, 3OJ at Mt. Morton. Although this Field Day was held in conjunction with the National Field Day, no phenomenal reports of DX have come to hand, but on the Sunday evening conditions seemed to be well above average again.—3LN.

SOUTH AUSTRALIA

50 Mc.: Very little activity on this band. 5KC building a new walkie-talkie outfit which should outperform all previous rigs.

144 Mc.: Again activity at a low ebb with most of the regulars threatening 21 Mc. 5BO has been active on 21 with usual low power, carbon mike and piece of wire. 5BC naturally inactive because of huge loss in recent fire which gutted his home. 5HD, 5MT inactive due to pressure of work. Believe 5QR is building ultra modern shack with built-in beam indicators complete with steel tower. Nothing heard from 5LE at Jaiga for some time. Last contact with Len was from Mt. Lofy on our last rush portable expedition.

288 Mc.: A few stations are operating on this band regularly now, viz.: 5LR, 5MX, 5JH, 5SR, 5ZAW, and a few "others." All are using the usual self excited rigs and super regen rx's. Believe there are a few "5PU superhets" in use but these are in the minority. Incidentally, Bob 5PU has completed a new 80w. modulator and this, combined with a 1,000v. tranny from 5MT, should provide a strong signal on any band; let's hear it on 144 Mc. Bob. Have heard some rumours regarding a new 288 Mc. distance record. This one, I believe, is called a "land record," the distance being only 75 miles. The only record on 288 Mc. for Australia is 108 miles.—5MT.

30 Mc.: 6SJ is one of those holding the fort, although time is the factor limiting activity. Sid has threatened 2 mx activity, with things so quiet on 50 Mc. 6GB was worked recently, which proves his license has not lapsed! 6BO is, of course, synonymous with 6 mx and continues to have regular contacts in between shift work. 6WJ has been very quiet on the air, but intense activity has prevailed with construction of t.v. gear. 6HK has at last fixed that feeder!

144 Mc.: A number of new call signs have been heard on the band this month. Ron 6FM was the first to appear, using 15w. to a 2E26 with a 16 el. phased array "on the deck" at the moment. An AR301 loaned by 6ZAV is doing the receiving at present. Ron puts out quite a strong signal considering the "lowly" nature of the antenna. 6ZAS at long last carried out his threat of activity and came on with a thumping signal from his RK34 and 3 el. beam. Another 301 in use here, but as somebody has remarked, these things are fine if you want to break in, but to have more than one QSO in progress at one time—brother!

6ZAA and newly licensed 6BE, Bob Elms, have been having considerable success with mobile operation. It would appear though that in comparative tests with 6TR/M on 50 Mc., the 6 mx mobile signals are about four S points in front. Wally 6ZAA also took the gear along to school to give some of his students a practical demo of Amateur Radio v.h.f. style. Went off very well. 6ZAM has got to the stage of emitting a carrier, but no QSOs as yet. 6ZAV has been having great success with tests with 6BO and 6DW. Don (DW type) gave Don (ZAV type) a report of S9 on phone at one stage recently. 6RK has been very active again with a strong signal. Still further converter modifications have been the order of the day there. Roger's near neighbour, 6ZAK, has returned to the fold with the Clamp modulated tripler. Another exponent of Clamp modulation is 6ZAT who now has the input kicking to 60w. on peaks. Len says the 815 doesn't like a sustained burst of talking though!

6GB claims his inactivity is due to collapse of rx. 6OR has lapsed into silence in the last few weeks. 6ZAZ is very busy on construction of a new high-power tx, using p.p. 61466 which will possibly be operating now.—6HK.

NORTHERN TASMANIA

The longest 144 Mc. opening between VK3s was over, with quite a number of VK3s working their first VK7. Going on radio-sonde readings, a subsidence inversion was reckoned to be low enough by the night of 18th March for 7PF and 7LZ to keep a constant watch on 144 Mc. Carriers were first heard around 2030 and after listening and calling with no result, 7LZ contacted 3BK on 80 mc, who QSY'd to 144 Mc. and was immediately heard and worked by 7PF at 2200 hrs. As it happened, the band was only just opening up and telephones ran hot getting more stations on the band. QSOs followed rapidly and 7LZ and 7PF QRT at 0045 hrs. The band remained open from then until the night of 22nd, but conditions were not as good to Melbourne as the night of 18th.

7LZ and 7PF both worked 3BW, 3BQ, 3YS, 3RK, 3ZAA, 3LN, 3ALY, 3PO, 3ZL, 3AEB, 3PG, 3DI, with 7PF working 3FO, 3CF, 3ANQ, 3ZBH, 3DG, 3AGD, 3ZD, 3GM, 3AKR as well. The greatest distance being about 370 miles to 3AGD. 7PF also heard 3CI and was heard by 3CI, but no QSO. All told, 7PF had 68 DX QSOs with 21 VK3s, 7LZ not doing as well due to a poorer location. C.w. contacts would have been OK, but stations hearing 7PF's phone signal were not listening for 7LZ's weaker signal on c.w. Equipment at 7LZ's was 60w. into QQC06/40 with cascade xtal converter into BC454, 12 el. broadside array. 7PF uses 40w. to 815, rx similar to 7LZ, but using Q Multiplier on BC454 for greater selectivity, 5 over 5 beam 17 ft. high, just erected on night of opening. This is to be pushed up to 30 ft.

7GM will be around any further openings, having found trouble with rx and erected new beam. 7BQ also converter building.

The radio sonde charts showed a constant inversion over Hobart for the opening, but with an inversion over Melbourne only at times, this may account for weakness of signals, not many signals being as strong as previous openings.

D.C.A. operate a Repeater Station on Mt. Barrow, 4,850 ft. high, radiating to aircraft with 70w. output into ground plane aeriels on 122.1 and 119.7 Mc. Also radiating are f.m. tx's on 154 Mc. beamed to Western Junction, which are on continuously, modulated with 1000 c.p.s. tone. These have been heard at Beauty Pt., which is broadside to the beams.

Just to remind the VK3 stations that conditions look good, don't forget to look for VK7s and don't be frightened of c.w., it has the advantage on v.h.f. as it has on h.f.—7PF.

SHORT WAVE LISTENERS' SECTION*

S.W.L. GROUP REACHES TO SWEDEN

From Sweden we received mail from two new members, Len Thornbult, of Bjornbovagen, Karlskoga, 5, Sweden, and his companion, Bo Ericsson, of Box 465, Valasen, Sweden. To you Len and Bo we welcome you and wish you very pleasant future DX. Len states that their hobbies are DXing, stamps, and souvenirs and would like to hear from any interested Amateur. They heard of us through "Radio Australia," so we must thank Graeme Hutching, of "Radio Australia," for publicising our activities to the world.

VICTORIAN GROUP

The last meeting of the VK3 S.w.l. Group met on 29th March at 191 Queen Street. Much discussion took place on the future activities of the club and keen interest has been aroused concerning the coming Hobbies Exhibition which is to be held during the month of August. Reports have been received to state that the W.I.A. have been allotted a stand and this year the s.w.l.'s will help fill the display.

Meetings are held on the last Tuesday of the month. At the May meeting, representatives of Eddystone, the makers of Eddystone Communication equipment, will give a lecture and demonstration of the famous Eddystone equipment. The June meeting will take the form of a constructional night. Bring along any gear and problems you have and we will endeavour to iron them out for you.

SOUTH AUSTRALIAN GROUP

We were pleased to receive from Mac Hilliard a report of the March meeting of the VK5 Group. This Group was formed in February. The first meeting took the form of a general discussion. It was decided to elect officers at the March meeting, however only eight members turned up and it was decided to leave this until membership had increased. Jim Paris, who is the Associate member on the Council, was Chairman.

It is hoped to further the interest in general short wave listening by arranging a display at the Hobbies Exhibition, which is to be held in Adelaide during March.

The VK5 S.w.l. Group meet at the Central Methodist Mission in Franklin Street, Adelaide, at 3 p.m. on the second Monday in each month.

To the VK5 Group we in VK3 wish you every success in the formation of your Group and all the best DX. By the way, boys, how about arranging an Interstate s.w.l. contest? Write and let us know your reaction to the subject.

HEARD ON THE BANDS

144 Mc.: From Gerard Lane—3ZAA, 3ZAC, 3ABA, 3KD, 3ZL, 3ACR, 3ATB, 3ALW, 3YS, 3PG, 3ZAR, 3ALY. From 3ZAQ we received 3BH, 3RK, 3YS, 3ML, 3BQ, 3CP and 3ZAA.

14 Mc.: Michael Ide heard VS2, KA2, CT1, 3ZAQ heard 4S7, VS2, 4S7, VK9, JA8, KR8, JA3, KA0, KH8, ZL1, ZL2. Len Cragen heard VK9, ZL1, JA4, KA3, KR8, KR7. Mac Hilliard heard ZS1, ZS6, TT2.

Broadcast Band DX: From Gerard Lane, the following DX tips are to hand. 2YA Wellington, N.Z., 570 Kc. at 1900 hrs. 2ZB Wellington, N.Z., 880 Kc. at 1820 hrs. JOA8 Japan, 880 Kc. at 0200 hrs. VUD8 India, 710 Kc. at 0210 hrs. JOXK Japan, 920 Kc. at 0130 hrs. VOA Phill. Isl., 1140 Kc. at 0110 hrs.

Short Wave B.C. Bands DX: From Gerard Lane—On 15.24 Mc., Voice of Germany, heard R5 S8/9 at 2202 hrs. On 11.890 Mc., GWW in London at R5 S8/9 at 2200 hrs. On 5.060 Mc. YDJ in Indonesia at R5 S6/7 at 2000 hrs. On 6.185 Mc., KCBR, Dixon, California, U.S.A., R5 S8/6 at 2100 hrs.

RULES OF VICTORIAN S.W.L. GROUP

1. Membership is open to anyone interested in the non-transmitting side of radio, particularly for listeners, no matter what bands they listen on, i.e. short wave broadcast, broadcast band, or Amateur bands.

2. Membership shall be essentially same as Associate membership to W.I.A., except that those under 15 years no fee shall be charged for membership. All fees are as for Associate membership.

3. From the general members each year there shall be elected a President, Vice-President, Secretary, Magazine, Correspondent (and 3WI Broadcast), and any committees that are deemed necessary (i.e. contest, etc.).

4. President shall be responsible for conducting of all meetings, etc., and to act as Chairman for same. Vice-President to act in his capacity when President is absent. Secretary to act as group correspondent, etc. Mag.

* Compiled by John Wilson, 37 Rayment Street, Alphington, Vic.

correspondent to prepare notes, etc., for "Amateur Radio" and for 3WI Broadcast.

5. The Group's aim is to cater for all persons interested in radio. Provide a meeting place to discuss events, etc. Arrange demonstrations and exhibitions of equipment relating to their hobby. Organise contests for members' participation and competitions as it sees fit. To encourage its members into the field of Amateur Radio with its associated attractions.

SEND THOSE ENTRIES IN!

The Contest closed on 31st March, 1955. Entries to be forwarded to John Wilson, 37 Rayment St., Alphington, Victoria, not later than 80th June, 1955.

Entries to contain the following—
(1) All cards to be sorted into section entered, i.e. 1. Amateur; 2. S/W Broadcast; 3. Broadcast band. Section 4 will be determined by judges, who will judge each section and then tally individual totals into an overall number.
(2) A list compiled by entrant of all cards sent (two copies), one will be returned upon

receipt of cards and will be official notification to entrant of receiving entry. It should also contain formal notice of entry into contest; e.g. I wish to enter the following verifications into Contest, Section/s, etc.

All entries will be returned as soon as judging is completed. Judges' decision is final. Winners notified. Results in "Amateur Radio" for August and through VK3WI on Sunday Broadcast on 31st July.

It is advised for safety sake to send your entries by registered post. All care exercised while in judges' hands. All entries must be received at the above address no later than last mail 30th June.

EDITORIAL

(Continued from Page 1)

possible, for they are the Amateurs of the future. I might also mention our new Limited Licensees who have now gained a place in our ranks. It should be your personal aim as a member to recruit as many of these and other Amateurs as members of the Institute. It is the policy to foster any means of encouraging membership, with the ideal of encompassing all licensed Amateurs within our ambit.

Another major task of the Executive is that of Emergency Networks. The disaster which so recently befell N.S.W. is still fresh in everyone's mind, and has once again demonstrated the worth of the Amateur to the community. Nothing but the highest praise can be extended to them for a job well done; and yet I am sure the N.S.W. Division themselves would be the first to admit that improvements could be made to the efficiency of their network. A National plan is imperative, into which Divisional nets can be integrated quickly in any emergency. Your Executive has already promulgated such a plan to the Divisions for approval. This plan should receive your earnest consideration and support, and it is our endeavour to bring this plan to fruition during the year.

It is most important for the Institute in particular and Amateur Radio in general, that we have direct representation at the next International Radio Convention, and if this is to be, a preliminary Region 3 Conference is needed. An opportune time for such an event would be during the Olympic Games in 1956, and although this will in itself require careful organisation and finance, we feel it is essential in order to co-ordinate the views of other Region 3 Societies, so that in the International event we can speak with one voice. This problem is already under consideration, and we hope to present Divisions with a workable scheme very soon.

A complete revision of the Policy Book is under way and should be with Divisions for confirmation within a month or so. All minutes and motions of past Federal Conventions will be carefully examined to see that no motions have been overlooked. Many other matters of equal import will be dealt with during the year, and finally I will reiterate my earlier statement that every effort and energy will be directed towards assisting the Institute as a whole to attain a status among authorities and public alike which an organisation such as ours so rightfully deserves. With your confidence, your energy and your zeal guiding us, such a goal becomes reality. "United we stand, divided we fall."

W. T. S. MITCHELL, Federal President.

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DESK OR HAND MICROPHONE

MIC 36

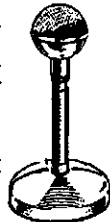


£6/18/6

Housed in attractive plastic case, this Microphone is ideal for home recording and public address, etc. Response unexcelled for its size and price. The performance is not affected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s. Recommended load resistance not less than 1 megohm dependent on low frequency response. Can be supplied complete with switch and floor stand adaptor as required at a small extra cost.

TABLE AND STAND MICROPHONE

MIC 22



This omni-directional Microphone is robust in construction, with a pleasing appearance. Vibration, shock or low frequency wind noise will not affect the performance. The low frequency cut-off is dependent on the load resistance. The cut-off is given by the quotation, $F = 80 \div R$, where $F =$ c.p.s., $R =$ megohms. An adaptor (floor mounting) is available at low extra cost.

SPECIFICATION

Output level = -50 db ref. 1 volt/dyne/cm².
Output impedance—equivalent to approximately 0.002 uF. (0.8 megohm at 100 cycles).
Frequency response—substantially flat from 40 to 6000 c.p.s.

Recommended load resistance—not less than 1 megohm, dependent on low frequency response. £9/18/6

HIGH QUALITY MICROPHONE

Designed to meet even the most exacting requirements, this Microphone incorporates the world famous floating crystal sound cell construction. Its special characteristics are that its fine performance is not affected by vibration or shock. The fidelity is not impaired by low frequency wind noise.

MIC 16



£24/19/6

SPECIFICATION
Recommended load resistance—not less than 1 megohm.
Output level -65 db ref. 1 volt/dyne/cm².
Frequency response—substantially flat from 30 c.p.s. to 10,000 c.p.s.
Directivity—non-directional.
Size—2½" spherical diameter.
Connector—Standard international 3-pin.

GENERAL PURPOSE MICROPHONE

MIC 35



£2/15/-

substantially flat response from 50 to 5000 c.p.s.

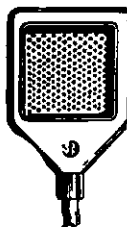
SPECIFICATION

Output level: -55 db ref. 1 volt/dyne/cm².
Cable—approx. 4 ft. of co-axial supplied.
Weight—6 ozs. unpacked, 7 ozs. packed.
Dimensions—microphone only 2½" x 2½" x 1"

The MIC 35, undoubtedly the best value ever offered, is ideal for amateur transmitters, public address, etc. Housed in an attractive die-cast case, it features a high sensitivity and substantially flat characteristics. Provided with a built-in shunt resistance of 2 megohms, it will, when connected to the grid of the input valve, give a

LAPEL MICROPHONE

MIC 28



£5/19/6

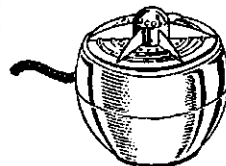
Designed to give freedom of movement, this Microphone is small and non-directional. Housed in a soft moulded rubber case, which gives protection against shock, it is provided with a pin at the rear of the case for pinning to the lapel.

SPECIFICATION

Output level—approx. -55 db ref. 1 volt/dyne/cm².
Recommended load resistance—5 megohms.
Frequency response—level throughout the whole of the audible spectrum.
Capacity—0.0015 uF. at 1000 c.p.s.
Impedance—100,000 ohms at 1000 c.p.s.
Cord—6 ft. shielded cable.
Size—1-9/16" wide x 2¼" long x ¾" thick.

HAND OR DESK MICROPHONE

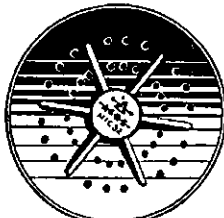
MIC 33



£6/18/6

This Microphone has been designed for the high quality public address and home recording field. High sensitivity and flat characteristics are obtained by a specially designed acoustic filter. Housed in an attractive plastic case with an unexcelled response for its size and price. Unaffected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s.

MICROPHONE INSERTS



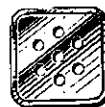
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MIC 32 insert, £2/15/6; all others, £1/19/6.

MICROPHONE INSERTS



(MIC 23 illustrated)

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FEDERAL, QSL, and DIVISIONAL NOTES



FEDERAL

MEMBERS OF ADVISORY COMMITTEES FOR 1955

The following Amateurs have been appointed to the Amateur Advisory Committees for 1955:

New South Wales

Messrs. G. T. Bruce (VK2GT), N. MacNaughton (VK2ZH), R. W. Patterson (VK2AJW), J. C. Pinnell (VK2ZR), L. H. Taylor (VK2CL), V. H. Wilson (VK2VW).

Victoria

Messrs. R. A. C. Anderson (VK3WY), A. L. Brehaut (VK3SB), C. R. Gibson (VK3FO), G. W. Manning (VK3XJ).

Queensland

Messrs. J. G. Files (VK4JF), G. Harmer (VK4XW), A. Harris (VK4TN), H. T. Hewitt (VK4PD), L. E. H. Mallinson (VK4LM), J. F. Pickles (VK4FP).

South Australia

Messrs. B. W. Austin (VK5CA), C. A. Doddridge (VK5CD), A. S. Little (VK5AF), H. K. Stacey (VK5XA), C. D. L. Tilbrook (VK5GL), D. R. Whitburn (VK5BY).

Western Australia

Messrs. W. J. Howse (VK6ZAA), N. F. Odgers (VK6NF), J. E. Rumble (VK6RU), A. V. Savery (VK6TY), F. A. T. Tredrea (VK6FT), F. H. Turner (VK6UF).

Tasmania

Messrs. R. M. Barker (VK7RM), A. Hubbard (VK7AK), M. H. B. Hurburgh (VK7MH), L. R. Jensen (VK7LJ), T. F. Moore (VK7FM), R. D. O'May (VK7OM).

LIST OF SUCCESSFUL AMATEUR CANDIDATES

The following is a list of candidates who were successful at the examination for the Amateur Operator's Certificate and Amateur Operator's Limited Certificate, held on 11th January, 1955:

New South Wales

- *R. N. North, 18 Gladstone Street, Bathurst.
- *W. B. Jones, P.O. Box 231, Griffith.
- *G. Harriman, Farm 1850, Lake Wyangan, Griffith.
- *W. O. Hill, 15 Morgan Street, Petersham.
- *B. Holland, 9 Downshire Parade, Chester Hill.
- *A. D. Nutt, 12 Austral Bldgs., Anzac Parade, Maroubra.
- *K. S. Powell, Lot 76, Kanooka Street, Carlingbah.

Victoria

- J. Spark, 20 Marshall Avenue, Moe.
- D. J. Hall, Nullawarre, via Allansford.
- H. Dzialowicz (name changed by Deed Poll to H. Denver), 9 Reid St., Murrumbidgee.
- B. P. Everett, 95 Victoria St., Warragul.
- *A. J. Bowman, 476 Nepean Highway, Frankston.
- *W. I. Dawson, 14 Tait Street, Footscray.
- *A. F. Elliott, 31 Fenton Street, Ascot Vale.
- *B. Heinze, Liverpool Road, Kilsyth.
- *I. R. Woodman, 24 Fewster Road, Hampton.

Queensland

E. J. Leather, Jefferson Lane, Palm Beach.

South Australia

- *J. A. Gibbs, 209 Hutt Street, Adelaide.
- *G. A. Tidy, 49 Balcombe Ave., Flindon West.
- *A. L. West, 10a Alexander Avenue, Ashford.

Western Australia

- J. R. Elms, 131 Shepperton Rd., Victoria Park.
- *T. S. Long, 27 Armadale Cres., Mt. Lawley.

Tasmania

- *G. S. Jennings, P. O. Box 210, Queenstown (address now 35 Royal Pde., Parkville, Victoria).

*Qualified for Limited Certificate.

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:

Section 59: By inserting after the words "The Tasmanian Division," the words "The Papua-New Guinea Division."

Section 29(a): By inserting immediately after the word "Proficiency," the words "or Limited Amateur Operator's Certificate of Proficiency."

FEDERAL QSL BUREAU

RAY JONES, VK3RJ, MANAGER

Rob SRG reports having the first QSO with VK1EM at Mawson. Eric stated that conditions for QSOs with Australia have been very bad

and that SRG was the only VK heard to end of March. In an interesting letter describing the trip down to Mawson and the short landings at the Vestfold Hills, Larsemann Hills and Sandjeford Bay, he mentions that as at end of February he had seen more sunshine in the few days since his arrival at Mawson than he saw for the whole year while at Macquarie Island.

C. S. Feng, P.O. Box 48, Goeku, Ryukyus, writes seeking correspondence with Short Wave Listeners in Australia.

The new address of the QSL Bureau for Greece is: George N. Zarifis, 10 St. Fanourion Street, Pangrati, Athens, Greece.

The new address of the Irish Radio Transmitters Society QSL Bureau is: E16U, Ian Morris, 9 Shanrath Rd., Whitehall, Dublin, Eire.

Fag. of X1NP, is back again around the same location and on the same vessel. This time he has a sister ship with him and the Amateur aboard is signing X1NE. At time of QSO vessels were off Palm Passage, out north-east of Townsville, on the Barrier Reef.

Alan 3CX advises that anyone needing a QSL for QSO with CP1BX during 1951-52 may obtain same by writing T12BX, Ted Westlake, care U.S. Civil Aviation Mission, U.S. Embassy, San Jose, Costa Rica.

The QSL Bureau address for Portugal is: R.E.P. Servico QSL, Rua D Pedro V, 7-4, Lisbon, Portugal.

Russell Fraser, ex-VK1RL, now resident near Sydney, advises that he still intends to QSL all contacts made while he was on Macquarie Island in 1953. There's no time like the present, Russ.

TA2EFA, which was much in evidence on DX bands in 1952, was operated near Izmit, Turkey, by Commander Sturkey, of U.S.N., whose present QTH is 2734 Bradley Circle, Falls Church, Va. U.S.A., and his present call is W4PAZ. His YL signs W4ETR. Both would welcome VK contacts.

BERS195 says that it is rumoured that the prefix for the Tokelau Island is likely to be changed to ZK3 in lieu of ZM7 as at present.

Cards have commenced to arrive from V55KU who operated on 14 Mc. c.w. from Seris, Brunel, at the latter end of 1954. His home call is G2KU. So far the cards received relate to contacts made to the end of November last. 'Tis hoped that Ray carries on with the QSLs to the end of his period of operation in December, as writer has a personal interest in one of them.

NEW SOUTH WALES

The Annual General Meeting of the Wireless Institute (N.S.W. Division) was held at Science House, Gloucester Street, on Friday, 25th March, before a very large gathering. The President, J. Corbin, 2YC, took the chair and welcomed members and visitors present. A report was given regarding the satisfactory progress of the Co-Operative, but it was stressed that more subscriptions are still needed and it is hoped that more members will subscribe to this organisation. Please send all subscriptions as soon as possible to the Secretary.

The election of officers was conducted and resulted as follows: S. Bourke, 2EL, 147; G. Bruce, 2GT, 133; J. Corbin, 2YC, 147; W. Lewis, 2YB, 143; D. Pollard, 2ASW, 140; C. Quin, 2AWQ, 132; B. White, 2AAB, 112; R. Williams, 2ARW, 74; G. Wilson, 2AGO, 85; L. Farr-Smith, 2AOJ, 83. The first named seven of these candidates are thus elected for the coming year.

Following the election of officers, there was a spirited discussion on all aspects of the part played by Amateur Radio in the recent food emergency and many angles were presented for further study by Council, where these matters will be deliberated and in turn presented at a subsequent general meeting as a plan which can be followed in such an emergency. Council will welcome any further comment country members may have on this matter.

The meeting concluded at about 10.45 p.m. and a recording was played to members, the

SILENT KEY

It is with deep regret that we record the passing of:—
VK2DG—Keith Rudkin.
VK5CR—Charlie Cheel. 1st April, 1955.
VK7MR—Murray Richardson. 4th April, 1955.

description by the operator, Norm Casey, of his difficulties in establishing the Gunnedah Flood Control Station.

BAND JOTTINGS

At this season of the year it is found that there is a sizeable exodus to Urunga, on the North Coast of N.S.W., and of course it is the occasion of the North Coast and Tablelands Convention in a setting of this beautiful part of the State. No doubt, owing to the ravages of the recent disastrous floods, there will be many regular attenders who will be too busy to attend and we hope at the same time to have a large gathering and a successful Convention. Zone Officer, Noel 2AHH, has been in hospital recently, suffered an operation for appendicitis, but at the time of writing states that he is much improved in health and will most certainly be taking his part in the big event towards which he has done so much work.

More notes from the North Coast state that Alb 2UC has also had a spell in hospital and we hope that he is also doing well. 2SR has been operating portable from Yamba while on holidays and has now returned to the home QTH at Grafton; took part in the N.C. nets. 2AGM takes up duties at Lismore Exchange, so more will be heard from there. Blue 2AEU is anticipating we hear; best of luck. Blue 2HC from Quirindi is a very busy boy, has literally miles of fencing down following the floods and is now getting organised. 2WT heard from time to time still putting the solid signal down here and to most parts for that matter. 2YU from Tamworth, who formed a valuable link in the flood emergency, expects to make the trip to Urunga also as do many others from that area. Nothing heard of late from 2AFS, but was in the big smoke recently.

2ADE has a new car and we hear that Charlie and Doc 2LH are spending a lot of time on the seaboard. 2RK, Murwillimbah, we have no news of him as yet, but hope that all is well up there and the same applies to 2LR at Kyogle. Wish you fellows would drop us a line some time.

2PA and 2AVG very busy with one thing and another, will all be at the Convention. Ted has been busy tying up the loose ends and has been assisted at this end by 2FH in no mean manner. Leith 2EA has been getting around by Duck and since he is in the Forces, has a real story to tell; thanks for the letter. Leith. Terry 2AJS supplies a great amount of detail, thanks Terry; is doing well up at Grafton as is 2OE and the rest of the boys.

From Suburban Sydney we do not have reports normally excepting those sent by 2NO, but this month we have received a nice note from Vic 2AWN reporting on a function held recently at the home of Bill 2AJL. Bill and his understanding wife recently held a combined new QTH warming and "welcome home" party to that very popular new countryman—Len 90K—and his charming XYL who are back in Sydney on leave. Len of course will be remembered as 2AOK. A number of local Amateurs and their XYLS and YLS enjoyed Bill and Phyl's hospitality and learnt a lot from Len and Jean of Norfolk Island. According to Jean, Norfolk Island is a Paradise—for men. One thing about the island from the Amateur's point of view is its popularity in the DX world. Jean has started a valuable collection of air mail stamps which she expects to be valuable in about 299 years time. You should be able to retire on the proceeds of the sale Jean.

Len hands first prize to the W boys for organised working of his station. According to Len, they queue up one behind the other and do just the right thing at the right time. I dare not tell you his nomination for the rudest country representative—no names—no pack drill. A very enjoyable evening was had by all and Bill and Phyl are nominated as No. 1 host and hostess as organisers. On behalf of the guests, thanks Bill, thanks Phyl.

Horrie 2FA still troubled with that demon b.c.l., but gets around a bit at the same time. 2AKV will be in Sydney again, possibly will see the Show. Greg. 2ANP is operating from the Sydney Showground for the duration of the Easter Show and will be making many contacts on 40 and 20 mx. George 2AUR is going to make a hurried trip to Liverpool; speaks Malay quite fluently also. 2APT takes on a new job, wish you luck. Jack in the new sphere, but why be one of those stuck in the mud salesman like George? Bert 2AGW hears and works the DX very frequently, may possibly have new location soon. Barry 2AAB, a new member of Council, did sterling work in operating 2WI; has headed north and will finish up at Urunga. 2ASW also has the same

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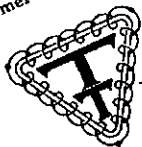
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QUEENSLAND

March meeting was the Annual General Meeting for the election of officers. As there were only three nominations for Council, the old Council remains plus these three to bring the number up to the required 12, as the Council has been working short handed. The three new members are Frank 4ZM, Keith 4DG and Jim 4PR, whom we welcome to the Council. The meeting was the best attended for some time, with a few visitors in attendance. After the election of officers, the meeting carried on with plans for the Queensland Industrial Fair and since then all and sundry have been hopping hither and thither getting the stands together to make tip top show of it, and at the moment of writing everything seems to be going to plan and promises a good show by this Division.

The Annual Dinner proved one of the most successful we have had for some time and we must thank Arthur 4AW for his efforts in the organising of it. The dinner, the speeches, and the liquid refreshments were just right for the occasion. Some fine films were shown by Ernie 4GE of topical interest, but the highlight was the tape recording from the Federal President, though not forgetting the humorous recording of the gang working at the Fair. The only disappointment was the absence of country members, but with the floods intervening, it was expected.

The May Convention at Palm Beach is getting into swing and to date looks like being a bumper "do" and a possibility of a large attendance, so make it a date.

PRESIDENT'S ANNUAL REPORT

The past year has been an onerous one for the Council, insofar as we have been short staffed owing to retirements, first the elected President, Mr. H. Murphy, through illness, then the Secretary, Mr. E. Moore, retired suddenly, leaving us with the position of incomplete records and about three months work to catch up on. Myself filling the first position, though illness has prevented me giving it the time I would have liked to have put into it. The Secretaryship was taken over by Mr. W. Young and he has more than ably devoted his time to this necessary function of the Division.

Through all this we were handicapped by the lack of support of the membership at our general meetings. The average attendance being just sufficient to make a quorum. In fact some meetings were held without sufficient members for the said quorum. This apathy on the part of the members is very hard to understand. I've given it much thought and cannot put my finger on the cause.

We have had some good lectures on various subjects, also presented films of topical interest, but in the main, has failed to rouse the support expected. I do state here, most emphatically, one can only get out of an organisation, as much as the work they put into it.

With these set-backs, we have managed to forge ahead and we have now a membership of 191, alongside of 154 for the previous year. This membership, by the way, will be shortly depleted by the transfer of the New Guinea members. While our efforts to re-organise our Council was going on, we were met with the task of submitting to Federal Council the transfer of VK9 to Divisional status, which I am pleased to say is now finalised and only waits the VK9 members' application for transfer. During this, moves were initiated by 4GG to form a group on the Downs and we must thank him for the gratifying results as we have now a group there functioning as the Downs Group. Rockhampton was quick to follow this move and by the time the Downs Group was functioning, so also was the Rockhampton Club, with most of the transmitting members of Rockhampton behind it. They have now become the Rockhampton Branch of the W.I.A. Qld. Division, with 16 members and 7 associates. Townsville was also in the picture by this time and with the help of the Past President, Mr. H. Murphy, a club was formed by our members at Townsville.

I am pleased to report these Groups are functioning to the satisfaction of all parties concerned. Though the main initiative was taken by members in these localities, the spade work meant extra burdens on our Secretary and Mr. W. Young was hard pressed to keep abreast with it all and he won through and is deserving of a vote of thanks from all members.

Ipswich gang maintain active membership and hold frequent hook-ups to discuss their affairs. Gympie seems to be inactive with a possible exception of 4HZ.

The beginning of the year heralded the formation of a Listeners' Group in this Division, and there is a possibility of a large group here. To date, some 28 members are registered and many more persons are interested. We should in time benefit by their interest in our hobby by becoming active transmitting members. To them we should give our utmost support and every encouragement.

spoil it on him. I've had my fun spoiling Fantasy's holiday. Compilation Dept. in full force for his first portable contact! Oh boy and ha, ha!!

Now for the National Field Day. Some people are not happy about the 1955 show, as was shown at the general meeting. Possibly the spirit of the thing has been lost or the idea behind it has been inadequately publicised. How many portables were out in other States? Score here, one VK2 and one VK5. VK3 did better, six h.f. and 17 v.h.f. stations. There may have been more, but there was still not enough. To go a step further, what happens to the home stations? All too busy to get on for 30 minutes and work those who do go out. Did any portable get 30 or more contacts in 12 hours? I very much doubt it.

The next meeting will be held at M.T.C. on 4/5/55 when Syd Clarke will present the second part of his lecture on the "Home Workshop."

80 METRE TRANSMITTER HUNT

Over fifty attended the March 80 mx Tx Hunt which was held in perfect sunny weather. The tx, which was hidden by Jack 3VZ and Alf 3IE, was located deep in the midst of exceptionally dense bush on the cliffs that rise at the back of the beach at Hampton. The winner was Laurie 3ALY, second place went to Reg 3ZAD and third place to Bob 3NZ. Welcome back to the hunt Bob after your trip abroad. Although the winner, Laurie 3ALY arrived on the location within half an hour after the signal had come on the air, as did most of the other competitors, it took him over another half an hour to actually locate the tx.

The antenna, a dipole, which was fed up through the trees and extended in each direction for a very considerable distance, certainly tricked the gang and had them tramping up and down through the bush; some felt they must have hiked as far as Beauramis searching for the tx. There were two rather late comers to arrive at Hampton; one was Bob 3OJ, who came there via Craigburn and Kal Kello, and the other was Len 3LN, who went to Fern-tree Gully, to get a cross bearing (better think up a better one next time Len—Ed.)

After the tx had been located, the gang adjourned to the beach where the XYLs and children enjoyed the sand and a swim, and the OM—well, they just talked radio! Thirty-five of the number finished the day off having a picnic tea on the beach together.

CENTRAL WESTERN ZONE

Alan 3HL has been on holidays at Dromana, so hope you have had a nice holiday Alan and expect to hear more about it one of these nights on the zone hook-up. Keith 3AKP has not been active recently, but has been busy putting final touches on his new home and garden, so now expects to be able to spend more time on the air. Jim 3DP has been building a new super rig for the 20 mx band; is now almost finished, so expect to hear of plenty of rare DX reports soon.

David Goldsworthy, Associate member, is at present sweating up the code and we hope that he soon becomes a full member. Best of luck David. The Horsham boys can be heard on certain bands. Merv 3AFO keeps that city on the map in the zone hook-up and Byron 3TA is generally active on 20 mx.

NORTH EASTERN ZONE

Col 3WQ certainly made a good job of the North Eastern Zone notes for the 3WV broadcasts a while back (albeit that was the time Andy 3FD was married—Ed.) Syd 3CI has been active on 2 mx constructing a new 32 cl. beam and also working our 2 mx visitors. Gordon 3AGV and John 3AGD. Here Jim 3JK was able to improve the shining hour, getting help to erect a 16 cl. mx antenna, while Jack 3AKP was able to work Gordon on 80 mx. Howard 3YV created a pleasant situation by making the March hook-up, but Bruce 3QC is not mentioned yet. Ron 3AQG is still setting up his gear, while Henry 3HP was making up an elementary h.f. rx. Des 3BP has been able to work 30 countries in 30 days just recently with his various antennae. Frank 3ZU is still handicapped by one thing and another. Hugh 3AHF was away on holidays at time of writing, while it is not known what Lex 3AIL is doing at the moment, it is known that Vic 3ABX is about and Jack 3PF is busy with sheep.

Murray 3HZ is fairly busy, but data on the activities of Alex 3AT, Peter 3APP, Brian 3ASF, Les 3ALE and Johnny 3ACK is not available. Keith 3JC put in a lot of time sleeping during the v.h.f. party trip to Mt. Hickey recently, however Alan 3UI ground away with some success with that new v.h.f. mobile rig on 2 mx. Tom 3TS is still waiting for the a.c. power, but George 3GD is apparently quiet, and Stan 3AGT is painting his house. The North Eastern Zone hook-up is now held every Sunday morning at 0930 hours local time, and the Annual Convention is due in a month or so.

idea with 2AXZ on the hook. 2CE is busy re-building b.c. sets, going in for superhets these days, his hook 2ATW has had trouble, the sanitary men dug up his beautiful garden (designed by Millie) up on him and he has been a little busy restoring the beauty. Jack 2JP off to Sussex Inlet for a spell again. Mollie takes the wheel in hand these days, does a good job too.

The Zone notes emanate from Tumut on this occasion so that we must try to survey the scene beyond our limited horizon (prospective v.h.f. contacts to the west and south please note). The flood emergency had fortunately not affected this zone up till now, but 2DO and 2AQF were heard supporting the boys up north to good effect. 2WH up to his earphones in flood traffic was forced to abandon the nightly Tumut-Forbes v.h.f. parties. Keith 2ZAA made news with the first Tumut-Sydney QSO on 144 Mc. and he has repeated it so often since that it is no longer news. 2ANF provides the Sydney end of the link. Ross 2PN has heard and been heard by the same Sydney station and 2BQ is wondering how they do it. However all the Tumut stations have little difficulty now in working 2WH on 2 mx, signals are consistent over this 130 mile path. An effort was made to contact 2AJO, 3ATN and 3CI, but except for weak signals heard by 2ZAA from the direction of Coolamon (no offence meant James), nothing eventuated.

Eric 2BY and Stewart 2FL were very welcome visitors to Tumut recently. Stewart had news of the rapidly expanding Amateur population of Griffith and we are looking forward to some really comprehensive zone hook-ups on 3.5 Mc. when the QRN subsides.

VICTORIA

The April meeting of the VK3 Division (the Division that leads the World) was held at M.T.C. on 6/4/55. This was the Annual Meeting, and for a change was a bright show. Those who stopped at home missed a good turn. Even the General meeting following the Annual Meeting was a good show, but I'm getting ahead of myself.

Only sufficient nominations were received (or coerced) for Council, so no ballot was necessary. As I heard it, the names were Messrs. Gibson, Robinson, Charles, Ball, Albrecht, Marsland, Dennis and Duncan. Must ask Col to QRS when reading names.

Much discussion was held about election of President, so much so that I'm still hazy about the outcome. Will report on this score later. Don't know who nominated this bloke Charles, but please accept my personal thanks. May there be three Council meetings per week from now on: I might get a chance to work some DX in future. The 50 countries start won't mean a thing!

Despite pleas for nominations for position of Federal Councillor for the last three months, there were no takers. 3SX spoke too loudly at the meeting and before he knew it, the job was thrust upon him. Trust 3ZS! He'd sell an electric fan to an Eskimo.

There are no new full members this month, but quite a list of Associates. Here they are: A. Beasley, K. Campian, R. Elkin, A. Farrow and Mrs. P. I. Moncur. I move that Phyl's subscriptions are overdue since 1952 and that they be paid forthwith. Anyhow, I'll bet it won't be long before she is a full member, but if she carries out her threat to be a "c.w. girl," I can see discord in the 3LN domicile.

I've received a very stiff letter from the Technical Editor reminding me that he is urgently in need of articles and as Divisional Sub-Editor it is up to me to do something about it. Well what about it you fellows surely some of you can put pen to paper and give out with the gen on some piece of equipment you have built. Now here is a suggestion. We number approximately 3,000 in VK. If you form into groups of five and do one article between you, we will have sufficient material to keep us going for 13 years or more. You don't believe me? Well work it out for yourself! Suggestion number two: Have you converted or modified any disposals equipment in a manner not already published? OK, write and tell us about it. Now I've made peace with said T.E., back to more mundane matters.

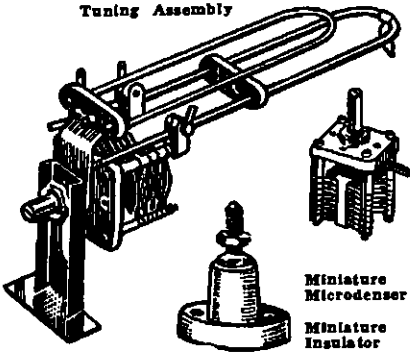
Before SPS beats me to it, here is the VK5 news about VK3. 3AJI and 3MZ went to the City of Pubs for Easter, drove over Thursday night and back Monday. 3LM is going over in a week or so. 3OM also called on 3MZ and others during Easter. 3MZ is sure having lots of visitors. 3BH went over by train during the month and spent his holiday in hospital. Bad luck Charlie. Glad to know you are OK again.

Now this Parsons fellow. He does come on the air occasionally! I know, I've heard him, in fact I spoke to him. He was almost polite until he knew who he was speaking to, but then—well read the VK5 notes of Doc. 5MD. They probably cover the story and I'd hate to

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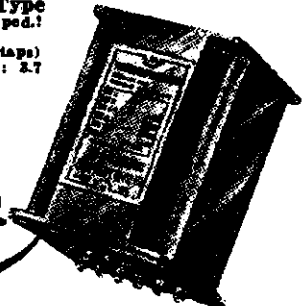
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Financially we are holding our own. A complete balance sheet will be presented at a later date in "QTC."

Our QSL services are handling some 200 to 300 cards per month, both inward and outward, and they are being handled very speedily at both Bureaux. The inward officer, Mr. J. Files, thanks all who supply stamps when requested.

It is gratifying the support the VK4 Intra-state Contest received and I hope the 1955 event gets the support it deserves. The National Field Day had very little support last year. Two members in this Division submitting logs. The R.D. Contest attracted about the usual logs, but the points to make a place were not sufficient. The VK-ZL DX and Ross Hull Contests appear to have an interest to many VK4s and they usually score well in both these events.

The activity of the V.h.f. Group has shown a great increase, especially on 144 Mc., mainly due to the issuing of the A.O.L.C.P. and the increased range of v.h.f. contacts and specialised receiving gear. During the year contact between Brisbane and the South Coast was made on 144 Mc. This path was thought hopeless, but now found satisfactory; contact can be made on many occasions. An opportunity to check the path to the west was made by 4BT, who operated portable from Picnic Point, Toowoomba, during November with successful results. This excursion fired enthusiasm on 144 Mc. and one station is active in Toowoomba. On 23rd March, contact was made between 4BT (portable at Point Danger) and 4PT (Toowoomba) which establishes a record for VK4 of 120 miles on this band, over a very difficult path.

Though without an official Manager, VK4WI has functioned satisfactorily and with a reasonable good coverage. It is now controlled on 14342 Kc. The news is presented twice monthly by John 4EP who is the controlling hand behind the mike. John 4JO being responsible for the gathering of the news.

"QTC," though regular up to December, lapsed somewhat owing to holidays and illness on my part, and it is hoped the new Council will put it back to proper order again.

The Library service is well patronised, especially by the country members. The Technical Library consisting of a grid dipper and a sig generator come in for much use and one or the other are out most of the time.

Student classes have been discontinued owing to our inability to procure an instructor, but the Council hopes to get it functioning again very shortly, and by co-operating with the VK2 Division hope to be able to do something about a correspondence course for the country chaps.

In conclusion, I wish to thank Council for the work and assistance given over the last 12 months, though it has been heavy going, each have done their best to keep the interests in the Division alive. I wish the new Council every success and the fullest co-operation by all members. To the membership I beg of you to make yourselves more active—on the air, at your meetings and all functions, events and contests held by the Institute, comply with Regulations in their entirety, and last but not least, help your fellow Amateur on the air and off. It is by your actions on the air you are judged by others, so be courteous and respectful in all your activities.—4XL.

TOWNSVILLE AREA

Meeting on 10th February was opened by the Chairman who asked all to stand in remembrance of associate member Ray Bosanko, who passed away at Mt. Isa. Quite a few turned up and better still all present brought along their fees and promised to try and round up more members. After much discussion, it was decided to purchase tapes for recording. A discussion took place on a film evening.

Meeting on 10th March was poorly attended, due to heavy rain. The Acting Chairman asked all to stand in remembrance of Mr. Stephenson (father of 4PS) and Mrs. Lock (sister of the Chairman, 4RW). The usual business was quickly disposed of and a lecture on Teletypes was ably given and enjoyed by all and are looking forward to others. It was decided that the film evening take place on 5th May, when it is hoped visitors from the "World" (Charters Towers) may be able to attend.

Things have been very quiet on the band as most of the locals are off the air due to the wet weather. 4WH dismantled gear and lifted it above flood level. 4EJ almost has new tower finished. Noticed 4RU heading for Cairns to get away from the rain. 4EL heard working 4EJ on 21 Mc. 4WH has some special QSL cards printed. 4RW received special QSL from HK3FV, also cards from VS4HK (Sarawak) and HASKBP. Quite happy and still waiting for DXCC c.w. certificate to come along, apparently lost in the flood. All are pleased that notes are again being printed, so what about it Rocky? Cannot someone get the energy, now that 50 Mc. has folded up.—4RW.

SOUTH AUSTRALIA

PRO 5PS

The monthly general meeting of the VK5 Division was held as usual in the clubrooms to a very representative gathering of members and visitors. The guest speaker for the evening was Mr. Keith Main, of "Lorimer Contacts." His subject, as the name of his firm suggests was "Relays and Their Operation." He spoke of the earliest type of relay, the telegraph sounder, so named because it relayed messages from place to place and traced its development through the years to the Second World War when extraordinary developments were made and relays brought into operation controls of aircraft, radar, gunnery, etc. etc. Mr. Main brought many samples of his wares and explained the operation of each in turn, but took good care to see that his case had not a vacant space at the end of his lecture, possibly due to the envious looks of a few stalwarts in the front seats.

At question time he answered many questions from those members who anticipate a relayed control station in the near future. One thing we did learn was that the insulation was only rated around the 200 volt mark and Brian Austin now knows why his relay flashed over when asked to withstand a voltage breakdown of 500v. Smoke-on and the distribution of cards made an interval between the lecture and the general business.

The matter of Civil Defence Emergency Network was brought forward by Jim 5JK and as is usual when people stick their neck out, it was placed right back in his lap by the President who suggested that James form a committee to enquire into the matter. I hear that Jim, with his usual thoroughness, has much to put forward to the next Council meeting on this important matter.

The visitors present were Mr. G. P. Tuck, Mr. H. E. Green, Mr. R. Kopp, an old member in Mr. J. Milway (VK7ZAM), our old friend and ex-VK5 of many years ago, "Bill" Barber (VK6DX) and Mr. Marshall (VK2J1) of Cremenore, N.S.W. These gentlemen were given the spontaneous welcome that is so well known by visitors to the "Division that sets the pace"—what am I saying, fancy having to get low enough to borrow one of Pansy's paragraphs (that's not bad Mr. Editor, what you think?)

During the week an energetic committee under the guidance of the President set up quite an amount of Amateur transmitting and receiving gear at the Town Hall, Adelaide, as part of many displays in The Hobbies Exhibition. Many thousands of people visited the Exhibition during its three days and nights of operation and many favorable comments were received by those on duty at 5WL. Special thanks are due to Mr. Jim Paris for giving up so much of his spare time to make the display a success.

Had the pleasure of a contact with Roy 5DA the other evening on 80 mx. The older members will remember "Buck," and he would be glad to have a QSO with you fellows on any Sunday evening, c.w. or phone. Another old timer who can be regularly heard there is Bob Grundy, whose signal has a terrific wallop locally. Bob likes phone, but I do know the old so and so can still copy c.w.—you readers of mails, you! A pleasant interlude the other evening was a visit from one of our country members, "Bram" 5ZAB, from Hynam, via Naracoorte. "Bram" has that quiet enthusiasm for Amateur Radio and the determination to master the "dits and dahs" that he will soon be dropping the "Z" from his present call sign.

Tom 5TL, writing from the Territory, reports that the Sunday broadcast is marred there by local ignition noises. He is apparently able to get more news from the Upper Murray than the local scribe, 5RE. Hobbie distinguished himself by gaining a second prize in the "Advertiser" photographic Contest. The same gentleman called at the b.b.s.s. and found the place was managing somehow to get by without the highly paid help of 5PS. Tom reports that the local Todd River, usually dry, ran last weekend and developed into a raging torrent, causing loss of life. There is no truth in the rumour that Tom is calling a meeting of the local "Bucks" and "Gins" with the idea of forming a branch of the W.I.A. amongst the native population. He does report that Frank Eastick is somewhat inactive and that he has a commission to get him back on the air. Frank's call by the way is 5AE.

From Mt. Gambier comes the news that Stewart 5MS is organising meetings of the local Amateurs each month on a Thursday evening. Each one is to give a talk on some aspect of his activities; don't let that fellow Haines start, Stewart, or you will be there until the early hours of the morning. Saw a par in the local paper that John 5JA is starting a new venture, we wish you lots of luck John,

but would very much like to see you active on the bands again.

Lea, Five-clank-Able-clank-Xray-SAX to you, made a very sincere vote of thanks to our lecturer at the general meeting for his talk on relays. It is refreshing to hear some of the country-suburban chaps doing their parts to make our meetings the success they are (you may copy that Pincott). Noticed a new definition of a committee: "A group of the unfit, appointed by the unwilling, to do the unnecessary!" Now I know what a lot of dills those Council—hey what am I saying, I'm one of them.

Away to the hills, to the mecca of the punters armed with portable rx and tx went our portly Gran-pappie, for an afternoon of peace and quietness, to laze on the green grass and to call CQ Portable. Great stuff this portable operation with the birds twittering and the large open spaces (I am referring to the countryside in case you fellows are mistaken). One CQ and a W station, nice going this, another CQ and a ZL pops back, and then things happened. The rx went mad, dozens of stations were calling 5PS Portable, and then Pansy woke up—The National Field Day was on. You know there was a time when the VK5 notes took pride of place in reading. Nowadays, I find myself peeping to the VK3 side to see how many barbed pointed arrows my Palsy-waisie Pincott has shot into the hide of the local "Aga Khan." Believe me, Pinny, quite a few got under the skin too.

Two new Council members in Bruce 5OR and Lloyd 5OK were welcomed at the last Council meeting, both these chaps belong to the younger generation and should help to infuse new ideas to Council meetings for the benefit of all and sundry. When one looks around at some of the older members, particularly the Minute Secretary, one realises what a lot of grey headed old so and so's we have become.

Ross 5LW has often been heard bragging of his catches of fish during the Xmas vacations and I have often wondered, but true to form, he turned up the other day with projector and colored films to prove that such large amounts of fish do exist. Some very rude person said something about silver bait and the local fisherman, but I treated it with ignore.

It is with deep regret that I noted the passing of yet another VK5 Amateur in Charlie Cheel, VK5CR. Charlie has been an active operator for as many years as I can remember and even until a few weeks before his death was keeping skeds on 288 Mc. His illness was painful, but his passing peaceful. To his wife and family we extend our deepest sympathy.

Activity around Mt. Gambier seems to be at an all-time low, but more activity is promised in the future. Both 5CJ and 5KU have been logged, but not as active as usual; this also includes 5MS. Most activity is on 2 mx with Leo 5ZAG showing great enthusiasm, using 10w. to 522. He is hoping to contact VK3 as soon as he gets his antenna going. "Bram" 5ZAB should be in his new shack by this, although perhaps we are expecting a bit much. He has started building a 30 el. beam for 2 mx and with his converter, which is getting lined up, he should soon be radiating a strong signal. 5MS has been on 20 and 40 mx for skeds mostly. He is building an antenascopie and hopes to tune his beam over Easter. Managed to get on the right side of the XYL by re-building the b.c. set. (What will Pansy say to that?—Ed.).

TASMANIA

The Tasmanian Division's Annual General Meeting and Dinner was held in the Institute's clubroom at 147 Liverpool Street, on Saturday, 26th March. The meeting was well attended, the only regret being that none of the Northern or North-Western members were able to make the trip. Our Patron is Mr. J. A. L. Crooks, and the following Councillors were elected by ballot: Messrs. T. Allen, J. Brown, T. Evans, D. Fisher, R. Fulton, C. Harrison, and W. Watson. Federal Councillor, Mr. J. Brown. Auditors: Messrs. R. D. O'May and G. R. Richardson.

The following non-executive officers were selected by coax, pokes and jokes. Traffic Officers: Messrs. W. Watson and L. Jensen. QSL Manager: Mr. K. Johnson. Divisional Sub-Editor: Mr. V. F. Dore. V.h.f. Officer: Mr. C. Wright. Broadcast Officer: Mr. T. Allen, who is to carry on until VK7WI can be operated under a roster system.

At the first meeting of the new Council, held on 1/4/55, Mr. F. J. Evans was elected President. Messrs. C. Harrison, J. Brown, and C. E. Wright as Vice-Presidents, and Mr. W. G. Tait, as Secretary.

The Annual Meeting was followed by a Buffet Style Dinner (plus liquid refreshments), which was done justice to by one and all. During the course of the evening, the Superintendent of the Wireless Branch, Mr. P. E. L. Dunne, was presented with a Certificate of Honorary Life Membership by the President Mr. L. Edwards.

On the following Sunday a Picnic and Field Day was held near Pontville. I say near Pontville, despite 7BJ's assertion that it was on the Tip. I feel that he is either biased, or perhaps he spent a lot of time on the said Tip looking for things. Tx's on 80 and 2 mx were hidden in the afore-mentioned Tip by those two crafty gents—7FM and 7FL—and the ensuing search produced results which were quite up to expectations. 7BJ's efforts to climb a hill of tins, etc., were likened unto those of a man who trieth to navigate an escalator which is running the wrong way. He especially requested me to quote him as saying that the tx was hidden in the appropriate place! Could that be a hot tip?

Bob and Lon, using 80 mx, would probably be going still (batteries permitting) had they not eventually realised that they were tracking the wrong signal. The tx's were found by 7LE, followed by 7BJ and then Barney Watson, i.e. first, second and third. The Hunt concluded with the presentation of a rather ornate "mug" to Dave Hillyard, such to be known as the Hillyard Perpetual Trophy.

Doug 7AB, formerly of Devonport, is now residing in Hobart and we welcome you to the Southern ranks, Doug. Trust you will find all things to your liking down this way. The local Devonport Amateurs are doing a wonderful job of voluntary work in fitting out the Devonport Fire Brigade with radio equipment. To date a base station and one vehicle equipped and working most satisfactorily on 2,692 Kc. Congrats chaps, fine effort.

7RY and 7WG are right in the throes of home building and Amateur Radio is, of necessity, at low ebb. Bill has rather a good yarn to spin on the joys of parking, but you will have to get it from him personally. 7KT is constructing a new antenna tuning unit for bigger and better sigs., and 7ML a new all-band rx, the latter to be adorned with an escutcheon featuring two squirrels. Before closing, I would like to express the Institute's thanks to Lon 7LJ for the most creditable way in which he has carried out the printing of QSL cards, menus, etc. Many thanks Lon for a really first-class job. In closing may I remind you of the recent Editorial to the effect that if we wish to hold the bands we now have, we must populate them!

NORTHERN ZONE

March was one of the most active months for quite a long time. Firstly, there was the Annual Meeting, the President's report showed that in the previous 12 months we had had 12 meetings (lectures and visits) plus eight hidden tx hunts. Obviously zone members were very happy over our activities as the only change made was to elect 7FP as v.h.f. officer. 7LZ, who has done this as well as QSLs for some yrs., could not devote sufficient time to both jobs. The 1955 officers are: President, 7RK; Vice-President, 7GM; Secretary, 7LX; V.h.f., 7FP; QSL, 7LZ; Activities, 7XW; Correspondent, 7CA.

During the month great activity occurred in re-building 2 "personal portables" for hidden tx hunts, but even so, 7XW once in a while manages to outwit the hounds. Three hunts took place in March. For the first, the tx went to a hill at Patena, a few miles outside Launceston. 7BQ with 7LX and brother, Ian, found the tx in 81 minutes, followed by 7GM with 7RK, about 28 minutes later. For the second hunt Chris took the tx out in the same area, the location being at Associate Ron Rich's house. This was one that wasn't found so the tx had another win. On the 31st, the tx went to a street high up on a hill overlooking the city, named Woodlands Grove. Despite pouring rain and inky darkness, Geoff Crompton and friend, Trevor, found the tx in 22 minutes, whilst 7LX and brother Ian, Max Fraser and YL came in shortly afterwards. Others had to open their envelopes.

Towards the end of the month the zone lost a very good friend with the passing of Mr. C.

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J. Greaves, former Supervising Technician at Launceston Exchange. He was always ready to help in any way he could. We all regret his passing.

NORTH WESTERN ZONE

Once again it is apparent that Burnie is the doorway to Tasmania as in the last couple of weeks John SWY and Crief 2XO have left here for the mainland after touring our island. I believe John has been getting some practical experience in mining at Queenstown.

On 14th March a combined meeting of the zone was held at Devonport in the Fire Brigade Hall, the occasion being to farewell Doug. 7AB, who has been transferred to Hobart. A presentation of an electric clock was made to Doug on behalf of the zone. George 7XL was elected to the office of President of the zone. A demonstration was given by the Fire Brigade members of the two-way radio system recently built and installed by Devonport members of the zone. Supper and liquid refreshments were served by the Devonport members and was enjoyed by all. Present at the meeting were 7AB, 7XL, 7BJ, 7JP and 7JO from the Devonport area, 7DR of Ulverstone, 7DM, K. Hancock, R. Wilson and 7SF and A. Murfett from Burnie. The evening was rounded off with a vote of thanks to the Fire Brigade.

7AI has nearly completed his new rx to end all rx's, but is experiencing much difficulty in removing the canaries from his variable i.f. system.

It is with deep regret that we record the passing of Murray Richardson, VK7MR, on 4th April, 1955. Murray will be a great loss to the Institute as besides being one of the founders of the North Western Zone, he gave his services as instructor for the Zone's A.O. C.P. classes and was always available to give help and technical advice where required.

NEW GUINEA—PAPUA

The first general meeting of the newly formed VK9 Division took place on Sunday, 27th

March, and after quite a debate, the election of officers was held. This resulted in Frank 9FN being duly elected as our first President. Congrats Frank! Ron 9RC and Bill 9BW were voted in as Vice-Presidents. Busy man of the Division will be 9CQ, who is holding the Secretary's chair. Finance will be in the capable hands of 9VW, a newcomer to VK9. Geoff has our good wishes and we trust he enjoys the fellowship existing in this part of the world, not to mention the DX which sometimes comes our way. "Double Brandy" Doug to you, has the mighty task of QSL Manager, and we all feel sure it could be in no more capable hands. Scribe will be 9BW.

Due to the great distances between centres, all meetings are held "on the air," usually on 7080 Kc. Sunday morning at 1000 hours finds most VK9s on frequency and discussing various aspects of Amateur Radio. VK9s in Papua, New Guinea and Norfolk Island are welcome and we look forward to a good roll-up every Sunday. Don't forget gang, 7080 Kc. every Sunday at 1000 hours.

9SP heard one Sunday night on 20 mx knocking over Europeans one after another. The gang at Rabaul, 9WP, 9BS, 9RG, and 9BW are all installing a well known v.f.o. recently available on the market. 9RM and 9RC are busy teaching youngsters the joys or otherwise of Amateur Radio. Good luck fellows! 8AU is working DX and heard frequently on 14 Mc. 9BS a 15 mx addict, and getting contacts. 9WP almost W.A.C. with 4 watts. Nice work Bill! Would like to hear from the VK9 gang every month, so drop a line to Box 76, Rabaul, and let us know what's doing on the bands.

9BW on c.w. on 7 Mc. and getting some DX now and then. Doug, 9DE back on the job after that spot of leave. Frank 9FN a busy man, what have you been working Frank? Nothing heard of Kavleng for some time. What's doing over there? QSL Bureau for VK9 Papua and New Guinea Division is C/o. VK9DB, P.O. Box 107, Port Moresby. Conditions on 15 and 20 mx very poor. Nothing much doing after 7 p.m. at night. Be with you again next month gang. 73.

HANADS

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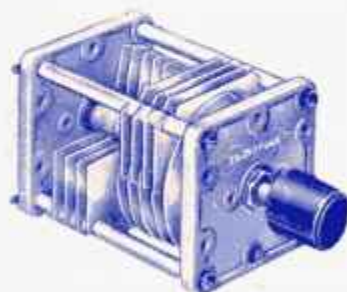
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EDITORIAL



"FOR SERVICES RENDERED"

During the last decade the effect of modern scientific development has had a profound effect upon the existence of the individual. Many previously conceived ideas of living have been discarded; many fallen into disuse. People have become so accustomed to automatic devices in lifts, telephones and other almost human mechanisms, that they accept these services without thought.

However, behind all forms of endeavour, human or otherwise, there are three main prerequisites: a plan, a means of carrying this plan out, and an operative. In the various activities of the Wireless Institute all three are found. The first two are, of necessity, somewhat abstract; but the latter requires not the efforts of a machine but that of some person. The Institute is fortunate that within its ranks, it possesses "persons" capable of filling the role of "operatives."

These particular "operative" members may be seen giving of their services in manifold directions; in groups as committees or singly as individuals. They carry out willingly some duty for which they have accepted the responsibility and because of the manner of their acceptance they ask no remuneration of applause. All this, because they believe their fellow members and the Institute will gain by their so doing. The thoroughness with which they apply their energies is a tribute not only to this ideal, but to themselves.

While accepting the benefits of membership in the Wireless Institute of Australia, it should be remembered that the advantages so automatic in function possess a human side. Some one made them exist in the distant past or the recent present. It is not difficult to record appreciation "for services rendered."

FEDERAL EXECUTIVE.

THE CONTENTS

| | | | |
|--|----|---------------------------------------|----|
| Wideband Audio Phase Shift Networks—Part 1. | 2 | Book Review—Single Sideband .. | 12 |
| Construction of a Cheap Beam .. | 7 | Short Wave Listeners' Section .. | 14 |
| Have You Ever Gone Portable? .. | 8 | Fifty Megacycles and Above .. | 15 |
| New Awards Manager .. | 9 | DX Activity by VK3AHH .. | 17 |
| 1954 VK-ZL DX Contest Results .. | 11 | Prediction Chart for June, 1955 .. | 17 |
| Amateur Call Signs .. | 12 | Federal, QSL, and Divisional Notes .. | 18 |
| | | Correspondence .. | 24 |

Wideband Audio Phase Shift Networks

PART ONE

BY N. SOUTHWELL,* VK2ZF

WIDEBAND audio phase shift networks came into prominence around 1946, when material concerning them was published in America, and the networks put to various uses, the main one of interest to the Amateur fraternity being s.s.s.c. transmission and reception. Previous to 1946 the properties of these networks were known, but only made use of in a few isolated cases in commercial radio.

Today, some eight years after their sudden leap into prominence in the sphere of Amateur activity, these networks are still regarded by the majority of Amateurs, including some s.s.b. transmitter operators who use them, as magical black boxes, inhabited by a genii, who performs wonders in producing from a single input, two outputs, approximately 90° apart in phase over a wide section of the audio range. Should a fault develop inside one of these "black boxes," however, to produce an undesired phase shift, then heaven help the unfortunates mentioned above, as truly the machine would be master of the man.

A number of Amateurs have shied away from building these units for various reasons, and this article is written after more than three years' activity with phasing type s.s.b. equipment, to help any who may have been interested in these circuits, but due to lack of confidence have not tackled them.

The schematic circuits connected with this article show the various units connected up for use in s.s.s.c. transmitters, the same units with minor modifications are suitable for use in s.s.s.c. receiving equipment; what these are, will be apparent to the boys interested in s.s.s.c. receiving adaptors. This article is lengthy enough, without covering the special refinements required by receiving adaptors.

Phase shift is a characteristic of all equipment, whether r.f. or a.f. It is always present with us, but completely forgotten about by the majority. Many people will discuss the frequency response of audio equipment by the hour, but soon become perplexed when the subject of phase shift crops up, though the performance of audio inverse feed back systems depend on, and are limited largely by, phase shift.

Phase shift is something the ear is quite tolerant about. Two speakers in a public address system can be connected up 180° out of phase and usually only trained personnel will pick the fact, even then, the only effect is a tendency for a "dead spot" in sound coverage to be created in the area between the speakers, where the audio level sounds a little "queer" compared to elsewhere. However, should one of the speakers differ in frequency response to the other, almost anyone coming within range of both speakers will note the fact.

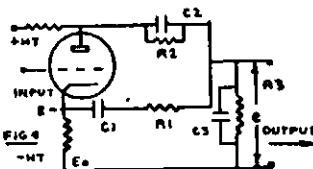
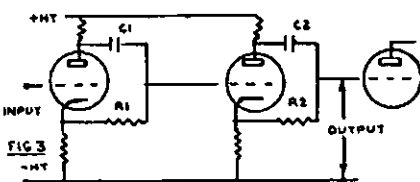
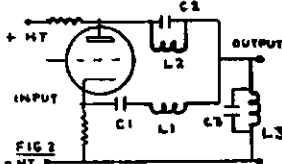
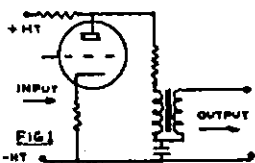
For a wideband audio phase shift unit to be satisfactory, it must meet certain conditions—

(1) It has to produce from a common input two outputs whose phase difference over the operating range is as close to 90° as possible. (Differential phase shift is the term applied to this phase difference.)

(2) The frequency response of each channel must be similar, though not necessarily flat.

(3) The amplitude variations of the input signal must be faithfully reproduced at the two outputs.

To meet the above conditions, two networks are used, one for each channel. So initially we find that a phase shift unit as used for s.s.b. work comprises two networks, designed as a pair.



Figs. 1 to 4.—Some basic types of Phase Shift Networks.

It so happens when two phase shift networks are combined, one having a design frequency 4.53 times that of the other, the differential phase shift between the two outputs approaches to 90° over a wide range as shown in Fig. 7, where the two curves keep to within $\pm 4^\circ$ of 90° over a frequency range of about 27:1—quite sufficient for voice frequency work.

It will be seen that the network phase shifts increase almost linearly with the logarithm of the frequency, i.e. over the greater part of their length in the graph the curves are nearly straight lines.

Other networks, as will be shown shortly, have a much wider bandwidth. It all depends upon the design. Do not

think that s.s.b. equipment is incapable of high fidelity, if you do, you are badly misinformed. Reverting to the design frequencies, we must assume a geometrical mean frequency for the audio range, as a point from which to commence. The frequency is by no means critical, various authorities quote from less than 700 c.p.s. to over 800 c.p.s., however let us for purposes of any network design covered in this article take 700 c.p.s. as the geometric mean frequency. Then at 700 c.p.s. one network must have a phase shift of $180^\circ + 45^\circ$ and the other network $180^\circ - 45^\circ$.

Due to the conditions enumerated earlier that the networks have to satisfy, lattice type networks are nearly always used in phase shift units.

Figures 1 to 4 show four different types of networks. The ones shown in Figs. 1 and 2 use inductances, and will not be dealt with in detail as the use of inductances in these networks should be avoided if possible, because—

- (1) The magnetic fields can cause trouble:
 - (a) By interaction,
 - (b) By extraneous pick up of 50 c.p.s. fields, etc.
- (2) Inductance values vary with the current flow, or with the applied voltage.
- (3) All inductances have a certain amount of resistance in their windings.
- (4) All inductances have shunt capacity.
- (5) The chances of Amateurs being able to obtain the values of inductances called for in the network design are remote, compared to the possibility of their being able to obtain precision resistors and condensers, or build up suitable components, as required by other types of design.

In passing, it may be mentioned that Fig. 2 gives a better performance than Fig. 1. The circuit outlined in Fig. 3 is perhaps the most complex of those to be discussed, it is used in the more elaborate types of equipment, and is capable of high fidelity performance.

Fig. 3 shows two simple resistance capacity networks C1, R1, C2, R2, isolated by tubes, any number of stages can be cascaded to increase the operating bandwidth of the set-up.

The use of two networks each having three stages, with an output coupling stage, as in Fig. 5, will maintain a phase difference close to 90° between their outputs over a frequency range of 200:1. The phase difference between the two outputs is usually termed the "differential phase shift."

The input terminals of each section of this type of network, i.e. C1, R1, C2, R2, in Fig. 3, are fed signals 180° out of phase from the plate and cathodes of the preceding tube, which is operated with equal plate and cathode loads. This is one way to get around the necessity of using an input transformer.

No terminating resistor can be used in this type of design, the output must

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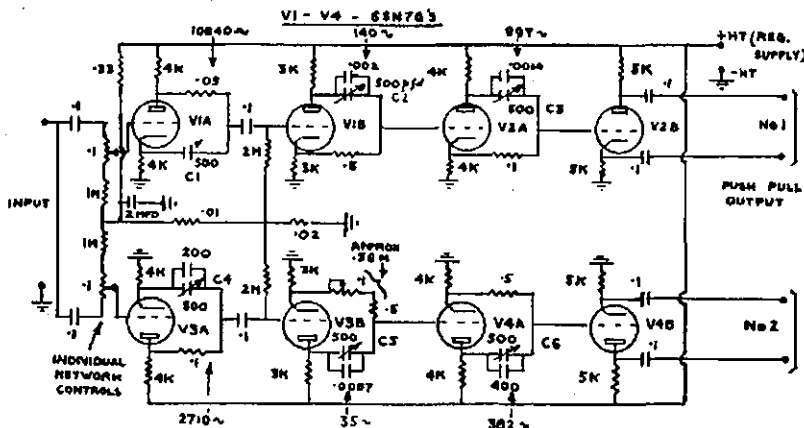


Fig. 5.—Schematic of Wideband Phase Shift Unit.

be fed to the grid of a tube which acts as an output coupling stage, as in Fig. 5 (V2B and V4B).

These networks have an overall loss of around 8 to 10 db. in practice (10 db. is a voltage ratio of about 3:1). Another feature of this particular type is that for proper operation, it demands a very low impedance h.t. supply, preferably one that is electronically voltage regulated, or, that has at least 80 to 100 uF. capacity in the output condenser. Due to its comparative complexity, little interest is shown in this type of network by the average s.s.b. operator who is solely concerned with speech transmission. Because of this, no design formulae will be given, but only the adjustment procedure outlined, for one that is shown in detail in Fig. 5.

The plate and cathode load resistors of each stage, twelve in all in this circuit, should be matched in pairs and preferably be within $\pm 2\%$ of the values shown. The input circuit components are not critical, neither are the output coupling condensers.

The six condensers in the sections of the phase shifting networks should each be made up of a fixed mica unit, paralleled by a variable one, to enable their values to be adjusted. Superhet. paddler condensers are eminently suitable for this purpose.

To align networks of this type an audio oscillator and a c.r.o. are required. Firstly, check the phase shift of the c.r.o. horizontal and vertical amplifier channels. For convenience this can be done initially, at all frequencies required for use during the alignment process. A note can be taken of any frequency at which the c.r.o. requires phase correction, and the correction carried out when the alignment has progressed to the point where that frequency is to be used. Frequently it will be found that no correction is required at any frequency, but it should always be checked.

To check the c.r.o. channels for similar phase shift characteristics, connect both horizontal and vertical inputs of the c.r.o. in parallel across the output of the oscillator, which is tuned to the frequency required. Vary the c.r.o. channel gain controls until you obtain a thin straight line sloping at an angle of 45°. This is the indication that both channels have a similar phase shift characteristic at that frequency. Check at all frequencies to be used to see that

the same pattern can be obtained on the c.r.o. This should be done with the channel gain controls left set in their original positions as varying the control settings can change the phase shift. At some frequency you may find that instead of getting a thin line sloping at 45°, you see a long narrow ellipse. This indicates that phase correction is called for at that frequency.

Firstly, try adjusting the settings of the two channel gain controls, this may clear the trouble; alternatively, you will have to temporarily wire in either a 50,000 ohm pot., or a small condenser, in series with one of the input leads to the c.r.o. Adjust the pot. or change the size of the condenser until the correct display is obtained on the screen. Remember to do this correction on the c.r.o. when you reach the stage in the alignment where that frequency is used.

The above has been gone into in some detail, as it applies in all instances where you use a c.r.o. to check the operation or adjustment of either pairs of components or complete networks.

For convenience in the case of this type of network, the oscillator output signal can be picked off across the cathode load resistors.

ALIGNMENT OPERATION

The sequence of alignment operation is shown in Table One. The alignment pattern that should be obtained when

the condensers specified are adjusted, with the c.r.o. connections as tabled, is either a circle or an ellipse which has its axes parallel to the sets of deflecting plates. The attainment of the correct c.r.o. display at each alignment position specified, is evidence that at the frequency used, the phase shift introduced by the section of the network whose condenser was adjusted is 45°, the correct amount.

After completing the alignment, check the operation of the whole unit by attaching the c.r.o. amplifier inputs to V2B and V4B cathodes. Swing the oscillator over the operating range and note how the display varies only slightly from either the circular or elliptical pattern specified earlier, from about 70 c.p.s. to over 10 Kc. If a deviation is noticed at some point, it is more likely to be phase shift in the c.r.o. than in the phase shift unit. The line-up procedure may seem involved, but it actually takes little longer to perform than to read how to do it.

R/C NETWORKS

Fig. 4 shows a network using resistors and condensers which, as far as configuration goes, is similar to the L/C network of Fig. 2. This network is one of those commonly used by s.s.b. operators in either transmitters or receiving equipment, and will be covered in detail, including necessary design formulae for lattice type R/C networks, with a worked-out example. Fig. 9 gives the relevant characteristics of series and parallel R/C circuits.

As mentioned earlier in this article, the two networks comprising one phase shift unit are built around the initial assumption of some frequency as a geometric mean of the audio range. Let us assume it is 700 c.p.s. To find the design frequencies for the two networks we use the formula—

$$\text{Tan phase difference} = \frac{2S \times F1 \times Fn \times (F1^2 - Fn^2)}{(F1^2 - Fn^2) - (S \times F1 \times Fn)^2}$$

where phase difference = 135° (180° - 45°)

F1 = 700 c.p.s. (geometric mean).
Fn = network design frequency.
S (see text) = 4.

Transposing and working out the above, we find that Fn = 2.126 F1.

| Step No. | Oscillator Frequency Cycles (Input to Unit) | C.R.O. Connections | | | | |
|----------|---|--|--|--|--|-------------------|
| | | For Phase Shift Correction Test | | For Phase Shift Network Adjustment | | |
| | | "X" Amp. Input between ground and cathode of | "Y" Amp. Input between ground and cathode of | "X" Amp. Input between ground and cathode of | "Y" Amp. Input between ground and cathode of | Adjust Condensers |
| 1 | 10,840 | V1A | V1A | | | |
| 2 | 10,840 | | | V1A | V1B | C1 |
| 3 | 140 | V1B | V1B | | | |
| 4 | 140 | | | V1B | V2A | C2 |
| 5 | 997 | V2A | V2A | | | |
| 6 | 997 | | | V2A | V2B | C3 |
| 7 | 2,710 | V3A | V3A | | | |
| 8 | 2,710 | | | V3A | V3B | C4 |
| 9 | 35 | V3B | V3B | | | |
| 10 | 35 | | | V3B | V4A | C5 |
| 11 | 382 | V4A | V4A | | | |
| 12 | 382 | | | V4A | V4B | C6 |

Table One.—Alignment Chart for Fig. 5.

ZEPHYR MICROPHONES

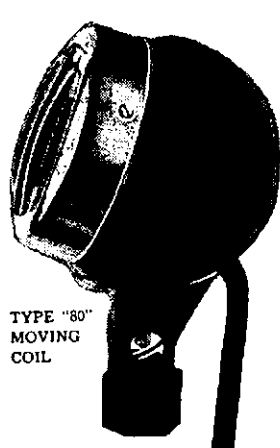


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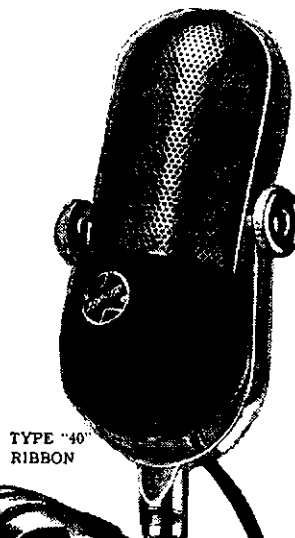
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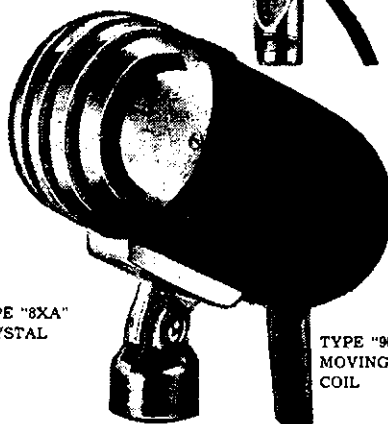


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Then the design frequency for A network = $700 \times 2.126 = 1,488$ cycles. And the design frequency for B network = $700 \div 2.126 = 329$ cycles.

It will be noted that these frequencies bear the ratio of 4.53 : 1.

The writer would like to point out now that unless you desire to check the above calculation, it will not have to be performed. You commence your individual designs with the two network design frequencies given, or if you assume a different geometric mean frequency, apply the multiplying and dividing factor of 2.126 to it. The factor S introduced in the above formula merits comment. It is an arbitrary factor which should be more than 2. Its optimum value is 4, which is used above. When the value of S lies between 3 and 5, a reasonably good (i.e. straight) graph is obtained when the phase shift is plotted against frequency on a log-linear scale, as in Fig. 7.

The formula for the determination of the phase shift is, phase shift angle—

$$\tan^{-1} \frac{2S \times F1 \times Fn (F1^2 - Fn^2)}{(F1^2 - Fn^2) - S^2 \times Fn^2 \times F1^2}$$
 (constants are as for previous formula)

DESIGNING THE NETWORK

We now come to the actual formulae used in calculating the network components and find that

$R1 C1 = R2 C2 = R3 C3$ (refer Fig. 4)

$$Fn \text{ (network design frequency)} = \frac{1}{2 \pi R1 C1}$$

$$C1 = \frac{1}{2 \pi Fn R1}$$

$$C2 = A \times C1$$

$$C3 = \left(\frac{4A^2}{1 - 4A} \right) C1 \quad A = \frac{1}{S + 2}$$

$$R2 = \frac{R1}{A} \quad S = \frac{1 - 2A}{A}$$

$$R3 = \left(\frac{1 - 4A}{4A} \right) R2$$

Firstly, we set the value of R1 without any calculation. If the networks are to be driven from the plate and cathode of a tube, as in Fig. 4, select a value of R1 which will be a suitable load for the tube to work into. Values used normally range from 5,000 ohms to 30,000 ohms. Within this range the values of the other components will not become unwieldy. Let us take R1 equals 15,000 ohms.

Now $Fn = 1488$ cycles

$$S = 4$$

$$A = \frac{1}{S + 2}$$

therefore $A = 0.1666$

$$R1 = 15,000 \text{ ohms.}$$

$$C1 = \frac{1}{2 \pi Fn R1} =$$

$$\frac{1}{6.28 \times 1488 \times 15,000} = 0.00714 \text{ uF.}$$

$$C2 = A \times C1 = 0.1666 \times 0.00714 = 0.00119 \text{ uF.}$$

$$C3 = \left(\frac{4A^2}{1 - 4A} \right) C1 =$$

$$\left(\frac{4 \times 0.0277}{1 - 0.664} \right) \times 0.00714 =$$

$$0.333 \times 0.00714 = 0.00238 \text{ uF.}$$

$$R2 = \frac{R1}{A} = \frac{15,000}{0.1666} = 90,036 \text{ ohms.}$$

$$R3 = \left(\frac{1 - 4A}{4A} \right) R2 = \left(\frac{1 - 0.666}{0.666} \right) \times 90,036 = 45,018 \text{ ohms.}$$

That completes the design of the A network.

The design of the B network is similar, as follows:—

$$Fn = 329 \text{ cycles}$$

$$S = 4$$

$$A = 0.1666$$

$$R1 = 15,000 \text{ ohms.}$$

$$C1 = \frac{1}{2 \pi Fn R1} =$$

$$\frac{1}{6.28 \times 329 \times 15,000} = 0.0323 \text{ uF.}$$

$$C2 = A \times C1 = 0.1666 \times 0.0323 = 0.00538 \text{ uF.}$$

$$C3 = \left(\frac{4A^2}{1 - 4A} \right) C1 = 0.333 \times 0.0323 = 0.0105 \text{ uF.}$$

R2 and R3 have the same value as in network A, and our network designs are completed. The curves for these networks are shown in Fig. 7. Combining the two networks to form one phase shift unit, we get the set up as shown in Fig. 6. Here the unit is fed from the secondary of a good quality transformer in lieu of being fed directly from a tube.

Transformers with secondary impedances up to 10,000 ohms have been used successfully, but it is recommended that the transformer secondary impedance should be fairly low for the best operation. Class B driver transformers perform admirably in this position.

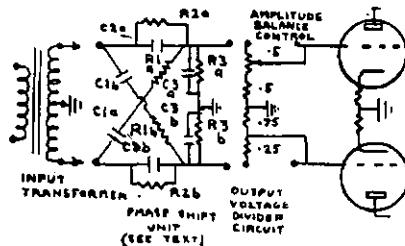


Fig. 6.—Complete circuit of Lattice Type Network.

Note.—See text for component values. "a" and "b" suffixes are used to identify which network the components are part of.

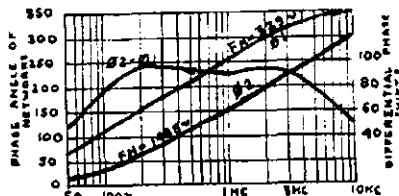


Fig. 7.—Phase Shift Curves for Lattice Type Network in Fig. 6.

Fn is the network design frequency. The differential phase shift curve shown as "Q2-Q1" should be "Q1-Q2".

The networks have an overall loss which is easily found from the formula:

$$\text{Output Voltage } E_o = \frac{S - 2}{S + 2} \times \text{input voltage } E_i$$

For the networks just designed this loss is 10 db. approximately.

Some means of balancing the outputs of the two channels for amplitude is required. This (Fig. 6) is accomplished by means of variable and fixed resistance voltage dividers connected across the outputs of the networks. The total value of the two series resistors in the voltage dividers must be taken into account when you start looking for resistors for the R3 positions in each network, as these are shunted by the voltage dividers.

Referring to the two networks just designed, where $R3 = 45,018$ ohms. If these networks are used with 1 meg. voltage dividers, as in Fig. 6, the value of R3 will need compensating as follows: $Ra + Rb$ (voltage divider components) = 1 meg.

$$R3 \text{ original} = 0.045 \text{ meg.}$$

$$R3 \text{ new} = ?$$

$$R3 \text{ original} = \frac{R3 \text{ new} \times (Ra + Rb)}{R3 \text{ new} + Ra + Rb}$$

$$0.045 = \frac{R3 \text{ new} \times 1}{R3 \text{ new} + 1}$$

$$= 0.955 R3 \text{ new} = 0.045 \text{ meg.}$$

Therefore $R3 \text{ new} = 0.04711 \text{ meg.} = 47,110$ ohms. which is the new value that R3 assumes when paralleled by a 1 meg. voltage divider.

The added loss of this divider, which is 2.5 db., must be added to the loss of 10 db. incurred in the networks. Allow 14 db. as an overall loss (which is a voltage ratio of 5:1), when calculating how much gain you need in your audio channel. To test a complete phase shift of this type (lattice R/C), feed tone from an oscillator into it from a push pull source, such as the transformer, or tube, that will be used to drive into the unit. Connect the horizontal and vertical amplifiers of a c.r.o. to the two outputs, having first checked the c.r.o. channels for similar phase shift over the operating range as described. Do not forget to wire in the earth connections to the various parts of the circuit. Running the oscillator over the frequency range the unit covers should result in the appearance of a circle, or horizontal or vertical ellipse pattern on the c.r.o. screen. The pattern may change in size over the operating range, but it should hold its correct shape quite closely.

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"How's your sky wire?"

"Having any trouble getting those elusive DX contacts?"

One often asks oneself these questions, especially when listening to the proud boasts of the DX man who has just gained his DX C.C. and who delights to tell all and sundry about the mighty beam he built. But does he tell you what it cost? No sir! He earbashes you about his four element rotary, on 20 metres, about his getting dural tubing for the elements, how high his pole is, and of his results. Recently I had a letter from a chap who decided to build one, but could not obtain his quota of dural, and could I help him to get it? I told him that I was out of touch with the local market and suggested he get in touch with the "beam" boys in the south.

Now there is no need for these elaborate structures to make a worthwhile beam, although I will admit that if you can get the material to build one of the "super-duper" type, go to it by all means. They do pay off. But they will cost you quite a bit, probably more than the average Amateur can afford, that is without robbing the kid's piggybank, or docking the XYL's pay cheque (which is not conducive to the best of harmony).

So this article is the direct result of such enquiries.

Some time during the past year it befell my lot to do a relief stretch at one of the N.B.S. (Qld.) transmission stations where one of Amateur Radio's consistent phone and key men is stationed and from where he daily logs S9 reports from the world over. To wit, VK4EL—Eric to the fraternity. Yet his aerial is only an 8JK and he swears by it. Both from results (and I can vouch for that, having seen his cards) and from the cost angle. We discussed the possibility of improving the beam, by trying to make it rotate.

I think that here it is time to state just what it consists of. The aerial, as shown in detail in most copies of the A.R.R.L. Handbook, is an end-fire horizontal beam, but is of fixed direction in the orbit of its lobes. To work more than two directions other than at right angles to its plane, one has to build additional antennae. Thus to be able to make it rotate would be a decided asset.

The point was how? The element length was 36 feet end to end and the elements were 8 ft. 9 in. apart. We started to plan it, but circumstances over which we humble technicians have no control, took over and the project had to be shelved, owing to my having been transferred again.

My next location was at Atherton in Nth. Queensland, where again luck was with me, and to wit, being stationed with VK4UX, another chap who gets results without the elaborate gear. In fact Claude has had excellent reports when he tried out a piece of wet string, properly matched, of course! Any doubters? Call up Claude some night

and he'll give you the gen. So chaps before you decide on that super beam, I hope that this article may give you something to think over.

And now, as our old friend Samuel Peypes says, so to work. What we want is a lightweight boom, about 40 ft. long, yet strong enough to resist a reasonable wind force, and one that will cost little.

At first this seemed impossible. Then what passes for a brain, got an idea. I saw some kiddies playing with bows and arrows. Why not use the bow idea for the boom? Also, if the boom was of a "laminated" structure, strength and lightness could be incorporated together. Another fact was that tim-

Boom (bows), dressed pine, 2 x 1/2 in., six 20 ft. pieces, two 10 ft. pieces. Boom braces, dressed pine, 1 x 1 in., two 8 ft. pieces.

One length of g.i. pipe, 1 1/2 in. diam.

One pipe flange, 1 1/2 in. female thread.

Plastic paint. Sundry nuts and bolts, screws, insulators, etc.

Two only brass nuts and bolts about 10 in. long.

A couple of other eye bolts are necessary and these will be introduced when they are to be used. Warning, paint all your work with the plastic paint. It improves insulation and protects your wood and iron pipe.

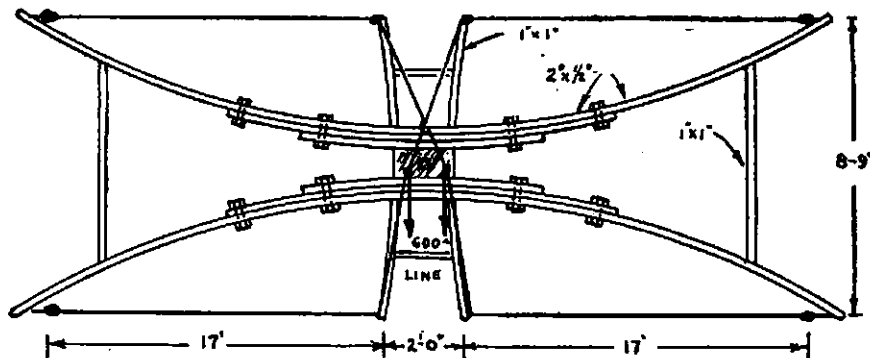


Fig. 1.—Constructional Details of the Cheap Beam. Plan of the bows and cradle.

ber, say, 2 x 1/2 inch bends easily one way (on the flat), but resists any bending on its edge. Try it. Here was the solution to the boom. All that was left to consider was the carriage or cradle as I call it. This could be made from light timber too, namely 1 x 1 inch pine. Thus with a few light pieces of timber, a few bolts and screws, brass for preference, it was possible to rotate an 8JK antenna. For elements, ordinary 3/20 bare earth wire was quite in order. And the results? A beam that will give a gain of over 4 db over a dipole.

Another point was the rotating system. As the beam has only to be rotated 180 degrees to gain 360 degrees coverage, due to the fact that the antenna is of the bi-directional type, no elaborate system of rotation was required. The cheapest system is, of course, to use a piece of rope wrapped round the rotating pole. Other means suggest themselves, but I leave that to the individual Amateur to make, knowing that the method selected will be from the direct results of his training.

CONSTRUCTION

First one has to get some timber. I know it's quite a job these days, but it can be done. If you decide to build up this beam you will need the following supplies:—

Support pole, hardwood, 4 x 4 in., 20 to 25 feet long.

Cradle, dressed pine, 1 x 1 in., two 9 ft., two 1 ft. 6 in.

Cradle block, dressed pine, 6 x 2 in., 1 ft. long.

Now commence building it. Take two of the long pieces of 2 x 1/2 in. pine and place them end to end. (Sounds like a recipe for a stew.) Give yourself plenty of room as it will stretch some 40 feet. Now place another 20 ft. piece over them in such a way that it covers the other two pieces equally, and bolt together. Now place one of the 10 ft. pieces again over it and again bolt together (see sketch). Forget about

(Continued on Page 9)

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Have You Ever Gone Portable?

BY "PANSY" VK5PS

When I decided to take away a portable set-up on my recent holidays, the news of this was received with a certain amount of coldness among the members of my family. My married daughter appeared to take a decided dim view of my plan and said, "You don't want to take away a portable radio on your holidays, you will be wanting to take long walks in the moonlight with Mum," concluding this statement by closing one eye and saying "Woo Woo!" I treated this "woo woo" business with the necessary coldness and refused to be shifted from my intention.

To make a short story longer, we eventually arrived at our camping ground and it was my intention to go right ahead with the setting up of the antenna, but catching the look in my XYL's eye, I decided that possibly it would be better to set an example to my son-in-law, Bob, and fix up the caravan and "what have you" first. Eventually all the chores were completed, and Bob and myself, looking not unlike a couple of Girl Guides, set out to find a suitable tree for the antenna. This was not hard to find and with Bob all set to show me how the Air Force tied stones to their aerials and tossed them up into the trees, I stood back and gave him his head.

With a mighty heave and an audible grunt, he tossed the stone high in the air; up, up, into the tree. By the time we had calmed the ruffled feelings of the man who owned the caravan next door, and promised to pay for the broken window, it was getting on the late evening side, so I set Bob to work chopping some wood and completed the outside installation myself, it worked out much cheaper!

All was now ready, and at this point I lost my confidence. Supposing that I did not get a contact, suppose that I was set up in a dead spot, suppose that all stations had retired to their evening meal. I broke out in a cold sweat at the thought, but with my XYL, my daughter, and to say nothing of Bob, sitting alongside the portable set-up looking like the avenging angels or something, there was nothing I could do but call CQ. Whilst I was calling CQ, in a decidedly weak voice, I was thinking up the necessary alibi and how best to put it over. Glancing at the three avenging angels, I realised that I would have to end my CQ some time or other and in abject misery I crossed over to the receiver and waited in fear and self-pity for the deep silence that I felt sure would follow.

WHAM! BANG! WHACKO! You should have heard the din calling me, there must have been twenty stations at least, VK5s, VK3s and even VK4s, believe it or not, the entire 80 metre band was alive with my call sign. VK5PS/Portable simply filled the air. How I kept my bottom jaw from hitting the floor from sheer surprise I will never know. My XYL was looking at me with a look of stunned surprise, my daughter was for once bereft of words, and Bob was looking at me with a look that distinctly said, "He's not such a dill as I thought he was!"

With a calmness that surprised even me, I said, "I will work a few of these jokers and then perhaps we will have some tea," and the avenging angels fairly hung on my words, as I exchanged numbers with all those that called me.

Yes, you have guessed it, I had run slap bang into the National Field Day Contest, and because I had been out of town for three weeks I had not seen the magazine and did not know that the new date had been arranged. I meant ten points to all stations and

they did not intend to let me go. The avenging angels did not wake up to this, and my hour of triumph had arrived.

At this point my simple little story should end with everybody living happily ever after, and if I had not been carried away with my success, that is exactly what would have happened. My dreams of breakfast in bed each Sunday morning, brought in by the loving hands of my XYL, forever converted to the fact that she had married a real Radio Amateur, were rudely shattered by my XYL saying, "See if you can contact that station at the top of the band, that one with the sweet voice." I listened for the call of the station with the sweet voice, and noted with something of apprehension that it signed VK3RN. My XYL said again, "See if you can contact him, he seems like a sweet boy." Turning to her with the semblance of a sneer on my face, I said, "Oh that is Ron, he is not a bad chap, aside from having two heads and six fingers on each hand, he isn't too bad."

Even at this point I could have saved myself, but no, I was drunk with success, and without giving a thought to the inevitable I called him. A feeling of disaster hit me as he came back and called me. It wasn't the voice of Ron, although it was familiar. I clutched the table in suspense, and all of a sudden it hit me with the force of an atom bomb, it was Pincott (my enemy), of all the stations in VK that I could have contacted I had to contact him!!

Shall we draw a veil over what followed? In three minutes he brought me down from the heights to the depths, he told the avenging angels how weak my signals really were, he told them that but for being a contest I would not have had a contact, he told them everything that he could think of, including that it was only the ten points that made me such an attraction.

As I switched off the Type 3 and looked into the faces of the avenging angels, I realised that my brief hour of triumph had vanished into thin air, and as my XYL handed me a paper plate and a piece of dry bread, at the same time opening the caravan door, I walked slowly out into the night. Higher up on the hill, a mob of campers were singing in sad voices, "Poor old Joe," and I softly said to myself, "What has Joe got that I haven't."

As I slowly walked along looking for a suitable dog house into which to crawl, I noticed up in the tree above me, an owl, who apparently took pity on me because he slowly closed one eye and said, "Woo Woo!" The stone that I threw at him made no effect and as it fell into the river with a splash even the disturbed frogs seemed to be saying "Pincott, Pincott, Pincott." Wouldn't it!!

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Unmounted £2 0 0

Mounted £2 10 0

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CHEAP BEAM

(Continued from Page 7)

bending the bow yet. Just put it aside and repeat the dose. This will give you two "bows." Leave them as is, and proceed to make the cradle.

For this you will need the 6 x 2 in. piece of pine. Lay the block lengthwise and mark the bolt holes (see Fig. 2a). Having painted it, follow Fig. 2a and mount the bows. Use large washers under the bolt heads and nuts so that they will not pull through. Now turn the assembly over and screw on the 1 x 1 in. pine cradle bars (see Fig. 2b). Now stretch open the cradle ends, as Fig. 1, to give an opening exactly 24 inches apart at each end of the cradle and fix the cradle braces in place. Attach four bobbin insulators, one to each piece of the cradle, at each extremity, in such a way that wire can be used to strain on.

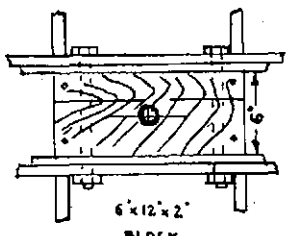


Fig. 2a.—Plan of Cradle Details.

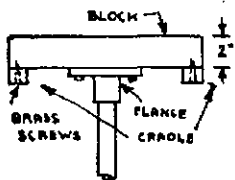


Fig. 2b.—Block Details.

Now cut four lengths of 3/20 bare copper wire about 20 feet long and attach one to each insulator. Next cut four lengths of wire to use as strainers for the elements. Drill two holes at each end of the bows and thread wire through and secure in usual way. Now measure exactly 17 feet from the cradle

insulators and insert an egg insulator in each wire element. Next feed the smaller wires (strainers) through the egg insulators and draw tight. This will form the bows. Keep drawing them tight until the elements are parallel. See Fig. 1.

Attach two more bobbin insulators to the underside of the block and arrange the cross over wires as shown in Fig. 1. This completes the construction of the boom and cradle.

Next choose the site for the support pole and erect it in position. It is best to put in the eye bolt that will act as the guide hole for the waterpipe. Don't place it too low as you have to pass the waterpipe up through it when the pole is up. When the pole is in place, push the water pipe up through the eye bolt and mark where the lower eye bolt is to go. Withdraw the pine and mount the lower eye bolt. Next get a piece of round hardwood about 1 1/2 in. diam. and insert it in one end of the pipe. Make sure that bit is a tight fit. Now point the other end of the wooden peg. Do not make it too acute. Then replace the pipe back in the eye bolt (upper) and sit it on the lower eye bolt.

Notice that you will require different size eye bolts for top and bottom. The next step is to attach the flange. Climb up the pole. It's not hard, as any extension ladder will reach up to the top usually. Screw the flange in place tightly and paint the joint. Now hoist the boom and cradle up. As this is of light construction, this should not present too much difficulty even though it is a fair length. A point here is that you should have marked and drilled the flange holes in the block prior to hoisting the boom up. Sit the boom over the flange holes and bolt securely. If the face of the flange is restricted and small a metal plate should be placed between the block and the flange. A piece of stove iron about 1/2 to a 3/4 in. thick will be good here, thus giving more stable support to the boom. Now all that is left to do to make the darn thing work is to attach the feeders.

FEEDERS

This type of antenna requires a 600 ohm line feed. Open wire line is undoubtedly the best to use, and to the average Amateur should not present too

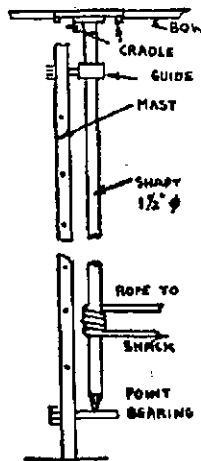


Fig. 3.
Method
of
Support.

much difficulty in construction. Details of 600 ohm line data will be found in most A.R.R.L. Handbooks, so depending on the wire on hand you can make up one to fill the bill. A point to remember is that feeders should have no sharp bends between the point of attachment to the antenna and the aerial tuning unit.

I think I have covered the salient points of this method of building a cheap beam chaps. So I'll leave the rest to you to try it out. It will not cost you much to build and should improve your signals to the f.b. signal range. This aerial, being cut for fundamental on 20 metres, will also work on 15 and 10 metres without alteration except tuning the antenna tuning unit.

NEW AWARDS MANAGER

Will members please note that the address of the new Awards and DX C.C. Manager, Mr. Gordon Weynton, VK3XU, is 30 Park Street, Brunswick, N.10, Melbourne, Victoria. All correspondence regarding Awards, etc., should be sent to the above.

AUSTRALIAN V.H.F. RECORDS

| | | TWO-WAY WORK | | | |
|----------|-------------------|--------------|-------|-------------|--|
| Band Mc. | Stations | Date | Miles | World Rec'd | |
| 50 | VK5KL-W7ACS/KE6 | 28/8/47 | 5355 | 10500 | |
| " | VK6HK-VR2CG | 3/1/55 | 3928 | " | |
| " | VK8WG-VR2CG | 3/1/55 | 3916 | " | |
| " | VK3DM-VR2CB | 30/12/53 | 2405 | " | |
| " | VK7BQ-VK9DB | — | 2211 | " | |
| " | VK7LZ-VK9DB | — | 2211 | " | |
| 144 | VK3GM/3-VK7LZ/PF | 9/3/52 | 317 | 1400 | |
| 288 | VK3AFJ/3-VK3AAF/3 | 21/3/54 | 63.8 | — | |
| 578 | VK3ANW-VK3AKE | 11/12/49 | 81.8 | — | |
| 1215 | | | | 100 | |
| 2300 | VK3ANW-VK3XA | 18/2/50 | 9.1 | 180 | |
| 5650 | | | | — | |
| 10000 | | | | 100 | |
| 21000 | | | | 800 ft. | |
| 30000 | | | | — | |

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|----------|-------------|------------|-------------|-------------------|------------------|
| UM1 | 30 | 60 | 120 Ma. | 5 8 | |
| UM2 | 60 | 120 | 200 Ma. | 11 8 | |
| UM3 | 120 | 240 | 250 Ma. | 14 8 | |

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| | | |
|-----|--------------------------|---------|
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| UM2 | 5 1/2" x 4 1/2" x 5 1/2" | £9/17/3 |
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1954 VK-ZL DX Contest Results

REPRINTED FROM "BREAK-IN" APRIL, 1955

AUSTRALIA

| C.W.— | Total | 40 | 20 | 15 |
|---------|-------|------|------|-----|
| Call | | | | |
| VK2GW | 2807 | 1197 | 1348 | 262 |
| VK9AU | 1472 | 44 | 1369 | 59 |
| VK2AHH | 1427 | — | 1427 | — |
| VK3XK | 1233 | 664 | 495 | 74 |
| VK2QL* | 1052 | 564 | 404 | — |
| VK4SS | 1040 | — | 1040 | — |
| VK5KU | 1006 | 466 | 540 | — |
| VK2YB | 816 | 352 | 464 | — |
| VK3YD | 810 | 810 | — | — |
| VK3ANJ | 680 | 537 | 143 | — |
| VK3XB | 628 | 628 | — | — |
| VK7LJ | 525 | 397 | 128 | — |
| VK6LJ | 334 | — | 334 | — |
| VK2AFA | 279 | — | 279 | — |
| VK5RX | 245 | — | 245 | — |
| VK3AHH* | 220 | 104 | — | — |
| VK3RJ | 210 | 15 | 195 | — |
| VK7RT | 148 | — | 148 | — |
| VK5WO | 60 | — | 60 | — |
| VK2AKV | 30 | — | 30 | — |

* VK2QL's total includes 84 pts. on 80 metres; likewise VK3AHH's total includes 116 pts. on 80 metres.

PHONE—

| Call | Total | 40 | 20 | 15 |
|--------|-------|-----|------|-----|
| VK5MS | 1672 | — | 1672 | — |
| VK4KS | 1407 | 214 | 1236 | — |
| VK4SF | 1317 | 183 | 1003 | 131 |
| VK9DB | 973 | — | 753 | 220 |
| VK2AHH | 836 | — | 836 | — |
| VK5XN | 606 | — | 606 | — |
| VK5LC | 533 | — | 533 | — |
| VK5CE | 427 | — | 427 | — |
| VK2AKV | 410 | — | 410 | — |
| VK5WO | 303 | — | 288 | 15 |
| VK4ZP | 283 | — | 163 | 120 |
| VK9SP | 215 | — | 215 | — |
| VK3XK | 177 | — | 162 | 15 |

LISTENERS—

Geoff Morris, 639 points.
D. H. Rankin, 295 points.
M. Ide, 54 points.
M. F. Taylor, Check.

NEW ZEALAND

| C.W.— | Total | 40 | 20 | 15 |
|-------|-------|------|------|-----|
| Call | | | | |
| ZL1AH | 3134 | 1009 | 1624 | 501 |
| ZL2GS | 2122 | 827 | 883 | 412 |
| ZL3JA | 2106 | 867 | 920 | 319 |
| ZL1MQ | 1520 | 468 | 957 | 295 |
| ZL4CK | 995 | 565 | 430 | — |
| ZL2GX | 163 | — | 163 | — |

Check Logs: ZL1HY, ZL2ADS, ZL2IQ, and ZL3GQ.

PHONE—

| Call | Total | 40 | 20 | 15 |
|-------|-------|-----|-----|-----|
| ZL1MQ | 899 | 116 | 543 | 240 |
| ZL3NH | 737 | — | 737 | — |
| ZL2GX | 457 | — | 457 | — |
| ZL4JA | 319 | 169 | 150 | — |

LISTENERS—

R. W. Gray, ZL304, 1122 points.
B. Robertson, ZL232, 340 points.

OVERSEAS

| C.W.— | Points | C.W.— | Points |
|--------|--------|----------------|--------|
| CR7LU | 4 | PY5TH | 1 |
| DL1ED | 588 | SM5LL | 260 |
| DL1KB | 416 | SM7AVA | 240 |
| DL2BC | 300 | SM4BEC | 208 |
| DL1QT | 170 | SM3AKW | 189 |
| DL2RO | 144 | SM5AQV | 162 |
| DL3OC | 99 | SM5AQW | 140 |
| DL6DF | 70 | SM3AKM | 136 |
| DM2ACM | 42 | SM5VK | 60 |
| DL1YA | 4 | SM3AEQ | 50 |
| EA3CY | 30 | SM3BIZ | 4 |
| EA3IH | 1 | SM6AJN | 1 |
| FK8AE | 253 | VE7ALE | 252 |
| FK8AC | 108 | VP4LW | 2 |
| G5RI | 403 | VQ4EG | 198 |
| GI4RY | 60 | W8JIN | 2240 |
| HA5KBA | 216 | W6MVQ | 1786 |
| HB9MU | 98 | W6LDD | 1694 |
| HB9MO | 35 | W6MUR | 1200 |
| HR1AT | 176 | W5HVR | 884 |
| JA1CJ | 1416 | W6GPB | 612 |
| JA3BB | 627 | W6ATO | 574 |
| JA1AQ | 484 | W4KVX | 546 |
| JA8AQ | 363 | W8KIA | 441 |
| JA1AS | 280 | W2WZ | 396 |
| JA7AD | 90 | W9ABA | 363 |
| JA4AF | 56 | W7PQE | 351 |
| JA1FA | 4 | W4HQN | 324 |
| KL7BBV | 60 | W3VKD | 280 |
| KZ5GH | 160 | W0RSL | 264 |
| LU6DJX | 410 | W1RWP | 70 |
| LU7AS | 102 | W5GSR | 65 |
| LZ1KAB | 108 | W6ID | 63 |
| OE1ER | 144 | W5OLG | 28 |
| OH2MQ | 55 | W0LLU | 24 |
| OH3SR | 9 | W6EJA | 21 |
| OH3RA | 8 | W6NJU | 18 |
| OH2LA | 1 | W9FYU | 16 |
| ON4TQ | 135 | W0VFM | 16 |
| ON4CK | 54 | W6WSS | 15 |
| ON4PA | 35 | W8HHR | 12 |
| OZ7BG | 28 | W1YYM | 8 |
| PA0VB | 72 | W9UKG | 8 |
| PA0TAU | 63 | W1ZMB | 6 |
| PA0ZL | 18 | W2NHH | 1 |
| PA0FB | 9 | XE1PJ | 1 |
| PA0HP | 1 | YV5AE | 168 |
| PA0RC | 1 | YV5DE | 9 |
| PJ2AN | 135 | 4S7LB | 66 |
| PY7AB | 39 | | |
| PY4IE | 36 | Multiple Ops.: | |
| PY2BNX | 4 | K6AAJ | 1140 |

PHONE—

| C.W.— | Points | C.W.— | Points |
|--------|--------|--------|--------|
| EA3GF | 1 | OZ7BG | 2 |
| F9RM | 8 | PA0NU | 66 |
| HA5KBA | 1 | PA0ULA | 4 |
| HK3PC | 720 | PI1J | 78 |
| 11TDJ | 45 | SM5LL | 12 |
| JA3BB | 315 | VE5RU | 1 |
| JA4AF | 256 | VS2EB | 700 |
| JA1CJ | 200 | VS2DQ | 682 |
| JA2XE | 78 | TI2GC | 324 |
| JA2WB | 75 | VU2RC | 1 |
| JA1FA | 4 | W6YY | 405 |
| JA1GV | 4 | W8JIN | 110 |
| KH6BAK | 350 | ZS5AW | 150 |
| KZ5GH | 66 | ZS1PM | 20 |
| LA5YE | 6 | ZS8AJW | 2 |
| OH2OV | 90 | 4S7GV | 32 |

Club Competition:
Northern California DX Club—1st.

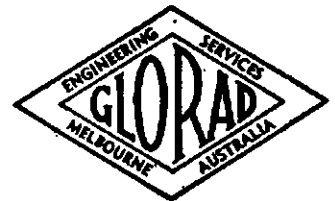
LISTENERS—

U.S.A.—Ben Adams.
Bulgaria—LZ3865.
Switzerland—HE9RDX.

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FOR MONTHS OF FEBRUARY AND MARCH, 1955

NEW CALL SIGNS

- VK— New South WALES
 2EZ—W. G. Spencer, Station: "Caroline," Gannon's Rd., Dolan's Bay; Postal: 17a Stanley Ave., Mosman.
 2JS—T. M. S. Spence, 63 Bremlba St., Grafton.
 2ZA—A. A. B. Slight, 31 Lamrock Ave., Bondi Beach.
 2ACZ—D. J. Allen, C/o. S.M.H.E.A., Island Bend, via Cooma.
 2ATU—E. M. Cragg, Portable, 86 Hawthorn Ave., Chatswood.
 2ZAD—B. Holland, 9 Downshire Pde., Chester Hill.
 2ZAN—K. N. North, 18 Gladstone St., Bathurst.
 2ZAY—N. I. Bruce, Lot 25, Woronora Cres., Como.
 2ZBF—F. W. Fowler, 4 Thompson Cres., Tamworth.
 2ZBH—W. O. Hill, 15 Morgan St., Petersham.
 2ZBJ—W. B. Jones, C/o. Griffith Producers Co-op. Pty. Ltd., Griffith.
 2ZBM—H. O. Matthews, 198 View St., Annandale.
 Victoria
 3BD—R. C. Krummel, 4 Ward St., West Preston, N.18.
 3AAV—A. I. Dunicliff, 1 Bellbrook St., East Newborough.
 3ADE—B. P. Everett, 95 Victoria St., Warragul.
 3AJK—J. Spark, 20 Marshall Ave., Moe.
 3ALR—G. L. H. Hipwell, 17 Princes Ter., St. Kilda Rd., Melbourne, S.C.2.

- 3AQN—F. E. Naylor, 116 Finch St., East Malvern.
 3ZAP—K. J. Love, 27 Bishop St., Oakleigh, S.E.12.
 3ZAT—N. A. Town, Leith Road, Montrose.
 3ZAU—H. S. Libburn, 21 Albert St., Mitcham.
 3ZBB—A. J. Bowman, 478 Nepean Highway, Frankston.
 3ZBD—W. I. Dawson, 14 Tait St., Footscray, W.11.
 3ZBE—A. F. Elliott, 31 Fenelon St., Ascot Vale, W.2.
 3ZBM—M. J. Murnane, 148 Blyth St., Brunswick.
 3ZBR—J. R. Barber, Carr's Lane, Anakie.
 3ZBT—C. Taylor, 4 Austin Ave., Elwood, S.3.
 Queensland
 4BM—W. J. Mead, New Cleveland Rd., Gundale, Brisbane.
 4TX—E. J. Leather, Jefferson Lane, Palm Beach.
 4ZAL—G. L. Lang, Station: Horseman Rd., Warwick; Postal: C/o. Warwick Broadcasting Co. Pty. Ltd., Warwick.
 South Australia
 5EE—E. T. Walter, 216 Prospect Rd., Prospect.
 5HJ—H. J. Champion, C/o. D.C.A., Parafield.
 5MM—M. M. Harding, 121 Collins St., Broadview Gardens.
 Western Australia
 6BE—J. R. Elms, 131 Shepperton Rd., Victoria Park.
 a Tasmania
 7AC—D. G. Cartwright, 38 Mary St., Launceston.
 Territories
 1AWI—W. H. Oldham, Mawson, Antarctica.

- Tasmania
 7BC—B. D. Clark, Fletcher St., Stanley.
 7RA—J. H. Ratcliffe, 30 Malunna Rd., Lindisfarne.
 7RC—R. C. Ireson, C/o. D.C.A., Government Aerodrome, Box 81, Currie, King Island.
 Territories
 9CR—C. W. H. Rasmussen, C/o. Lutheran Mission, Madang, N.G.

CANCELLED CALL SIGNS

- 2AAC—M. J. Cosgrove.
 2AAV—A. I. Dunicliff. Now VK3AAV*.
 2AEE—E. T. Walter. Now VK5EE*.
 2AJS—T. M. S. Spence. Now VK2JS*.
 2AOE—A. N. Wilson.
 2AQU—H. J. Champion. Now VK5HJ*.
 2ZAY—I. B. Neil. Name changed*.
 3APW—R. M. E. Rees.
 3AZA—A. A. B. Slight. Now VK2ZA*.
 4IN—F. E. Naylor. Now VK3AQN*.
 4TC—A. H. Burton.
 5DV—D. B. Vaughton.
 5JM—W. J. Mead. Now VK4BM*.
 5SA—R. de P. L. Mitchell.
 6KR—V. F. Bell.
 7DA—A. Anderson.
 7ZAC—D. G. Cartwright. Now VK7AC*.
 9VG—H. A. Vinning.
 * See New Call Signs.

CHANGES OF ADDRESS

- VK— New South Wales
 2LP—L. N. Page, 20 Douglas St., St. Ives.
 2NI—A. H. Nicholls, 53 Osborne St., Manly.
 2RS—D. C. Haberecht, 605 Abercorn St., South Albury.
 2UQ—P. J. Hanley, 88 Parramatta Rd., Camperdown.
 2AAD—R. Hodgins, Station: Vessel "Teralba"; Postal: Ross St., Glenbrook, Blue Mts.
 2AAF—A. Fisher, 38 Carter's Lane, Fairy Meadow, Wollongong.
 2AAN—M. Butler, 83 Chester St., Epping.
 2AEF—A. J. McGuigan, 28 Walker St., Lismore.
 2AHK—A. E. Clark, C/o. Mrs. McGuigan, 28 Fawcett St., Kyogle.
 2AHT—J. E. Thompson, 34 Renwick St., Toronto.
 2ALJ—N. G. Beard, 4 De Chair Rd., Brookvale.
 2ALO—A. B. Clark, 35 Moxon Rd., Punch Bowl.
 2AOM—A. N. Murdoch, Kingsgate Flats, Bourke St., Taylor Square, Sydney.
 2ASO—A. R. Simpson, 79a Carter St., Cammeray.
 2AUH—F. Hinks, 24 Johnson St., Lambton, 2N.
 2AUR—G. V. Randall, 39 Beuna Vista Ave., Denstone.
 2AVG—E. G. V. Gabriel, 48 William St., Port Macquarie.
 2AXD—E. A. Druiitt, Alagala St., Narromine.
 Victoria
 3BK—S. C. Baker, 40 Bondi Rd., Bonbeach.
 3FS—A. J. O'Brien, Old Eltham Rd., Lower Plenty.
 3HD—H. D. Ward, 28 Stockdale Ave., Clayton.
 3HY—H. L. Andrews, 285 Gray St., Hamilton.
 3MG—K. W. Jane, 8 Orrong Cres., Camberwell, E.6.
 3OY—W. D. Iliffe, 30 Warrigal Rd., Mentone.
 3QF—R. Rowley, Silas Ave., East Frankston.
 3XR—R. E. Sankey, Colchester Rd., Bayswater.
 3YK—G. C. Douglas, 7 Wentworth Ave., Canterbury, E.7.
 3YM—S. A. Thompson, Lot 128, Afton St., West Essendon.
 3ZB—T. G. Roper, 3 Queen St., Surrey Hills.
 3AAF—H. G. Smith, 17 Duncan St., Box Hill.
 3ADD—H. L. Dantell, 11 Kilgara Ave., Hartwell.
 3ANL—E. L. Blackmore, Dundas Rd., Maryborough.
 3AQF—J. R. Fryer, 22 Grant St., North Fitzroy.
 3ARU—A. N. Jones, 205 Burnbank St., Wendouree, Ballarat.
 3AZO—J. A. Cunliffe, 21 Highview Rd., East Preston, N.18.
 3ZAH—R. L. Haymes, Lot 12, Latham St., East Bentleigh.
 Queensland
 4UX—C. P. Singleton, 47 Herberton Rd., Atherton.
 4ZX—A. F. W. Bullock, 31 Greens Rd., Camp Hill, Brisbane.
 South Australia
 5AL—K. S. Harris, 38 King William Rd., Goodwood.
 5GA—G. E. Andersen, "Flinders House," Port Lincoln.
 5KS—R. A. Sedunary, 157 Churchill Rd., Prospect.
 5KV—B. F. G. Nitschke, 18 Hender Ave., Klemzig.
 5RX—G. W. Luxon, 27 Belair Rd., West Mitcham.
 5SD—R. S. Amos, 31 Balranald Ave., Largs Bay, Western Australia
 6FC—F. G. Clarke, Lot 8, Daley St., Mt. Yokine.
 6IW—A. F. Wreford, Seventh Rd., Armadale.
 6TR—T. W. Reed, 28 Hope St., Waterman's Bay.

BOOK REVIEW

SINGLE SIDEBAND

Under this title the A.R.R.L. have published 175 pages in which are collected everything of value which has appeared in "QST" on single sideband. Some parts are straight reprints, some have been condensed, some have been brought up to date. But everything that you could use today if you were to read the original articles has been retained.

It covers not only the various methods for generating single sideband, but also receiving, linear amplifiers, operating aids and all the other points which go towards making a complete single sideband station.

If you are thinking of taking up single sideband you can do no better than to peruse this comprehensive book. It will tell you the best methods which have been proved in practice and save you a lot of grey hairs.

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 B9A 9-pin Noval, 11/5. Screening Can 2/6 extra.
 (For operation beyond 200 Mc.)

BELLING & LEE "NYLON" SOCKETS

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 Type L720/S 9-pin Noval, 9/5 with Can.
 (For operation to 200 Mc.)

MICA-FILLED SOCKETS—

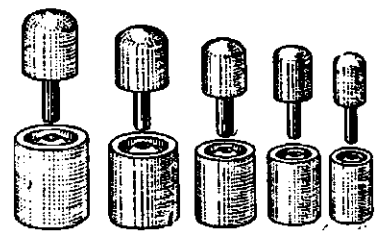
- Teletron Type ST27-L 7-pin Miniature (less Can), 14/- dozen.
 Teletron Type ST57-G/2 7-pin Miniature (with Short Can), 3/6 each.
 Teletron Type ST57-G/3 7-pin Miniature (with Long Can), 3/8 each.
 Teletron Type ST19/L 9-pin Noval (less Can), 16/4 dozen.
 Teletron Type ST59-L/2 9-pin Noval (with Short or Long Can) 7/- each.
 McMurdo 7-pin Miniature (with Can), 3/8 each.
 McMurdo 9-pin Noval (with Can), 7/- each.
 Belling & Lee B8A Bakelite Wafer Socket, 2/3 each.

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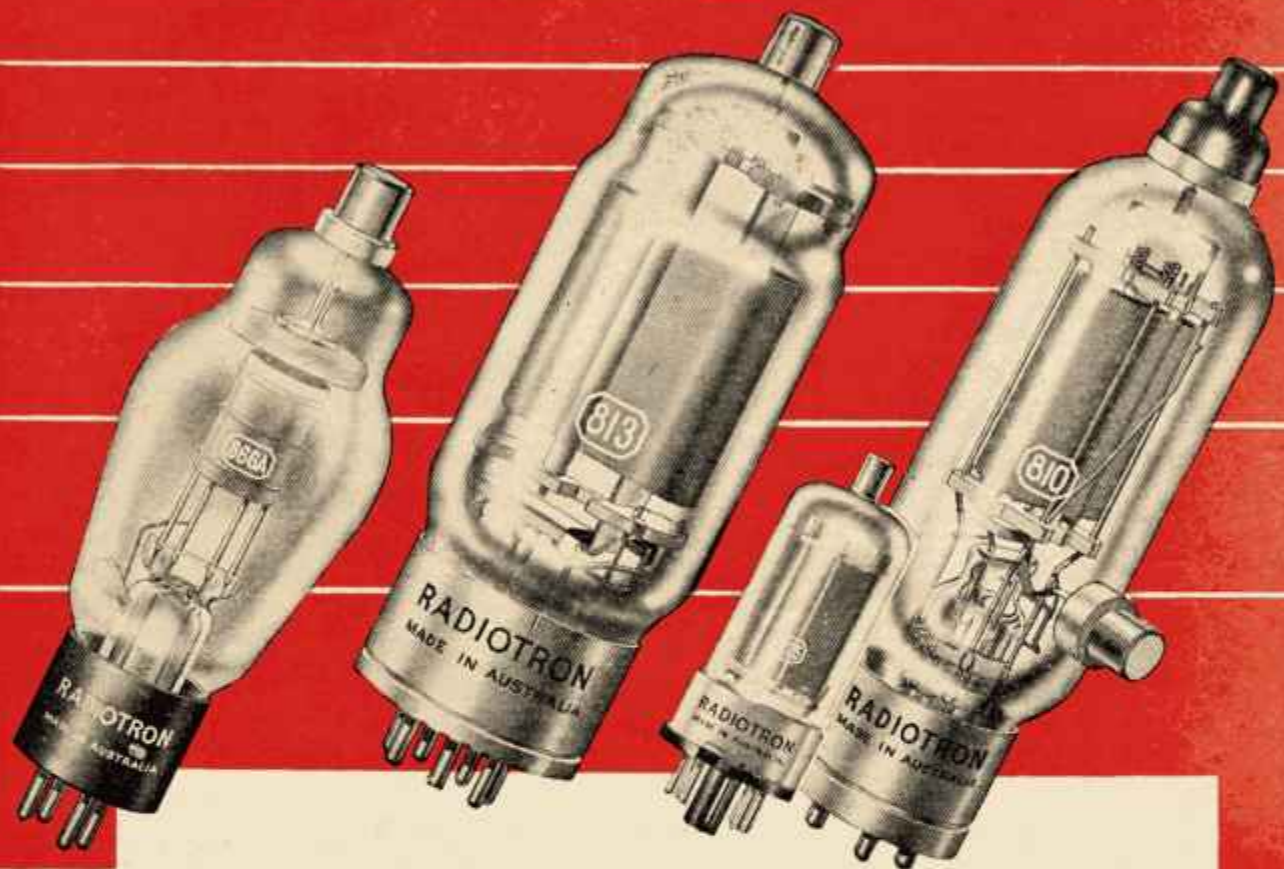
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SHORT WAVE LISTENERS' SECTION*

VICTORIAN S.W.L. GROUP MEETING

The April meeting of the above Group was very interesting. After the general business had been disposed of, 3LN took the chair with 3ZAJ and 3OJ. After much setting up of gear, Len finally put the rig on the air and contacted mobile station 3ALY. During the first few minutes of the contact, the fire alarm rang down in the street and in seconds the brigade came hurtling along. 3LN then promptly asked 3ALY where the fire was, and was it safe for us to stay up top? After the commotion died down, it was found that it was not our place on fire after all, but a cafe around the corner.

After this little episode, 3LN and 3ZAJ demonstrated a beam and how it works by adding and removing elements from the dipole. The evening closed with a grand round of applause to 3LN and Mrs. 3LN (Phyl). 3ZAJ, 3OJ and 3ALY. Once again on behalf of the S.W.L. Group, let me thank all you boys for coming and giving us this fine demonstration, and to V.h.f. Group for making this possible.

SOUTH AUSTRALIAN S.W.L. GROUP

From Mac Hilland I received a very short report from your Group this month. Mac states that much interest is being shown in the above Group, judging by the enquiries being received. As yet the Group is in its initial stages, but with the interest that is being shown, the Group should soon become quite strong in membership.

VK-ZL DX CONTEST

We were very pleased to hear that one of our VK3 members won the Australian Receiving Section of the VK-ZL DX Contest. His name is Geoff Morris. Well Geoff, congratulations on your magnificent win. Geoff is a very keen member and participates of all the VK3 activities. Geoff received a letter and a very nice Certificate for his effort and no doubt much excitement transpired on receiving this news Geoff.

NEWS ON THE BANDS

21 Mc.: Welcome back to VK land John McKendrick. Hope to see you along at the June

* Compiled by John Wilson, 37 Rayment Street, Alphington, Vic.

Meeting. John has heard the following: KH6, W6, ZL2, ZL1, HC. From Jeff Morris: ZLs, KH, KZS, HP3, CP5, HCl, ZS1, 2, 5, 6, VS8, VK9, VR2.

14 Mc.: From John McKendrick: KL7, VR2, CT1, ZM6, W1, OE, F3, VK, W0, KR6, KA, KH6, VE8. Len Cragen (of VK5) reports hearing: G2, G3, JA6, KA2, 3, 7, 8, KH6, KR6, VS2, VK9, W0, 3, 5, 6. Jeff Morris heard CO2, ZL3, VF, KL7, CT1, G, T12, KS6, II, OD, ZL, ZM, ZK, HC, F8, 9, FI, JA, KA, KP6, KR6, ZS1, G, VU, 4S7, 3V8, 4X4, XZ2. Frank Nolan reports YN4CB in Nicaragua. Michael Ide heard CN8, EA, ZS1, ZM6, VR2, KH6, KA2, W0, 5, 6, 7, 8, VE7, XE1, HCl, CT1, KJ6, KA3, K4, KX6, HRI, G2, ZK1, KL7, KG6, KA7. At my location: W0, 1, 3, 5, 6, 7, 8, 9, KA, KR, KH, 4X4, G3, G2, VS, VR. Mac Hilland heard KL7, CT1, KR5, KH6, ZE2, ZD6, 4S7, HP3, KH6, JA1, T12, W5, 6.

7 Mc.: From John McKendrick: W2, 3, 0, KH6. Len Cragen, W3. Michael reports KH6, W6, K2, W5, 4, 3, VK9, and at my location: VK2-9, KH6, KL7, W2, 3, 4, 6, 7, 0.

3.6 Mc.: John heard W0, VK1, ZL, W6. Len heard ZL3 and at my location VK2-9, ZL1, 2, W0, 5, 7.

BROADCAST SHORT WAVE NEWS

U.N. Action on Radio Jamming
The recent action of the United Nations General Assembly in adding a clause to the International Broadcasting Convention requesting countries to refrain from jamming broadcasts was carried 37 votes to nil, there being 17 absentees including the Soviet bloc.

Jamming was first noted by listeners in 1939 after the Munich crisis when broadcasts in the German language became interfered with. Jamming carries on and the end of the War did not see the finish of jamming. To combat it, all available transmitters are thrown against the barrage, some 70 in all.

DX TIPS TO LISTEN FOR

TAP on 9465 Kc. carries an English programme at 7 a.m. from Ankara. Cairo broadcasting to Europe on 9480 Kc. to sign off at 7 a.m. week days and 8 a.m. Sundays with popular music. Latin Americans are active on 15 Mc. and S9 signals are heard from LRU at 7 a.m. and CE1515 on 15.15 Mc. Santiago.

TECHNICAL PROBLEMS

A letter has been received from a country associate member asking if we would give advice on a technical question.

The Technical Editor will be pleased to advise any member in need of assistance with a technical problem. Just forward your query and a stamped addressed envelope for reply.

Chile, closes at 2 p.m. and FRB23, Radio Record, on 15.139 Mc. at 12.30 p.m. Diakarta is now operating on 6045 and 9710 for all three English transmissions at 9 p.m., 12.15 p.m., and 5 a.m. Vatican Radio is shortly moving to the outskirts of Rome where land has been leased for a new transmitting site. The present English broadcasts are 1 p.m. on 7289, 9646, 11685, 15120 Kc.; 4.15 a.m. on 6190, 7280, 9646, 11685, also English to South Asia on Tuesdays 2 a.m. on 9646, 11685 Kc. and also on Thursday at 2.30 a.m. on 6190, 9646 and 11685 Kc.

S.W.L. CONTEST

Remember that all QSL cards must be received by 30th June, 1955. Entries to contain the following: (1) all cards to be sorted into section entered, i.e. 1, Amateur; 2, S/W Broadcast; 3, Broadcast Band; Section 4 will be determined by the judges who will judge each section and then tally individual totals into an overall number.

(2) A list compiled by the entrant of all cards sent (two copies), one will be returned upon receipt of cards, and will be official notification to entrant of receiving entry. It should also receive formal notice of entry into contest, e.g. I wish to enter the following QSLs in the following sections, etc.

All entries will be returned as soon as judging is completed. Judges' decision is final and no correspondence will be carried on regarding decisions of the judges.

(Continued on Page 15)

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FIFTY MEGACYCLES AND ABOVE

NEW SOUTH WALES

The main activity of the V.h.f. Group this month centred around the Autumn Field Day, which was held on 24th April on 2 mx; 18 field stations and 14 home stations participated. The day took the form of a relay, a message was originated in Sydney and sent to VK4 and VK3 via a series of stations, both field and home, located throughout the State.

The Northern link started in Sydney from 2WI (20A) and thence to 2ALJ (Dee Why), 2ANF/P (Mt. Tomah), 2AZO/P (Cala Heights), 2BZ (Newcastle), 2VU (Singleton), 2ANU (Muswellbrook), 2ATO/P (Barrington Tops), 2HE/P (Blue Knob), 2HO/P (Pt. Lookout), 2AQI (Armidale), 2ATS and 2ADT (Inverell), and 2AHH (Kempsey), unfortunately the signal did not progress past these points, as no stations were available to send the signal further north.

In the South-West link, a second message was originated by 2WI and sent to VK3 via the following stations: 2LG/P (The Summit), 2ZAG/P (Mt. Lambie), 2AOA/P (Mt. Panorama), 2JW/P (Mt. Canobanks), 2WH (Forbes), 2ZAA/P (Kendall), 2AJO (Coolamon), 2RS (Albury), and thence to 3UI/P (Mt. Hickey) and so to 3WI. The return message from VK3 was returned to Sydney via the south and the following stations formed this link: 3UI, 2ZAA/P, 2JW/P, 2GU (Canberra), 2HL/P (Mt. McAlister), 2AJZ/P (Mt. Gibraltar), 2AWZ/P (Heathcote), 2JX (Wentworth Falls), and so back to 2WI.

The relay officially finished at 12.30, and after this all stations were looking for distant contacts and some very good ones were made, such as 3UI/P to 2WH (310 miles), 2HO/P to 2JX (268 miles), 2HO/P to 2ANF (256 miles), 2HE/P to 2ANF/P (190 miles), 2ATO/P to 2AJZ/P (188 miles), 2ZAA/P to 3UI/P (150 miles), 2JW/P to 2GU (190 miles), 2BZ to 2HO/P (176 miles), and so we ended another very successful field day, and a very good time was had by all. By the way, the mileage given above is approximate.

The results of the D/F Field Day held on Sunday, 27th March, are now to hand and are as follows: 2AJZ/P plus 165 pts., 2ATO/P plus 87 pts., 2ANF plus 50 pts., 2ZAG plus 15 pts., and 2AWZ minus 57 pts.

2WJ has now settled into his new QTH at Bringley and has erected his 4 over 4 antenna, this he christened during the field day by working 2ATO/P at Barrington Tops.

A few stations have been on 6 mx, but activity is low. Stations logged were VKs 2ANF, 2BG, 2AZN, 2ABR, 2ABH. There is also a whisper of activity to start again on 576 Mc.

We note with interest the increasing use of 80 mx by the v.h.f. enthusiasts for the purpose of furthering their contacts on 2 mx. The Sydney boys have relied upon 2APQ for this job for some time, but now another station has begun using this band. We do hope that John does not get beguiled away from his favoured band (what! Too much noise). Hugo 2WH has continued his good work on 2 mx, and his latest new fields to conquer are 2ANU and 2VU, Muswellbrook and Singleton respectively. Signals have been heard between these locations but much more is to be done before a regular path is established. 2HO, our new Chairman, started off his term of office by taking a 400 mile trip to Mt. Ebor for the Autumn Field Day and was accompanied by Perce 2APQ. They had a very successful trip and contacted 10 stations from this super location. They also heard several other stations, although did not make contact on the air, but they made up for this by paying personal calls on as many shacks as possible on their 400-mile trip home.—2AJZ.

VICTORIA

A record crowd turned up for the April Fox Hunt. Eleven cars and one motor bike started out from the assembly point. On the first location, where the Fox 3LN hid in a blind lane, Norm Dench and 3KD were the first to sweep their headlights into the lane, followed shortly after by 3VZ and 3IE, who made their catch on foot, then as the Fox was leaving the lane, 3YS and 3ADU also made a catch. On the second location, which was amid shrub on the banks of the Yarra River at Kew, the Fox had the pleasure of seeing 3ADU, 3VZ and 3APE, who were following each other, come to within 20 ft. of the Fox car and then turn their cars around and go off in the opposite direction to the other side of the river. Norm Dench and 3KD were next to come to this location and they made a catch, closely followed by 3ALY and 3ZAM. This made Norm and Ray's second "first" for the evening; their catch on the first run made Fox Hunt history as this was the first time the Fox has been caught on the first run of the evening. On the run to the third

location Norm and Ray made another catch, this time while the Fox was on the move. Then on the fourth location, where the Fox was hidden in trees off the road in East Camberwell, 3ZAM was first, followed by 3APP, 3KD, 3VZ, 3AHL and 3YS. The final location was at the home of Max 3BQ, who was most surprised when the gang dropped in, as he had not been control station for the evening. Arrangements had been made with John, Max's son. The control station was Graeme 3ZAA, who was ably assisted by Bon 3CG. We wish to thank Max, Mrs. Howden and their daughters for their friendly hospitality in opening their home to the gang for the final post-mortem and get-together for supper in which 37 participated.

The April V.h.f. meeting proved a very interesting one, when Don 3KA demonstrated a v.h.f. signal generator running from 50 to 400 megacycles. The taxi radio on which he demonstrated the signal generator was a 18 tube job, complete with tx, rx and vibrator power supply in a cabinet 10 x 9 x 4 in., which drew only 5 amps. on receive from a 6v. battery. It was a f.m. job and Don gave detailed diagrams and demonstration of the working of the muting and limiting, which had very good figures.

The remainder of the routine meeting consisted of the election of office-bearers for the ensuing year and all of the old office-bearers were re-elected, they are—President, Herb 3JO; Vice-Presidents: Eric 3ADU, Jack 3ZAJ and Alf 3IE; Secretary, Bob 3OJ; and Publicity and Civil Defence, Len 3LN.

Perfect weather prevailed for the final V.h.f. Field Day of this season, held on the first Sunday in May. Those who went portable were 3OJ at Ferntree Gully, 3VZ at Mt. Dandenong, 3IE at Ferntree Gully, 3ADU at Kellor and 3TO at Yallourn. 3LN, 3ALY and 3KD, who were attending the South Western Zone Convention, entered in the field day from the Ceres Lookout in the Geelong area. While at Ceres they gave a demonstration of v.h.f. equipment to other members attending the Convention.

Reports have come to hand that Bram 5ZAB at Narracourte has worked 3AGD and 3HG and has heard 3PG, 3CP and 3AGV. Bram is using a 636 converter and has a four el. beam 80 ft. high. He is keeping tentative skeds on 144.576 Mc. from 8 until 8.30 each evening, listening for Melbourne stations. 3AWC at Bendigo reports hearing 3AKR at Westmead.

For those interested, the Fox Hunt is held on the second Wednesday in each month commencing at 8 p.m. from the plantation in College Crescent at the rear of the University. Bring your own supper. The V.h.f. meeting is held on the third Wednesday in each month and is held at the Rooms, 191 Queen Street, unless otherwise advertised in the Sunday morning broadcast.

SOUTH AUSTRALIA

The v.h.f. bands in this State have, over the past few months, been surprisingly vacant, however it seems that with the winter months looming more of the regulars will again be heard in the usual cross-band hook-ups. Even your present scribe has been inactive for approx. three months. However, on completion of these notes, I have a sked with Ken 5KC on 50 Mc., that is if the rig still works. Col 5RO has acquired a new continental v.f.o. and has "plans drawn up" for a new hand-switched tx covering 3.5 to 576 Mc. using the new v.f.o. in the front end.

50 Mc.: This band has certainly been very quiet of late in so far as signals are concerned although the usual auto ignition noises are ever present. Heard Ron 5MK and George 5GB in QSO one Sunday morning. Have heard Ron on 14 Mc. what d.c. now Ron? Nil heard from 5JO and 5ON for some time. 5MT replacing 50 Mc. beam for a 21 Mc. beam shortly. Clem 5GL has raised the power of his 50 Mc. mobile tx to 3w. Hope my memory is correct. Clem, 5GL and 5FM heard in QSO, talking 2 mx, believe 5RI at Burra is also interested.

144 Mc.: A few stations heard this month, namely Neil 5ZAW using new rig with a QQE03/12 in final with another one as a push-pull tripler driver; sounds nice Neil. 5JN and 5JH also active, but sigs very hard to copy on selective rx—both stations using mod. osc. 5KC, 5ZAA and 5MT also active.

288 Mc.: Quite a few chaps on this band are now using superhet rx's and activity as usual is fairly good. Stations active last month were Howard 5XA, Rex 5KY, Jim 5JK, Jack 5LR, also 5ZAW and Bob 5PU. Bob now using push-pull 15Es in the tx with about 30w. input. Fred 5FT has deserted this band and will now be found tangling with the DX on 21 Mc., with or without negative peak clipper! 5PS appears and disappears on this band with monotonous regularity and seems to only know one word—"testing."—5MT.

TASMANIA

Since the 144 Mc. break-through last month nothing other than local signals have been heard in Launceston. As was to be expected, this break-through was followed by a post-mortem and the result of this was evidently not to the liking of those concerned because during May 7GM and 7BQ have both built new converters and 7LZ has modified his tx.

First 7BQ built a converter similar to the ones in use by 7PF and 7LZ, this used a 6AK5, 6J6 cascade amp. followed by a 6AK5 pentode 2nd r.f. amp., 6AK5 pentode mixer/l.f. amp. with a 6J6 xtal osc./multiplier. 7GM at this time was also re-building and at the last meeting of the Northern Zone, Gordon produced a converter consisting of a neutralised 6J6 r.f. amp. feeding into a 6AK5, 6J6 cascade coupled 2nd r.f. amp., followed by a 6J6 mixer, 6BA6 i.f. amp. and finally to a 6C4 cathode follower. Gordon also used a 6J6 xtal osc./multiplier. This converter was duly examined and admired by all present at the meeting and since then 7BQ has also completed another converter, the same as 7GM's.

During the summer months keen interest was taken by Northern Zone members in evening 144 Mc. tx hunts. 7KW was always in charge of the tx and as the season progressed both hunter and hunted became more cunning and many a good laugh has been had at the expense of one side or the other. This activity has, as was to be expected, increased the interest of our members in v.h.f. and even among our associates some excellent rx's for 144 Mc. have been constructed. One of these is now in use at Beauty Point and has provided us with our first out of town listening post which we have every reason to believe will be a new Z station before next Spring.

It is unfortunate that the change-over from 50 to 56 Mc. has to be right in the middle of our next DX season. This could possibly have a detrimental affect on the Ross Hull Memorial Contest and as many stations will have to be modified, it would be very helpful if our Contest Committee would make an early statement as to what form the Contest will take this year.

For the benefit of those stations wishing to calculate the exact distance of contacts, here is the exact locations of some of the Launceston stations:

7PF—147° 10' 53" E. 41° 27' 14" E.
7LZ—147° 8' 12" E. 41° 28' 43" E.
7BQ—147° 7' 57" E. 41° 28' 18" E.

—7LZ.

S.W.L. SECTION

(Continued from Page 14)

Winners will be notified in "A.R." and through 3WI on Sunday broadcast on 31st July.

It is advised to send your entries by registered mail. All care is exercised while in the Judges' hands. All entries must be received no later than last post on 30th June, 1955. Send all entries to Contest Committee, C/o John A. Wilson, 37 Rayment St. Alphington, N.20, Vic. Remember this is the last month, so act now.

HINTS & KINKS (S.W.L. SECTION)

Simple Code Practice Oscillator

Connect a morse code key across the output of a speaker transformer in such a way that when the key is up, the speaker is shorted out. On "key down" position the short is removed and the speaker operates normally.

Tune your receiver to a strong signal with no or infrequent modulation (D24, Fire Brigade, etc., will do quite nicely). The r.f. gain is backed off and the b.f.o. switched on. In "key up" position, nothing is heard (or very little—or very much, depending on the lengths of lead to the morse key—the shorter the quieter). In "key down" position a tone is heard which is all that is needed for some code practice.

The key specified is a common type available through the disposals, but an ordinary key could be used by inserting the key in series with one of the voice coil leads. However this requires breaking into the wiring on the speaker, whilst with the first mentioned way, the flex is just hooked across the v.c. terminals. Easy, I'll say it is!—3ZAQ.

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| 3Q5 ... 5/- | 6SA7 ... 10/- | 12SQ7GT ... 2/6 | VR35 ... 2/6 |
| 5V4 ... 10/- | 6SC7 ... 10/- | 816 ... 15/- | VR38 ... 2/6 |
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| 6B8 ... 15/- | 6SK7GT ... 12/6 | 834 ... £1 | VR75 ... 15/- |
| 6C5 ... 7/6 | 6SS7 ... 12/6 | 884 ... £1 | VR99 ... 5/- |
| 6C8 ... 7/6 | 6U7G ... 10/- | 954 ... 10/- | VR99A ... 5/- |
| 6F5 ... 7/6 | 7A4 ... 5/- | 955 ... 10/- | VR102 ... 5/- |
| 6F6 ... 10/- | 7A6 ... 5/- | 957 ... 10/- | VR103 ... 5/- |
| 6K6 ... 7/6 | 7A8 ... 5/- | 1625 ... £1 | VR105 ... 15/- |
| 6K7 ... 10/- | 7B8 ... 5/- | 5763 ... 25/- | VR122 ... 2/6 |
| 6K7G ... 7/6 | 7C7 ... 2/6 | EF50 ... 10/- | VR150 ... 15/- |
| 6L7 ... 10/- | 7E6 ... 5/- | U10 ... 2/6 | VT50 ... 2/6 |
| 6L7G ... 7/6 | 7W7 ... 5/- | VR18 ... 2/6 | VT51 ... 2/6 |
| 6N7 ... 10/- | | VR19 ... 2/6 | VT52 ... 10/- |

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| 1K7 ... 5/- | 6AC7 ... 10/- | 6SA7 ... 10/- | 12A6 ... 10/- |
| 1L4 ... 5/- | 6AG5 ... 10/- | 6SJ7 ... 10/- | 12K8 ... 10/- |
| 1S5 ... 10/- | 6C6 ... 5/- | 6SK7 ... 10/- | 1625 ... 15/- |
| 2X2 ... 10/- | 6D6 ... 5/- | 6SL7 ... 15/- | CV92 ... 15/- |
| 3A4 ... 5/- | 6H6 ... 5/- | 6SN7 ... 7/6 | EF50 ... 5/- |

C.R.O. Power Supplies, 220-260 AC input, variable HT output: 750v., 1300v., 1900v.; LT output 320v. at 100 Ma. Two 2.5v., one 5v., one 6.3v. filament winding. One 2X2, one 5V4. Complete in metal case 23 x 9 x 14. Few only, £12/10/- F.O.R.

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| Chokes, 15 Henry 175 Ma. ... | 20/- each |
| Solor 28 pF. silver plated wide-spaced Condensers ... | 7/6 each |
| 2 uF. 1000v. block type Chanex Condensers ... | 12/6 |
| Relays, A.W.A. Aerial Change-over type, 12v. ... | 15/- |
| English Carbon Mike Transformers, new ... | 5/- |
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| 2218.7 Kc. | 5815 Kc. | 7042.65 Kc. | 7134 Kc. | 8183.5 Kc. |
| 3025 Kc. | 5892.5 Kc. | 7047 Kc. | 7135 Kc. | 8188.889 Kc. |
| 3062.5 Kc. | 6100 Kc. | 7050 Kc. | 7150 Kc. | 8317.2 Kc. |
| 3086.5 Kc. | 6350 Kc. | 7052 Kc. | 7156 Kc. | 8320 Kc. |
| 3382.5 Kc. | 6375 Kc. | 7053.5 Kc. | 7163 Kc. | 9060 Kc. |
| 3500 Kc. | 6450 Kc. | 7064 Kc. | 7174 Kc. | 9125 Kc. |
| 3511 Kc. | 6666.7 Kc. | 7068 Kc. | 7175 Kc. | 10 Mc. |
| 3511.2 Kc. | 7005 Kc. | 7072 Kc. | 7725 Kc. | 10.511 Mc. |
| 3516 Kc. | 7010 Kc. | 7073.5 Kc. | 7810 Kc. | 10.515 Mc. |
| 3527 Kc. | 7010.7 Kc. | 7075 Kc. | 8007.69 Kc. | 10.524 Mc. |
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DX ACTIVITY BY VK3AHH*

PROPAGATION REPORT

3.5 Mc.: Openings to Europe and the Mediterranean area prevailed around 2100-2145z and North American signals broke through between 0730z and 1200z.

7 Mc.: On this band North America was workable over both the long and the short route (0600-1400z and 2100-2300z) with South America and Central America between 0600z and 1200z. Times for the Far East and the Pacific Islands were within 0600-1400z, while European break-throughs existed around 0600-0900z over the long path and 2000-2230z over the short path.

14 Mc.: This band showed some improvement although conditions still seemed to be somewhat unreliable. Long-path openings to Europe were predominant (0600-1000z) with some short-path break-throughs (1100-1300z) being very frequent. Conditions to North America were likely to exist at all times, but peaks appeared to be 2130-2230z and 0400-0600z.

21 Mc.: A considerable improvement of overall conditions can be reported for this band. With openings to North America from 0000z to 0500z, South and Central America were represented around 0000-0400z. Africa could be contacted between 0600z and 0900z, while the Pacific Islands and the Far East were consistently workable from about 2300z to 0800z. Break-throughs from Europe on the 13th, 17th and 21st April, 1955, have been reported.

27-28 Mc.: Comparatively good openings to North and Central America predominated during the month.

NEWS AND NOTES

St. Martin will be represented by CM9AA, PJ2AA and WIPST in June (from SCDXC).

Further news from the Southern California DX Club Bulletin: The following stations are active in Tunisia: 3V8AX, —AP, —BL, —BP. ZD9AC is active on 21 Mc.

VQ9NZK intended to commence operation, but no information on the duration of same is available (from 5WO).

W5VY is looking for VK-ZL on 28 Mc. every day. His frequency is 28.5 Mc. (from 4EL).

Extracted from the DXer of the Northern California DX Club: Call signs KG1AA to KG1LZ will be used by U.S. Amateurs operating from Greenland.

The Cocos Island Group appears to be back on the map again with ZC2PJ on 7 and 14 Mc. (from 3CX, 3JA and BERS 195).

KS4AW is reported to be active on 14 Mc. (from 3CX).

This month we welcome a new representative from VK9 land: Roy 9AU. Let us take this opportunity to extend our best DX wishes and congratulations to the new Papua-New Guinea Division of the W.I.A.!

QTHs OF INTEREST

ZD8AA—Tom Shepherd, C/o. Cables and Wireless Ltd., Ascension Island, via Capetown, South Africa.

PZ1QM—Box 631, Paramaribo. FB8BP—Jack de St. Amant, 141 Avenue Foch, Tananarive.

ZD4BM—Box 260, Tokaradi, Gold Coast.

OQ5CP—Box 982, Elisabethville, Belgian Congo. FM7WP—Andre Leandre, Route des Religieuses, Fort de France, Martinique, F.W.I.

YN4CB—P.O. Box 4, Blue Fields, Nicaragua.

MP4QAL—Fergus Walsh, Decca Navigator Co., C/o. Shell Oil Co., Doha, Qatar, Persian Gulf.

KS8AB—Ray Sparks Caldwell, Pago-Pago, American Samoa.

ACTIVITIES

3.5 Mc.: Neville 2APL worked W2, and Roy 9AU reports Ws. JAs. 3AHH heard YU3ABC (2130z), DJ1EJ.

† Hans J. Albrecht, 10 Belgravia Ave., Box Hill North, E.12, Vic.

* Call signs and prefixes worked.

z—zero time—G.M.T.

7 Mc.: Laurie 2AMB heads the list with VE8*, GM3CIX*, G6ZO*, GASAEH*, KP4AZ*, VP9BO*, LU6WK*, and VP6GC, on c.w. and W* on phone. Frank 3FC follows with JAs* and VE*. Austin 5WO reports JZ6DN* and JA4BB* on c.w. and W* on phone. 9AU mentions KH6* and JZ6DN, PY2CK, Europeans. Eric BERS195 heard DUTSV, WP4ABD, 4X4GW, KZ5BE, OH3QJ/MM, KP4YT, ZE3JP, 3V8AB, YI2AM, VQ3FN, KP4AZ, W4GBS/Air Mobile, FA9NV, F8B1H, ZE8J, LU6WD, KP4QA, CO3HD, PJ2AE, YV1AI, HR1JZ, YV1AD, F8U8A, HB8IX/MM, KC8CG. Dave Jenkin reports KH6, VE. Norman Clarke contributes JA1VP, JA1AAX, JA1ACX.

14 Mc. C.W.: 2APL: F*, DL*. Bud 2AQJ: SM*, DU8*, KR8*, VE*, Alan 3CX: F*, G*, 4S7*, OH*, VR3A*, DL*, KB6*, KP4*, I*, KC6AJ*, VE*, CM9AA* and OX3AL. Neil 8HG: VE*, G*, ZS8TE*, KC8AJ*, Jack 3JA: PJ2AE*, KC8AJ*, VP9BM*, VP9CB*, VO6U*, VO3X*, VP6KL*, IT1AI*, 9S4AA*, G*, and ZC2PJ. Ken 3KR: KA*, G*, OZ3FL*, HB9*, KG4AP*, VEBAW*, JA*, F*, VP9BM*, PJ2AE*, OE3VP*, CO2WD*. Bill 3TX: DL* and other Europeans*. Eric 4EL: HB4FE*, HB9*, G*, DL*, KP5TF*. Bob 4RW: VK1HF*, EA*, TF5TP*, John 5HI: KH6*, LU2GB*, ZP5GM*, KP4TF*, 9S4BE*, IIBNU/TIeste*, EA*, PJ2AJ*, YU2DU*. Ray 5RK: OZ7SN*, SM3BIZ*, LA*, 5WO: OK*, Ws* (long path). 9AU: VS2DB*, ZS1AH*, OZ*, SM*, G*, DL*, OH*, KX6*, MP4QA*, ET2AB*, ET3LE*, JZ0AG*, HZ1AB*, GIARY*, PA0*, KC8* and TA3, ST. SUIDD, VPALZ, EA, CN8HK, LB3OD, E14X, FB8BR, GW3, YU3, BERS195: KP8USA, KP4AZ, KZ5OM, ZS1FD, VK1VH, V88AE, JA, LU8DZA, LU1FBQ, LU8FBH. Dave Jenkin: KA, F, DU1, KJ6AZ, VS6CG, KR8, JA, KP4AZ, VSI, VEBAW, LABAB, GIARY, OH, DL, SM, 4S7, OE2HW, I, F, EA, G, ZS1PD, KL7AWB.

14 Mc. Phone: 2APL: W4MZZ/KL7*, I, YV5AB*, 2AQJ: G*, LA*, CT1PK*, Alan 3HL: G*, KH6*, 3JA: VR2AF*, EA*, GW3PV*, DL*, KR6*, OH*, YU2RC*, PA0IS*, SM*, ZS1SW*, 3KR: KL7ADR* and KS4AW. Stan 3TE: KL7*, HC1FG*, HR1*, G*, I, OHSNG*, OZ*, EA*, DL*, VE*, SM*, ZM6AT*. Don SABI: VE*, G*, 4X4CX*, EA*, CT1SX*, YV5AB*, HN0YN*, Gerry 3AGQ: VK1VH*, 4RW: KP8AK*, YC1ER*, OA5G*, VR3C*, TI2GC*, G*, KC8ZB*, YV5AB*, KL7AON*, ZM6AT*, VEBBV*, TF5TP*, 5HI: VK1VH*, GC8FG*, G*, YN4CB*, ZS5OV*, YN1RA*, KL7*, KH6*, 5WO: KA/JA*, G*, YV5EU*, ZS4G*, VE7*, 9AU: ET2AB*, KX6*, VS8*. Jim Hunt: LA, OH, SM, F, OE13USA, OZ1AD, ON4DB, ON4OC, DL, TF2WAB, CT1PK, YU, SVOWM, HZ1AB, I, HB9, MP4KAB, VS6CT, P11J, PA0CT, G13GX, P1, 51, GM, GD3UB, ZS6BW, ZS1SW, 3V8AS, OA3G, HC1FG, XE2KW, CO2BL, VS2, VS6, 4S7, KC8ZB, KC6UZ, KG4AP, KG4AF, VR2, VU2, KP6AK, XZ2ST, KJ6BG, ZM6AT, DU1. Dave Jenkin: KL7BW, A01J, XE2NF. Norman Clarke: KA, KM, KX6, ZM6AT, ZSSJM, KL7AZN, KL7ADR, XE1CY, TI2GC.

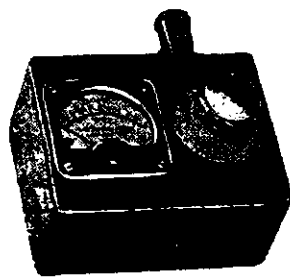
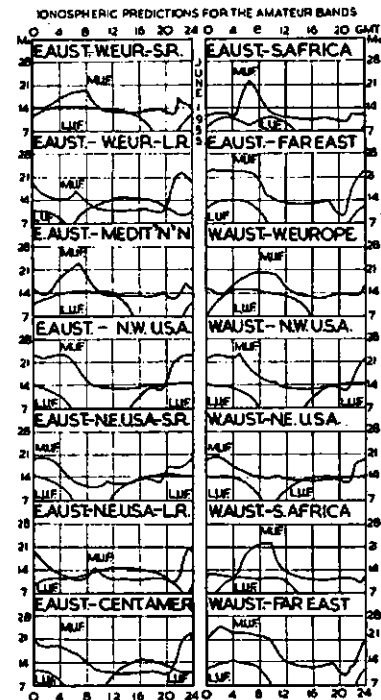
21 Mc.: Syd 3CI: Ws*. Angus 3NY: ZSs*, Percy 8PA: ZD6RD*, ZE2JK*, VQ4EU*, ZS5NZ*, ZS5MP*, ZS5CU*, ZS2FA*, ZS1BK*, ZS5OA*, ZS6AND*, CP5EK*, VP6GT*, VP6FR*, VF5SC*, HC1FS*, KZ5MB*, KZ5AS*, KZ5WZ*, KZ5CP*, HK4DF*, EK4AM*, YS1RA*, HP3FL*, TI2RC*, Ws*. KH6*, KA/JA*, W4VU/MM*, W8HKE/MM*, W7FKQ/MM*, K2KZX/MM*, 3AGQ: Ws*. Len 3ALD, KZ5CP*, 4EL: YN1AA*, 4S7L*, HP3FL*, HC1FS*, HC1ER*, HC1ES*, G3ADC, VS2*, V88AE*, VS6CZ*, KG6*, VU2*, JA*, KA*, MP4KAC*, KR6*, CR8AH*, ZM6AR*, ZS1JA*, ZS5HX*, ZS6LF*, ZS5HX*, ZS6WS*, CR1AA*, W3OZA/MM*, W3HXE/MM*, W10SF/MM*, W2ZXW/MM*, W5AXI/MM*, W6KUY/MM*, and Ws*. Max 4HD: HP3FL*, CP5EK*, HC1FS*, YV5EC*, VP6GT*, VP6FR*, VP6WR*, ZS5NZ*, YS1RA*, FA7ZA*, ZD6RD*, Ws*. KH6*, KA/JA*, KZ5*, 5WO: KZ5CP*, HC1FS*, HP3FL*, YS1RA*, VSI*, ZS6BW*, ZS6AND*, ZS6CV*, ZS5CU*, ZS6LF*, ZS5HX*, CR7AG, K2KZX/MM*, KH6*, Ws*. Jim Hunt: ZD6RD, ZE2JK, OQ5RU, VQ4FK, VQ4EF, CR7BE, ZS1, ZS2, ZS3, ZS6, KZ5, CP5EK, HC1, XE, TI2, HK4, VP6, YV5, HP3, G3, DL6, MP4, OD5, 4S7, VS6, VS2, DU7, VSI, JA/KA, KR6, KG6, KH6, AISAH, AI3AX, Ws. Norman Clarke: K2, KG6, KZ5, HP3, ZS6, XE1, TI2.

27-28 Mc.: 2ID: heard Ws and 2AQH worked a number of Ws* as reported by 3IY. 4EL mentioned W5VY*, K6EXG*, W0ZRX/MM*, and KH6AIO. 4RD: contributes W5VY*, W6HBE*, KH6AFS*, W4NJM*, K6EXG*, W6QLB*, W6ZOX*, W6DKO*, W81H*, HP3FL*, K6CDS/KH6*. Jim Hunt heard K8B and K2A.

Rare QSLs were received by 2AMB: VR3A (7 Mc.), 3CX: MP4QA. 5HI: LU7BO, LU3EB, HC2JR, CO2BK, PJ2AA, VQ2V, VR3A, FB8BC. 5WO: HC1ES, AP2Q, YV3CE, LU8EN, LU4DMG,

SV0WL, VR3A, YI2AM, HZ1AB, FR7ZA, VSSKU, EA9BC, 9AU: SV0WL, BERS195: ST2NG, VP6KL, VR3A, VR3D, SMC8CW, 5A3TF. Thanks to the Northern and Southern California DX Clubs, and VKs 2ID, 2AMB, 2APL, 2AQH, 2AQU, 3CI, 3CX, 3FC, 3HG, 3HL, 3IY, 3JA, 3KR, 3PA, 3TE, 3TX, 3ADI, 3AGQ, 3ALD, 4EL, 4HD, 4RW, 3HI, 5RK, 5WO, 9AU, and S.W.'s. BERS195, Jim Hunt, Dave Jenkin, and Norman Clarke.

PREDICTION CHART, JUNE, 1955



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 QSL Bureau: R. E. Jones, VK3RJ, 23 Landale Street, Box Hill, E.11. Vic.
 DX C.C. Manager: A. G. Weynton, VK3XU, 30 Park St., West Brunswick, N.10.

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 Meeting Night: First Friday in each month at the Royal Geographical Society Rooms, Ann Street, City.
 Divisional Sub-Editor: J. T. Hope, VK4XL, Royal Parade, St. John's Wood, Ashgrove.
 QSL Bureau: Inwards—J. Files, VK4JF, Wanda St., Buranda; Outwards—Miss Clair O'Brien, 93 Jardine St., Stafford.

SOUTH AUSTRALIA

President: G. M. Bowen, VK5XU.
 Secretary: R. G. Harris, VK5RB, Box 1234K, G.P.O. Adelaide, Telephone: 1151.
 Meeting Night: Second Tuesday of each month at 17 Waymouth St., Adelaide.

Divisional Sub-Editor: W. V. Parsons, VK5PS, 10 Victoria Avenue, Rose Park.
 QSL Bureau: Geo Luxton, VK5RX, 8 Brook St., West Mitcham, South Aus. (Inwards and Outwards).

WESTERN AUSTRALIA

President: F. A. T. Tredrea, VK6FT.
 Secretary: J. Mead, VK6LJ, Box N1002, G.P.O. Perth.
 Meeting Place: Perth Technical College Annex, Mounts Bay Road, Perth.
 Meeting Night: Third Tuesday of the month.
 Divisional Sub-Editor: D. E. Graham, VK6HK, 110 Edinboro St., Mt. Hawthorn.
 QSL Bureau: Jim Rumble, VK6RU, Box F319, Perth, West Aus. (Inwards and Outwards).

TASMANIA

President: F. J. Evans, VK7FJ.
 Secretary: W. G. Tait, Box 371B, G.P.O. Hobart.
 Meeting Night: First Wednesday of each month at the W.I.A. Club Room, 147 Liverpool Street, Hobart.
 Divisional Sub-Editor: V. F. Dore, VK7JD, 29 Brent Street, Glenorchy.
 QSL Bureau: K. A. Johnston, VK7RX, 34 Tower Road, Newtown.
 Zone Correspondents: Northern: M. A. Chaplin, VK7CA, 56 Trevallyn Rd., Launceston; North Western: R. K. Wilson, 11 Cunningham St., Burnie, Tasmania.

PAPUA—NEW GUINEA

President: F. M. Nolan, VK9FN.
 Secretary: D. F. Lloyd, VK9OQ, C/o. O.T.C. Receiving Station, Port Moresby.
 Divisional Sub-Editor: W. Holland, VK9BW, C/o. P.O. Box 76, Rabaul.
 QSL Bureau: D. H. Beadel, VK9DB, C/o. P.O. Box 107, Port Moresby.

FEDERAL

APPOINTMENT OF FEDERAL EXECUTIVE FOR 1955-56

The Victorian Division, as the Headquarters Division of the Wireless Institute, has advised of the appointment of the President, Vice-President and Secretary, to the Federal Executive for 1955-56. The appointments are as follows:—

President: William T. S. Mitchell, VK3UM, 1946 Malvern Road, East Malvern.
 Vice-President: G. Maxwell Hull, VK3ZS, 22 Dryden Street, Canterbury, E.7.
 Secretary: Douglas Bowie, VK3DU, 22 Norfolk Road, Surrey Hills, E.10.

The Federal Executive being responsible to appoint all further officers, the following are announced:—

Treasurer: G. A. C. ("Rick") Ewin, VK3AGC, 55 Denny Street, Brighton, S.5.
 Business Manager: William J. Falconer, VK3AWF, 21 Ilbarra Rd., Canterbury, E.7.
 Public Relations Officer: William R. Gronow, VK3WG, 2 Anthony Street, Glen Iris, S.E.8.
 Federal Co-Ordinator of Civil Defence Emergency Networks: George Glover, VK3AG, 54 Watt Street, Box Hill, E.11.

Bill Gronow, in retiring from the chair, can look back on a very busy year. His continued liaison with those responsible for the various services has done much to smooth the way for a better understanding. In taking up the duties of Public Relations Officer, he will be able to put to good use the knowledge he has used so well in the past.

Although new to the Presidency, Bill Mitchell will not be new in experience of Executive. His many years as Secretary and more latterly as Business Manager, will be a splendid preparation for the onerous duties that befall him. His experiences with Television, whilst in England, will be of extreme benefit now that this medium is about to arrive in Australia. His knowledge of Awards and their ramifications will be most valuable now that our "Worked All VK Call Areas" is about to become operative.

A new member to Executive is Bill Falconer. With the profound knowledge of an actuary to apply to business tasks, Bill is particularly fitted for the position of Business Manager. His active work in trying to find an equitable set of rules for the Remembrance Day Contest has already brought him into contact with many members and augers well for the future. And last, but by no means least, Max Hull, our new Vice-President. It would be futile to attempt to introduce this most energetic ex-Federal Secretary. The effect of his guiding hand will be seen in many of Federal Execu-

tive's projects, and particularly the Australian Radio Amateur Call Book. Members can confidently await more in the future.

NEW TRAFFIC LINK TO VK9

The Federal Traffic Manager, Doug. Paine, VK3FH, is pleased to announce that a new traffic link has been established with the Papua-New Guinea Division. The Traffic Manager at the VK9 end is Doug. Lloyd, VK9OQ. When contact was first made greetings were sent from the new Division and these were warmly reciprocated by Federal Executive on behalf of all other Divisions. In view of the distance and time factor, it is certain this traffic channel will be kept busy.

FEDERAL COUNCILLORS

Federal Executive notes with pleasure that Joe Brown, VK7BJ, has again been appointed to the position of Federal Councillor for VK7 Division. Those whose duties bring them in contact with this conscientious worker appreciate his wholehearted co-operation and wish him well for the coming year.

It has also been noted that Fred Ball, VK3YS, has found it necessary to vacate the position of Federal Councillor in the VK3 Division. During his period of holding this office, Fred has been most active on behalf of his Division and the Institute in general. It is hoped that the tenacity of purpose, which he displayed as a Federal Councillor, can be applied in a similarly productive field elsewhere. The incoming Federal Councillor for VK3 is the well known Russell Bradshaw, VK3SX. With his inimitable style and unflinching good humour, Russell will prove a worthy counterpart to Fred.

AWARDS MANAGER

Yet another change in Federal spheres is that of Awards Manager. Glen Morris, VK3BE, after many years in this office requested Federal Executive to find a successor. It was with regret that Executive set about this task. However, Gordon Weynton, VK3XU, former Vice-President of Federal Executive, has indicated his willingness to assume this exacting position. Executive, and the Divisions generally, are very fortunate in securing a person of Gordon's ability.

AMENDMENTS TO 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:
 Section 69. By inserting after the words "The Tasmanian Division," the words "The Papua-New Guinea Division."

Section 29(a): By inserting immediately after the word "Proficiency," the words "or Limited Amateur Operator's Certificate of Proficiency."

FEDERAL QSL BUREAU

RAY JONES, VK3RJ, MANAGER

At the moment of writing, Graham Roper, VK3ZB, the Victorian Division Inward QSL Manager, is laid aside with illness. We hope you make a speedy recovery Graham.

Was pleased to see Jim Austin, VK6SA, ornamenting Melbourne town during the first week in May. Jim was over for the I.R.E. get-together. Says it is five years since last here, but it doesn't seem that long. Jim is in a good paddock if appearances count for much.

Bill Holland, VK9BW, one of the old identities of that territory, plans a trip to Melbourne next year around Olympic time. Says it is long time since last down South and that business is good around his area.

VK2AAD/MM on S.S. "Teralba" on the Newcastle-Melbourne run seeks QSOs. Runs QRP, but puts in a good signal on c.w.
 VK6EJ, who is ex-G2AJU, seeks VK3 contacts on 3.5 Mc. band. He is breaking into the farming game, but finds time for Amateur Radio work after sundown.

ST2NG presently vacationing in Northern Ireland is shortly returning to Kharthoum and will be looking for VK on 7 Mc. c.w. around 1600-2000 G.M.T. from end of May onwards.

BERS195 is off again on his annual jaunt to VK7 from mid-May. Will be domiciled in the Launceston region for approx. six weeks. His walls about missing his beloved football will probably reach across the Strait. He is an ardent supporter of Carrington. The body blow inflicted by Hawthorn on May 7 will take years to forget.

Writer is presently planning a month's trip to the Shaky Isles for September-October next, during a spot of furlough. The XYL had her ear to the ground and smelt out the proposal and insisted on her inclusion in any plans. This unforeseen contingency could prove to be the last straw that could break the none-too-healthy purse and wreck the whole idea.

Doug. Beadel, VK9DB, the newly appointed QSL Manager for the VK9 Division, advises that the mailing address is Box 107, Port Moresby, Papua. Commenting on band conditions during April, Doug. says that DX is impossible on 80, difficult on 40, but 20 mX has been behaving well with lots of "pickings." He also states that 21 Mc. was patchy and that he worked an occasional KA, KG and KH on 28 Mc. He states, however, that when 28 Mc. was useable for those contacts, 21 Mc. gave the

same results with an increase of one S point. He put up a rotary 8JK some six months ago—wooden frame and dural elements, and is very pleased with the results, having added 30 new countries to bring the tally to 151 worked. He will be absent from Port Moresby on inspection duties until mid-June.

Bill Storer, VK2EG, ex-VK1EG, has recommenced duty at Telegraph Branch, Sydney. Bill spent practically the whole of his leave after return from Mawson in cleaning up the mess left by five feet of floodwater through his home at Muswellbrook. He lost a considerable amount of radio gear through flood damage. Bill is to be married on June 11 and the honeymoon will be spent in VK7. Plans to look up VK3 friends on the return trip.

NEW SOUTH WALES

The March general meeting was held at Science House, Gloucester St., Sydney, on 24th, and a creditable audience attended to enjoy a pleasant evening's entertainment. Jim Corbin, the President, opened the meeting and welcomed the visitors in the person of Vic. Randall, ZCSVR; Col Wade, ex-ZS4A, ex-GBCD; Mrs. Thrum, and Mr. Thrum, Sr. All were welcomed by members in the usual manner.

Letters were read by the Secretary, Barry 2ACH, from the Chief Secretary's Department and from the Premier's Department, offering the thanks of the authorities to the W.I.A. for their part in the recent flood emergency.

The President introduced Lieut-Commander Greg Thrum, R.A.N. (VK2ANP), who gave a very interesting discourse on Naval Communications and outlined some of the difficulties which are encountered in maintaining a multiplicity of channels of communication. This lecture was followed by the screening of a film, "Coronation Cruise of H.M.A.S. 'Sydney'" and we are very much indebted to Greg for his part in making the screening of this film possible. This was followed by a further film "Overland Adventure," a film of the Redex Trial of 1954, arrangements for this screening were in the hands of Bill Lewis, 2YB. All agreed that a pleasant evening had been spent and Bill Lewis proposed a popular vote of thanks to Greg for his effort.

Barry 2AAB placed a motion on the books to expedite the establishment of a Novice License by the P.M.G. Department; this motion was carried unanimously.

Charlie 2AWQ gave details of the N.S.W. Co-operative. The position at present is good, but it could be bettered by members and all are asked to contribute to the limit. Send your subscriptions to the Secretary, Box 1734, G.P.O., Sydney, and lend the Institute your money so that the establishment of a permanent headquarters in Sydney will be realised. Plans are well in hand in this matter and not only city members, but those who visit us from the country must realise what an advantage this will be. So chaps, get behind your Council and keep the money rolling in. Further details will be given in the weekly broadcasts.

The Treasurer is willing also to handle your subscriptions for the year, many have already been received and receipts issued, so keep Stan busy. The meeting closed at a late hour and all were shepherded off the premises by our friend the Caretaker. The meeting concluded in the usual place.

ZONE NOTES

Notes from the city area this month are rather sparse, but we will endeavour to fill in for those who could have sent some jottings to us. It appears that a few of the Sydney boys are getting among the occasional DX offering on 14 Mc. 2APT gets out better than most, works on 2 mx quite easily from Mount Lewis, also gets his transmission into a set in Wiley Park, hi. Ask 2AAB for details Jack. 2AUR joins the pantomime at times; busy putting a small beam together, painting a tower, etc. This bloke will ease off soon and will be found in the garden more. 2FA still has his troubles, best of luck Horrie. 2GE has a nice signal, had to listen to 2AYE recently, hi. Looks as though 2AYD will be working Maritime Mobile soon, will be listening Dave.

Ellsworth, W4VUU/MM, is off our shores again, puts out a beautiful signal from the "Pioneer Reef" and will, we feel sure, welcome visitors while in port. 2AHU still doesn't know how to put his tx together, but one of these days will appear we feel. 90K still around the place and enjoying himself. 2AAH busy with study and work, will be on during the holidays no doubt.

EASTERN SUBURBS

Ken 2SD, of Bondi, is having teething trouble with 144 Mc. receiving gear. 2ASE is another 144 Mc. man in a spot of bother, with his p.p. 676 G2IC converter having jibbed somewhere. Interest is being shown in 144 Mc. by some of

the Waverley Radio Club members; Ivan 2TN having been heard. It is believed that those planning to get going include 2QE, 2MB and 2ABV. 2NO ran into extensive trouble in the lengthy humid spell, with the loss of a 1,000v. power transformer, a Class B driver transformer, and a sub-modulator interstage transformer—all together. He found also that the 300 ohm ribbon feedline to his twin skeleton slot array for 2 mx was open circuit in both legs.

Not much heard from 2FA these days, but it is believed that Horrie has a real nigger in the b.c.i. woodpile. With 20 mx being rather unattractive in the early and mid-evening hours, it is not surprising to find some of the steady users of that band migrating to 40 mx. Have noticed quite a few, both in the Eastern and other suburbs, who no longer scoff at thoughts of 40 mx, but even call CQ thereupon.

Welcome to 2AAX, of Maroubra, a new arrival on 40 mx; Jack was using an AR2B, grid modulated, and was not satisfied with the modulation. Ted 2AHQ says he will soon be active again after about eight years' rest. He has already made a concrete base for a new 20 mx beam. Another old timer absent for several years has been heard frequently lately on 40 mx; he is Tom 2AGA. From what I hear, Tom is getting interesting in 144 Mc. Vince 2VA very busy with s.s.s.c and getting good results. 2AIF intends putting up a 20 mx beam; guess Ray will specialise on c.w. with his electronic key.

Lt. Commander Greg Thrum, of Naval HQ Amateur Radio Station VK2ANP, again organised a Navy set-up in the combined services exhibit section of Sydney's Royal Easter Show, but after a day's battle with the very excessive background accompaniment of electrical appliances and suchlike, gave up the unequal struggle and closed down. Bad luck, indeed. The way VK4W got over similar trouble at the Queensland Industries Fair was to provide for reception at a distant point—four miles or so—with a 2 mx link between. QED.

Although not strictly within the orbit of this region for activity notes, the hefty signal now hitting this part of Sydney on 2 mx from Norm 2ALJ is indeed fully local. It comes from his new location at Dee Why heights.

Some locals are talking of ground plane aerials for h.f. bands with all the assurance that such will be the answer to most problems. This scribe hastens to confirm that a properly functioning g.p. is a first rate radiator at low angles, but it has two serious disabilities for use in congested areas. Firstly, it has a habit of getting into b.c. rx's with annoying intensity, and secondly, on reception, it seems to reach out to drag in every scrap of local electrical noise. They are penalties to be paid for vertical polarisation, but nevertheless, the g.p. is still an excellent proposition.

NORTH COAST AND TABLELANDS ZONE

The foremost topic for April was, of course, the Urunga Convention, most details of which were published last month. There was, however, one important feature which was not fully expounded, viz. the Friday night discussion group which covered a wide range of subjects, particularly as both our Federal Secretary and our State President were in attendance.

It was unanimously decided to hold the 1956 North Coast and Tablelands Convention at Urunga as it has become a focal point for many of the zone members living on the Western side of the Divide, and has many advantages to offer that are not possessed by other towns.

The Committee for arranging the 1956 Convention is as follows: Patron, 2XO; President, 2AHH; Vice-President, 2ADN; Secretary, 2FH; Organiser, 2PA; Sydney Liaison Officer, 2ACD.

Alan 2FH answered many questions re disposals and touched on the difficulty of giving sufficient descriptions of goods, difficulty of advising country members of such things as tubes, etc., which are disposed of at meetings and delivery of same. Taken all round it would seem that the zone is receiving its share. Alan took away quite a few suggestions for improving the service to country members. Things in this regard may be slow for a while as supplies are short.

Quite a deal was said in regard to permanent mobile licenses, far too much to print here. Suffice it to say that F.E. are really on the job in this matter. After a discussion on the merits and possible conditions of Novice License, the meeting broke up so that the boys could get some sleep before breakfast.

The President, 2YC, addressed those present at the Saturday evening "do" for a considerable time in regard to progress made in handling food traffic. A full report on this would take pages, but briefly it would seem that big things are moving and that something concrete will eventuate. The problem is of course, how soon? It was fully impressed upon members of Council who were present that we want a uniform procedure adopted and a rapid handling of

traffic at the Sydney end. Many views were expounded and I think the various Councillors have taken home a better outlook on the requirements of the man in the emergency area.

The next gala event for the N.C. & T. Zone was the V.h.f. Field Day on 24th April. 2HO operated from Point Lookout, 46 miles east of Armidale, using 20w. and a 3 over 3 antenna. His bag included 2ATS Inverell, 2AQI Armidale, 2AHH Kempsey, 2HE/P Combyne, 2ATO/P Barrington Tops, 2BZ Newcastle, 2JX Wentworth Falls, 2ANF ML. Tomah, and heard one Sydney station. 2HE/P was heard quite well at Kempsey, but no sign of the other stations, except 2HO/P who was pounding in at R6 plus.

A newcomer to the zone will shortly be 2ATU who is permanently mobile throughout northern and western N.S.W. and he would appreciate contacts. During June, Port Macquarie is holding its Festival of the Pines and it is hoped to have VK2WI on exhibition.

It was disappointing that more stations were not heard or possibly operating in the northern part of the zone, to help get the official message through to VK4. The message got as far as Inverell, Ebor and Kempsey, so it had great possibilities of reaching its destination, 4W1, had there been a link available further north. Jack 2AAR has made a reappearance on the band, 2PA and 2AVG at R.S.L. Dinner recently. Ted's car had a "bump" and now out of commission—running on Jungle Juice?

SOUTH WESTERN ZONE

A new course on instruction has just started at the Griffith Radio Club with a number of new members attending. Club members qualifying for A.O.C.P. in the past are Ted 2AXD, Evan 2ACS, Brian 2ZBJ, while Bruce Fleck and George Harriman are waiting for their limited call signs. Brian 2ZBJ has commenced construction of a 2 mx rig with an 828B final. Griffith members were pleased to have Eric 2DY from Wollongong visit them recently. Ted 2AXD has moved to Narramine and the zone is sorry to lose such a keen member. Geoff 2BQ, Jim 2TC and Roy 2DO have been heard on the lower frequencies. Jim 2AJO and Don 2RS are still very actively delving into the wonders of 2 mx. Peter 2APP is doing a major re-build.

It is expected that the S.W. Zone Convention to be held at Albury in October will be a big success as usual, so build up that portable gear chaps and be ready when the time comes.—2PL

We might add to these notes a plea for more notes from the zones. Why not follow the lead of the S.W. Zone, each month I receive notes from a different member of that zone, so think it over chaps and keep the zone in the news. Thanks for co-operation in the past.—2ACD.

VICTORIA

The next meeting of the Victorian Division will be held on Wednesday, 1st June, at the Melbourne Technical College when Roth Jones will lecture on "Amateur Radio in the Antarctic." This will be a brief review of activity in the Antarctic from 1947 to 1955.

QSL CARDS

There is a considerable number of unclaimed QSL cards at the Inward Bureau, and Graham would be very pleased to clear them out. If you cannot get in to the meetings to collect them, then please send a stamped addressed envelope and they will be posted back to you. The address of the Bureau is G. Roper, 3 Queen Street, Surrey Hills, Vic.

80 METRE TRANSMITTER HUNT

Thirty-five attended the April 30 mx Tx Hunt. The tx was hidden by Laurie 3ALY and was located at Arundel, just past Kellor, by the winner Len 3LN, second place going to Jack 3VZ and third place to Reg. 3ZAD. A much better signal was received from the tx at the assembly point as Laurie had spent a lot of time on the gear pepping it up and Norm Dench has kindly donated a 6L6 final tube. The result is a very much improved tx. This Hunt was unique in that every one of the competitors had arrived on the location and had been searching for the tx for some considerable time, some for nearly three quarters of an hour, before the last to arrive, Len 3LN, actually located it.

Laurie had very cunningly hidden the tx in the middle of some box thorn bushes on the side of a rather steep bank of the Maribyrnong River at Arundel. He had carefully cut a path into the middle of the bushes, hidden the tx and then carefully replaced the bushes so that there was no sign of where he had made his entry. The car park on the opposite bank of the river provided an excellent grandstand view for the non-competitors and XYLS. This was

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MIC 36

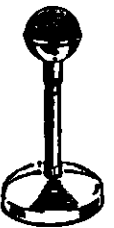


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Housed in attractive plastic case, this Microphone is ideal for home recording and public address, etc. Response unexcelled for its size and price. The performance is not affected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s. Recommended load resistance not less than 1 megohm dependent on low frequency response. Can be supplied complete with switch and floor stand adaptor as required at a small extra cost.

TABLE AND STAND MICROPHONE

MIC 22



This omni-directional Microphone is robust in construction, with a pleasing appearance. Vibration, shock or low frequency wind noise will not affect the performance. The low frequency cut-off is dependent on the load resistance. The cut-off is given by the quotation, $F = 80 \div R$, where $F =$ c.p.s., $R =$ megohms. An adaptor (floor mounting) is available at low extra cost.

SPECIFICATION

Output level = -50 db ref. 1 volt/dyne/cm².
Output impedance—equivalent to approximately 0.002 uF. (0.8 megohm at 100 cycles).
Frequency response—substantially flat from 40 to 6000 c.p.s.
Recommended load resistance—not less than 1 megohm, dependent on low frequency response.

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HIGH QUALITY MICROPHONE

Designed to meet even the most exacting requirements, this Microphone incorporates the world famous floating crystal sound cell construction. Its special characteristics are that its fine performance is not affected by vibration or shock. The fidelity is not impaired by low frequency wind noise.

SPECIFICATION

Recommended load resistance—not less than 1 megohm.
Output level -65 db ref. 1 volt/dyne/cm².
Frequency response—substantially flat from 30 c.p.s. to 10,000 c.p.s.
Directivity—non-directional.
Size—2½" spherical diameter.
Connector—Standard international 3-pin.

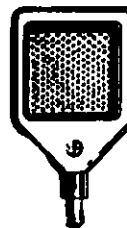
MIC 16



£24/19/6

LAPEL MICROPHONE

MIC 28



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Designed to give freedom of movement, this Microphone is small and non-directional. Housed in a soft moulded rubber case, which gives protection against shock, it is provided with a pin at the rear of the case for pinning to the lapel.

SPECIFICATION

Output level—approx. -55 db ref. 1 volt/dyne/cm².
Recommended load resistance—5 megohms.
Frequency response—level throughout the whole of the audible spectrum.
Capacity—0.0015 uF. at 1000 c.p.s.
Impedance—100,000 ohms at 1000 c.p.s.
Cord—6 ft. shielded cable.
Size—1-9/16" wide x 2¼" long x ½" thick.

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MIC 35



£2/15/-

substantially flat response from 50 to 5000 c.p.s.

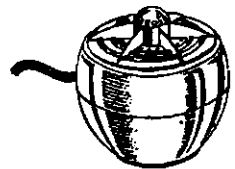
SPECIFICATION

Output level: -55 db ref. 1 volt/dyne/cm².
Cable—approx. 4 ft. of co-axial supplied.
Weight—6 ozs. unpacked, 7 ozs. packed.
Dimensions—microphone only 2¼" x 2¼" x ¼"

The MIC 35, undoubtedly the best value ever offered, is ideal for amateur transmitters, public address, etc. Housed in an attractive die-cast case, it features a high sensitivity and substantially flat characteristics. Provided with a built-in shunt resistance of 2 megohms, it will, when connected to the grid of the input valve, give a

HAND OR DESK MICROPHONE

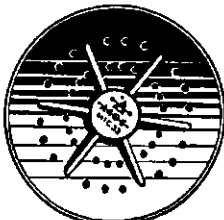
MIC 33



£6/18/6

This Microphone has been designed for the high quality public address and home recording field. High sensitivity and flat characteristics are obtained by a specially designed acoustic filter. Housed in an attractive plastic case with an unexcelled response for its size and price. Unaffected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s.

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(MIC 32 illustrated)

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MIC 32 insert, £2/15/6; all others, £1/19/6.

MICROPHONE INSERTS



(MIC 23 illustrated)

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very amusing as the going was pretty tough for the competitors who had to cope with a steep, slippery bank with the river at the bottom and a lot of very prickly box thorns. Some of the competitors took off their shoes and socks to attack it from the lower end by wading through the river. (Tis said some bald heads suffered from contact with the thorns—Ed.) Laurie used a long wire for the antenna which was fed up into gum trees overhead. The gang finished off the outing by having a picnic tea together. It was decided to bring afternoon tea only to the next hunt and for the next few months during the winter.

SOUTH WESTERN ZONE CONVENTION

The South Western Zone Convention was held at Geelong over the week-end 30th April-1st May at the Geelong Radio Club Rooms, and was attended by more than 50 Amateurs and their friends, including the visitors Max 3BQ, Col 3FO, Athol 3CP, Brian 5ZAB (from Narracorte, S.A.), and Eric ZL3EQ, who is on a hitch hike around Australia. Peter 3APK was allowed out of hospital for the occasion, but had to return by 5 p.m.

Many of the visitors had portable radio gear on their cars and they were given directions by Geelong home based Amateurs.

The usual dinner was followed by a discussion of problems and the election of office-bearers. The new officers are as follows: President, 3AKR; Vice-Presidents: 3IC and 3ALG; Secretary, 3AEH.

A 2 mx tx hunt was won by 3ZAZ and the 80 mx scramble was shared by 3APB and 3AWZ. A visit was made to the Ceres Lookout, where some very good contacts with Melbourne and Ballarat stations on 2 mx were made. Signals were 59. 3LN gave a demonstration on the various ways that elements for 144 Mc. gave better results and how length of same affected the whole set-up, which was very interesting.

Mr. C. Gibson, Secretary of the Victorian Division of the W.I.A., acquainted members with the latest activities at headquarters.

On Sunday additional members attended, and a transmitter hunt on 80 mx within five miles of the post office, set cars radiating in many directions. The hunt was won by 3AGD, closely followed by Max Stock.

Members assembled for dinner in the Eastern Park Gardens, and enjoyed the surroundings of this idyllic spot. Prizes were distributed at the close of the afternoon.

The good attendance at the Convention was the result of hard work by Bob 3IC, assisted by 3BU and 3AWZ. All who attended went away pleased with their two days at Geelong.

NORTH EASTERN ZONE

Murray 3HZ and Les 3ALE have been doing the local work for the North Eastern Zone Convention, and by the time these notes appear we will have decided they did a very good job. Hugh 3AHF has been away on a spot of leave, but was back dealing with the Convention arrangements at time of writing. Howard 3YV has been working on 80 mx and Bruce 3QC is thinking of getting his rig on the air. Jim 3ALK has been on 2 mx on occasions, and Jack 3AKC was experimenting with aerials. Henry 3HP is about and Des 3BP is active, but Ron 3AQG is difficult to track.

Ken 3KR has not actually been worked lately; Lex 3AIL is thought to be away, while nothing has been heard of Vic 3ABX in recent weeks. Frank 3ZU has been helping Col 3WQ align the xtal stages of Col's Super-Pro. Syd 3CI was constructing a diode noise generator for v.h.f. work. Alan 3UI has been prominent lately on the 2 mx band. Keith 3JC must be sticking to the 20 mx DX. Stan 3AGT must be still painting his house. George 3GD has been heard on 80 mx, but nothing from Tom 3IS, Des 3CO, Chas. 3ACW, or Johnny 3ACK.

Of our Associates, Jim Harrington has been out of reach, and Jim Muntz is rather geographically isolated from Amateur Radio. However, it is understood that Clarry is still about, and Vern was in on the last A.O.C.P. exams; we all certainly hope he had good luck. Two other enthusiasts, Les and John from Numurkah, went over to Tungamah one recent Sunday afternoon.

EASTERN ZONE

A new call is that of 3AJK, owned by Jack Sparks, who passed his A.O.C.P. recently. We hope this will inspire several other members to sit for the same exam, before long. Another new call is that of 3AAV, who hails from VK2. Joe 3TO was in on 144 Mc., but comes down to the lower frequencies when h.o.i. permits. Odele 3AHK claims to have worked a ZS on 7 Mc. and is awaiting the QSL.

Keith 3SS made a trip to Sydney recently and took along a portable rig and was heard here quite well. This same gentleman is in

charge of arrangements for the Zone Convention to be held in Maffra in June, which we hope will be attended by as many as possible. So do not forget it chaps. David 3DY is interested in YLs at present, so Amateur Radio is very quiet in that direction. 3TY gets on the air on 40 and 80 mx when not playing around with the local h.c. tx. We are all still waiting for Alan 3AFA to put some of his gear on the air. How about it OM?

3FK's AR88 is still in VK5 so he is not on the air as yet. Not much is heard of the boys in the Warragool area. Maybe they do all their work on 2 mx. Well that is about all for now, so do not forget the Queen's Birthday week-end at Maffra fellows.

CENTRAL WESTERN ZONE

This month your scribe is 3ATR who is at present perishing with a 38 degree temperature in the shack. Bit hard to take after the tropics. Certainly envy the VK9 boys this morning throwing back the mosquito netting and stepping out of bed in a respectable temperature. Had quite a good trip though, visiting 4TN and 4KS in Brisbane, 9DB in Moresby and most of the Rabaul boys, 9BS, 9BW and 9RC. I would like to take this opportunity of thanking all the boys who extended hospitality to us. We made our only QSO with home from Bob 9BS' shack where we were able to copy 3ATN's feeble signal for an hour or so.

On the home front, activity is again on the up and up with the coming of the long winter months. Herb 3NN has decided to erect a 5 over 5 for 2 mx after a wind storm brought down his old beam. Merv 3AFO is also getting a business on 2 mx again. 3ATR still waging a three months' long battle to get an 80w, 2 mx rig going works like a bomb when cold, but after an hour or so, grid drive gets lower and lower and lower till there isn't any.

GEELONG AMATEUR RADIO CLUB

The main activities over the past month have been concentrated on making the S.W. Zone Convention in this city a success. Most of the work was divided among members who worked diligently. Various members entertained club members over the last few weeks. Geoff Woods took all the club members on a pleasant cruise round the Bay on his yacht, made by himself. Bill 3AWZ entertained members in his shack. Bill 3BU gave an interesting talk on tape recorders, while Jim Barber discussed the integration of the Bush Fire Network, of which he is a member.

Everyone will be pleased to hear that 3AFK is convalescing nicely and that he has his tx with him in hospital and is getting a large number of contacts. Our two new members to Amateur ranks, Ron 3AYB and Jim 3ZBR, are keen to get on the air and we should hear their dulcet tones soon.

A new feature introduced into the club this year has been the Sunday trips around Geelong. Members operated on numerous bands and some good contacts were made. This new activity has allowed the XYLA and harmonics to relax while the Amateur fraternity dis-sitates experiments and eats.

MOORABBIN RADIO CLUB

A new innovation at the club is the introduction of various games after the meeting, in the form of table tennis, card hockey, quits, etc., and finishing up with a "cuppa". The annual Ladies' Night will be held on Friday, 3rd June, when all members' women folk will be the guests of the club. The evening will be a Film Night under the direction of Bob 3NZ.

The June meeting will be a Film Night, and Bob will screen some of the film he took whilst overseas. All welcome to come along. The club's tx is now operating OK. Don't forget the Club's Certificate. For this award, 14 members have to be contacted, and upon completion you will be made an Honorary Member of the Club.

The Club Rooms are open on the first Friday and the third Friday of each month. Club Rooms are located at the Moorabbin Town Hall, Nepean Highway, Moorabbin.

QUEENSLAND

The display at the Queensland Industries Fair was an unqualified success despite the adverse receiving conditions.

Many enquiries re the W.I.A. membership and classes were received and in regard to the classes, Council has decided that as the VK2 Division has asked permission to operate the VK4 territory, all enquiries have been forwarded to Ken 2AXZ owing to the fact that this Division is not at present conducting classes. Ken is conducting correspondence classes as advertised in "R. & H." and the

cost of this advertising is being borne by the VK2 Division.

The election of Council for 1955-56 resulted as follows: VKs 4ZM, 4PR, 4NC, 4JF, 4YA, 4TN, 4VJ, 4AW, 4AB, 4JO, 4DG. Ex-officio members are 4FP, 4CC, 4FT, 4NJ and Miss Claire O'Brien.

The following trophies have been donated by Trade Houses for use by the Division in various Contests, etc: Edgar V. Hudson, a Toaster; B. Martin, Mike and Stand; G. O. Wills, open order for £5; Trackson Bros., Electric Clock; Irvine Radio, Mike Inset; A. E. Harrold, Mike and Stand; Chandlers Pty. Ltd., two 809s; A.G.E., two 5R4Gys; Mr. Fitzgibbon, of Racecourse Road, Ascot, £1/-. Our thanks for the generosity of these Firms and Individuals.

The broadcasts from the Queensland Industries Fair went out well. Contacts have been made with Ws, ZLs, and all VK areas. An outstanding incident was the call for help from Reids Dome for an injured man. A medical man in the audience gave immediate advice while the Police Rescue Service was contacted to arrange transport for the injured man to Springsure Hospital. The operators at the show were 4CC and 4FP. Once again the value of Amateur Radio in an emergency is proved.

A considerable number of requests have been received for information regarding the Library Service. 5/- deposit is required against the non-return of the books. The following books are available: "QST," "CQ," and "Break-In." Outward postage is paid by the Division, inward by you. The Librarian is John 4FT, 61 Liverpool Road, Clayfield, Brisbane. QSL Service (inward) is handled by Jack 4JR, Vanda Street, Buranda. QSL Service (outward) is handled by Miss Claire O'Brien, 93 Jardine Street, Stafford.

TOWNSVILLE AMATEUR RADIO CLUB

A meeting of the above club, held at the home of 4BX, was reasonably attended seeing it was the Thursday night preceding the long Easter week-end. Quite a number of apologies were received from members, who took the advantage of the long break from work and visited Magnetic Island and the various fishing spots.

The business of the meeting was quickly disposed of and members settled down to hear a very lengthy and interesting lecture on Direct Measuring Equipment by Mr. Parker, who was the lecturer for the night. He held the rapt attention of the members and time passed all too quickly. Time did not allow a visit to Castle Hill to inspect the D.M.E. there, but it was decided that two months from then an opportunity would be given to inspect same. The emergency gear and dummy antenna will be used to visually demonstrate the gear and then all the questions would be answered with practical demonstration, together with the accompanying diagrams. Some were heard to say that the time could not pass quick enough. The reason for the delay was that the May meeting had been set aside for a film evening.

Very little activity heard locally on the band, no doubt due to the three long week-ends in quick succession.—4RW.

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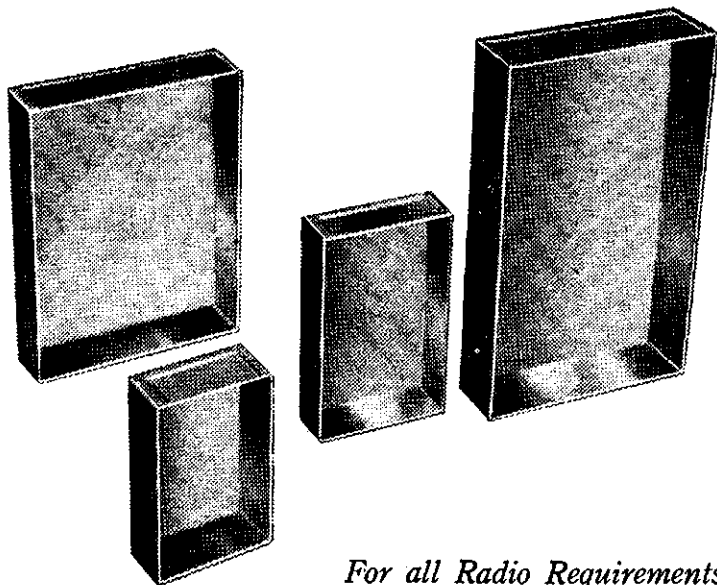
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SOUTH AUSTRALIA

Despite, and mainly because of, a certain VK5, I have returned to the fold and am in a position to state that the monthly general meeting of the VK5 Division, the Division that sets the pace, was held in the clubrooms to a somewhat smaller audience than usual. Just why the attendance should have been smaller is somewhat obscure, but as it was so close to the Easter break may have been one reason, although the apology received from Warwick 5PS for non-attendance may have been the real reason.

The meeting took the form of the well-known buy and sell night, and the reason for holding it so close to the last one of that nature was because the last three such nights had all been taken up with the disposal of deceased estates, with the consequent squeezing out of the members' gear. Council felt that it was only fair that an opportunity should be given to these members to dispose of their gear, and with this in view, the regular programme was deleted. The meeting opened at the usual hour of 8 p.m. and all the members stood silent for one minute in memory of Charlie Cheel (5CR) who had passed away a few days before.

Members were then asked to give some indication of the number of copies of the new call sign book that they would require, and then Jack 5JD read a copy of the proposed unified VK-ZL Contest rules which were unanimously voted as satisfactory. A letter of resignation from Charlie 5ON as operator of 5WI was read by the Chairman, and members, whilst regretting Charlie's inability to carry on, fully realised that responsibilities must come before hobbies. Gordon 5XU will carry on the job for the time being until Council fills the vacancy officially. A letter was received from Hughie 5BC, of Renmark, thanking all members for their enquiries and sympathy in his recent bad luck, (his house was gutted by fire recently and he lost everything including his well known w.t. gear) and assuring them that his chin was still well up and that he was trying to get back on the air, but naturally it would be a long job, because first things must come first.

The Chairman then gave some interesting information regarding the transmissions from 4WI from the Brisbane Exhibition. He then thanked Harry Gilliard for the enlargement of the group at the picnic that he had presented to the Division, and with the announcement of the new members, to wit, J. Campbell (Associate), H. Green (Associate), and L. McGrath (SZAG), the business side of the meeting came to an end, and the buy and sell commenced. Ross 5LW, who has been very QRL for some time now could not give Dougal 5BY a hand as auctioneer, and Norm Colman rose to the occasion and helped to make the night the success that it was. The meeting closed at 11.30 p.m. with Pansy 5PS carrying on a bitter argument with Jim Paris as to the reason for Jim over-bidding by a shilling for a vernier dial! You'll be sorry!

Joe 5JO sent me along a lot of information on the visits of several VK3s to VK5 over the Easter period, and I was all set to go to town with this hot news when I saw that I had been beaten to the punch by another Divisional Scribe. Thanks anyway, Joe, give him a piece of your mind the next time that you contact him.

Tom 5TD is now back under his own roof after a long time. I understand that the repairs to the house are a great success, although if anyone mentions the word earthquake within ten yards of him he turns a sickly-shade of green.

SOUTH EAST AREAS

The monthly meeting of the South East boys was held on the last Thursday as usual, and took the form of a get-together and a ragweek followed by supper. This type of meeting seems to be the most popular among the radio boys no matter where it may be and it goes without saying that a good time was had by all.

5CH, who has been active mostly on the v.h.f.s., broke his silence on Good Friday morning and was heard on 40 mx. Claude was using a re-built F56 with a temporary antenna, and strangely enough I heard him in QSO with a VK5, and also heard him passing on his 73 to me. I called you Claude, but nothing doing; I think that you went back to a VK3 mobile. I was portable at Oakbank and did not hold out much hope of you hearing me, but better luck next time. 5CJ has been active on 40 and 2 mx keeping his skeds, and from what I heard Col., it would appear that work is progressing on the new shack. Regards to the family. SZAG is building a new antenna 4-4-4-4, and will soon have it erected. Leo has been in contact with Bram 5ZAB by landline and it would appear that a direct QSO will be the result. 5ZAB came on the air during the Easter period and his first QSO with 3HG was quite a thrill. Since this period many VK3s have

VALE CHARLIE CHEEL (VK5CB)

Members of the VK5 Division, and Amateur circles generally, beard with feelings of deep regret of the passing of Charlie Cheel (VK5CR) last month. Licensed approximately in 1927, he was active on 300 metres when Amateurs entertained listeners on Sunday mornings with music, both canned and live. He was a Council member of the VK5 Division in the 1930s and was a Past President of the old Western Suburban Radio Club early in its history.

Up to the time of his death, Charlie was active on 40 and 6 mx, 144 and 288 Mo., and was one of the few "Old Timers" who kept up with the many trends of Amateur Radio in VK5. He was a cinematograph operator in the early days of the art, as far back as the days when limelight was the medium of light projection, and was both a professional and amateur photographer, especially in the field of color. Carrying his age remarkably well, few will be aware that he was 65 years at the time of his death.

Charlie was a perfect example of how to keep young through a hobby, and to his widow, two sons and two daughters, we extend our sincere sympathy, and regret sincerely the passing of our fellow member.

been contacted on 2 mx, and also has been heard in VK2. Equipment includes 522 and converter to "740" rx.

5XU at the time of writing is on holidays and caravanning in VK3 and if all is to be believed, Erg and Joyce are having a wonderful time. The family are still well again now. Nothing has been heard from the two Johns, although 5FD is a regular attendant at the monthly meetings and promises more interest in the active side of Amateur Radio in the near future. 5TW is keeping his schedules and is anxiously waiting for improvement in conditions so that he can work on his favourite band of 10 mx. 5MS has not been so active this month. Over Easter he altered his feedline to the well known beam from 300 ohm ribbon to co-ax cable and Gamma match, and on the Anzac week-end the conditions came good and a good time was had by all. Stuart worked several new countries, but is now at the state of finding them becoming scarcer and scarcer as his number increases.

Rumour has it that the three Chief Engineers from the three Commercial broadcasting stations in VK5, to wit, 5ad, 5ka and 5DN passed through Mount Gambier this month on their way to the I.R.E. Convention in VK3. Whilst I cannot believe that this is true, it is possible that the other two kidnapped my Chief and forced him to go along with them!!!

At the moment of writing Alan 5VO is in Victoria Ward at the Royal Adelaide Hospital recovering from a rather serious operation. He has been far from well, but if all is to be believed he is on the road to complete recovery. Glad to hear it Alan. Talking of illness, Charlie 3BH paid a visit to the city of culture just before Easter, and was so taken up with VK5 that he collapsed at the railway station from the shock of realising just what a fast moving and dashing State it really is. That's my story anyway, and I am sticking to it, Pincott or no Pincott. Sorry that I was leaving on my vacation the day that you rang me Charlie. I would have liked to have met you personally. Take care of yourself OM.

The VK5 v.h.f. notes are now being written by 5MT owing to the fact that 5XU is QRL with quite a lot of Institute matters. I think that this new scribe will do a good job, in fact I am well on his side, the reason being that when he wrote the first v.h.f. notes he addressed them to me and called me Dear Sir, which is a little more respectful than the last v.h.f. scribe used to address me. There should be more of it! The Short Wave Listeners' Group in VK5 is coming along nicely under the guidance of Jim Paris. I believe that a scribe will soon be appointed and then full details of their doings will be available for all to read, possibly this will mean another letter addressed to Dear Sir. Goody, goody!

NORTHERN AREAS

5AP has shifted his QTH to Port Pirie and has been heard putting out a real f.b. signal on 80 mx from there. Ron has had a very busy time getting the place ship-shape pending the arrival of the XYL. Thanks for the contact on 80 mx Ron. Hope to see you again soon. 5CO has at last put a signal on the air after an absence of over two years from the air. It has been a matter of building before DX for Brian, although plans for a new 100w. tx are well advanced and the 40 ft. tower is already erected for the 20 mx beam. 5EN has only recently taken on the status of a married man and

hopes to win the XYL over to Amateur Radio. Ern has made a few appearances on 80 mx, in fact I heard him in contact with Doc one night shortly before he was married. The mobile gear is out of action at present, but would assume that this state of affairs is purely temporary. Ex 5OD, who is now in Albany, Oregon, U.S.A., recently wrote a letter to Ern and in the letter were good wishes from a number of WTs of the Albany Radio Club. Bob said that he was enjoying his stay in W land although he is on the move all the time. He hopes to work into VK through WTSO shortly.

5WG has been in hospital recently and we all hope that Wally is now OK. Will be looking for your signal OM. 5BG is still putting out a good signal on 80 mx and Bob has collected some good picture slides of his wanderings around the North. Was pleased to contact you on 80 mx Bob, and tell you XYL that if I can get a tape recorder, I will be able to put your duo patter act on 80 mx on to tape, and make my fortune. No kidding! 5UW has been heard from Port Augusta on 80 mx, although Keith has had a little modulation trouble, but hopes to put his finger on the cause ere long.

5RI is active on 80 and 20 mx. Enjoyed our contact on 80 mx Bob, and I haven't let my typewriter run away with me, have I? Your warning to cancel your membership, if I did, put the wind up me! 5DA puts in a few appearances on 20 mx mainly, although I heard Roy in contact with 5AP and 5BG on 80 mx one night. "Roop" 7RM was asking about you the last time we contacted on 40 mx. 5KS made a visit to his old home town of Port Pirie for the Easter week-end and was heard from the shack of 5EN. Has the old place changed much Ron? 5VM is a very busy man these days. 5CV is often heard on 80 mx in the early part of the evenings, and that is a real good signal Col. Hope to contact you some evening, but we city slickers have to watch b.c.f.! 5WO is fairly active on 15, 20 and 80 mx and has just completed a three el. beam for 15 mx which he hopes to have erected in the next few weeks. Many thanks for the news Austin, and here's hoping that you can find time to send me some more. You see fellows, if I get a lead I can do the right thing by you all, but no news is bad news for me.

No news or signals from Lance 5XL, John 5FB, Cam 5XR, Mac 5CE, Jim 3JY, and Jack 5LH. What about it gang, come out, come out, wherever you are!

Rumour is rife in VK5 that a certain dark horse has made an unexpected entry into the recent Field Day Contest. I cannot give all the details of this dark horse, mainly because he is one of those modest retiring types and has to be forced to discuss any of his activities. This I can say, he is well built and muscular, has that type of Grecian beauty that is so unusual in the average male, is educated above the normal, and dresses in that carefree style which is associated with pots and pots of money. As I said before, I cannot tell you any more about him, he probably is covered in confusion as he reads these notes, but this I can say, he is known in some quarters as the "Shrinking Violet." Now I must not tell any more or you will all guess who it is. Incidentally, the Contest Committee have threatened to disqualify him on sight, the nasty things!

In closing these notes for this month, might I be permitted to draw your attention to the boloney that went on in last month's notes between Pro 5PS and Pincott. "Palsy-walsy Pincott" and "Pinny," etc. Personally they both give me a pain in the "Pinny." Whilst I was away last month I dashed off a technical article on the skin effect of the crossmodulated back wave with respect to the inverse ratio of the feedback along the transverse angle of elliptical gobbledeedook. I let the fellow in the next room to me read it and he thought it was jolly good. I will admit that he found it a bit difficult to read in one piece, mainly because his strait-jacket was a little tight. I did intend to send it to the magazine, but when I saw the name of the new Technical Editor on the front page of the magazine this month I gave the idea away. What would he know about my genius?

TASMANIA

After much pondering and calendar perusing I have at last worked out how I come to be in possession of notes on two general meetings, instead of the customary one. I am afraid that the annual general meeting and Dinner held in March completely took my attention off the fact that the April general meeting notes should also have been incorporated in that issue. Hence, reference to two meetings, rather than the alternative of a two-months' time lag.

The general meeting for April was held in the club rooms with a representative gathering

of members present, and presided over by Mr. F. J. Evans. After the business side of the meeting was over, Mr. L. Edwards (7LE) was persuaded to give a lecture on a subject dear to the hearts of quite a few these days, namely, 144 Mc. Direction Finding, and its associated equipment.

The May general meeting was presided over by Mr. J. Brown (7B7) in the absence of the President, and about 30 members were in attendance. Doctor Kelly (7LL) gave a most interesting lecture on "The effects of electricity on the Human Body," and was most suitably supported by a demonstration of the new method of artificial respiration by Mr. Bishop of the St. John Ambulance. Doctor Kelly also brought in a "small ship's" tx for inspection. The meeting also discussed and inaugurated a "Social Activities Fund" to cover prizes, and other field day expenses, etc. A "Fob-fumble" produced a most gratifying return.

Two metre activity with a field day accent seems to warrant a special mention this month. Associate John Grace has re-built his super-regen, incorporating all mod-cons., and when last seen was complaining that the darn thing would do everything but super-regen. 7FM has reached about Mark 15 on his rx, but perhaps my informant may have exaggerated a little there. This 2 mx bug is a wily creature, with far reaching nippers, and he soon found a part of the 7LS anatomy exposed. With the aid of visitors 7LE and 7ML, Len now has a 2 mx tx under way and (according to rumour) is looking for a convenient Hydro-pole to mount his antenna on. Max 7ML has crystal controlled 7193s under construction also, so soon I shall feel obliged to go out and give my 815 a kick in the anodes and see if I can't join in. Whilst writing the foregoing I have been wondering whether there is any connection between field days and the ancient Egyptian era. Doubtless you have all seen illustrations of frescos of that period, and have noted the characteristic pose that the figures often take—one arm straight out forward, forearm vertical and palm horizontal; the other arm held aft and more or less reversed. Well, imagine a portable beam held in one hand and the rx in the other, and see if it does not strike a very familiar note.

I was surprised to find out that Athol 7AJ was in hospital and had undergone an operation. Athol's XYL advised me that he was expected home on 7th May, so we all wish you a speedy recovery, Athol, and trust that ere this appears in print, you are well on the way to good health again.

Ted 7FJ is at present engaged in a tense struggle with a xtal noise generator and new rx, whilst 7RT has decided that his freq. meter is worth keeping after all. I quite agree with you, Ray—dial ball races should be seen and not heard. I don't know whether there is a good market for keys these days, but Doug, 7DW was definitely heard on phone. Of course there could be some other reason. Secretary Bill Tall is looking forward to long periods of touching-typing morse—did I hear you chuckle Bill? Ah well, I guess you know what's best.

Well that's about it for this month chaps. Before sealing the envelope I would like to make an urgent plea for news. Believe you me, it's not easy to get. I would be delighted to hear from any member on his activities and perhaps some of the more out-lying members could even be induced to drop me a line. Anyway, here's hoping.

NORTHERN ZONE

For our April meeting we made a change to Thursday nights and judging by the very good attendance, the change was worthwhile. 7GM showed his new 2 mx converter, whilst Percy Woodroffe displayed his 2 mx personal portable rx. 7LZ described some of his doings with the v.h.f. VK3 gang.

From Queenstown, where no one goes to bed before 5 a.m., 7BR has been having a holiday in Launceston. The resultant somnolent appearance of many in this zone was not due to staying up all hours listening for DX. Many of our old timers roared with glee when they saw the spread in the Melbourne "Herald" re ex-7CR. Yes, we enjoyed it Vi, hope Chas did.

Plenty of ZLs could be heard in mid April up to about 9 p.m. on 80 mx, but most of the other bands appeared to be very poor. 7LX has deserted the wholesale business and joined D.C.A. with 7PF. Max 7CA is still visiting far off places, coming home once in a while, so we haven't heard him on 40 mx lately. Believe 7BQ has a new 2 mx converter under way, whilst Henry Solomon is awaiting results of the exam. Ed Bonis still waiting for his gear from G-land, whilst Jim Wells is off to Brighton for his National Service. 7RB has been very quiet for some time, whilst it is reported that 7RK has almost forgotten his code. 7XW off to VK3, "the land of promise" in May for holidays.

PAPUA—NEW GUINEA

During one of the Sunday morning hook-ups, 9RM made the remark that he thought we may be able to do something to assist the younger generation in furthering and fostering their interest in Amateur Radio. He had in mind a Junior Club in Wau, where no facilities exist for helping these lads on their way to Hamdom, and eventual membership of the W.I.A. Within ten minutes of this casual remark to 9FN in Moresby, the response began in the shape of equipment, not from the Amateurs themselves, but from interested listeners who apparently make it a habit, of listening to these Sunday morning hook-ups. Frank's phone we understand was ringing for hours afterwards and it seems that enough equipment is now in the process of being packed and despatched to Wau to start the club in the right direction. It appears, too, that an anonymous donor also will stand the cost of air freighting the gear over to Wau, which is over the side of the Owen Stanley Ranges from Port Moresby.

Peter 9RM now has all the gear necessary to start the club, but no club, and no members. Quite a reversal of form, as usually it is the other way round. However, a meeting of parents was called whose youngsters are interested in radio and this, only a week from his original suggestion: Nine parents and their off-springs attended and so the club was formed. One of the parents kindly made available a suitable clubroom with fresh power, and since the inaugural meeting further donations of wooden forms, blackboards have been made. Peter 9RM and Ron 9RC will carry out the duties of instructors to these keen lads. No fewer than 18 members belong to the "Wau Amateur Radio Club," as it is now called.

Our worthy Secretary, Doug 9OQ, advises that the membership of the VK9 Division now stands at 31 full members and 7 associate members. Steadily growing. Seems that the VK9 boys are already planning their R.D. Contest programme. Doug 9DB has an all-band switched exciter driving an 813 final. Frank 9FN has push-button control of tx's on five of the most useful bands, with dual transmission and reception facilities. Doug 9OQ has a new 813 pi-coupled final coming up for c.w. operation. Associate member, Johnnie Toland, is building 100w. push-pull 807 rig in preparation for the time his A.O.C.P. is adorning the shack wall. Good luck Johnnie. Charles 9CR, transferred to Madang, expects to have new rig working soon. Don 9DS is on leave.

Trevor 9TC is QRL but hopes to put a rig on the air sometime this year. Roy 9AU very active on 7 and 14 Mc., and working his share of DX. Has just built a small portable rig, 10w., and three-valve rx of a type popular pre-war. Plans to use it for emergency rig and as a companion during his leave in October.

Conditions in Wewak consistently good on 14 Mc. for Europeans and Middle East. U.S.A. and Asia on 7 Mc., not to mention 3.5 Mc. where VK2 and ZLs have been coming through. 21 Mc. has been performing well to South Africa and Middle East, but Roy's rig doesn't work on this band as yet. Rectify that before the R.D. Contest Roy. Ron 9RG going on leave shortly. Hopes to bring back an all-band rig on his return from Australia.

Bill 9WP still uses 4w. and working DX too. Bob 9BS building a rotary beam for 14 and 21 Mc. John 9KT going on leave soon and expects to bring back a brand new rx. George 9GV and 9EB heard on a recent Sunday hook-up. Doug 9DT still working down Samarai way. Charles 9CS holidaying in Wau at the time of writing. Ron 9RC now has new xtal mike. Peter 9RM still very active in between times, when he hasn't got some of the youngsters learning their ABC of Amateur Radio. Bill 9EW still awaiting the arrival of a v.t.o. from Australia. Using a xtal for c.w. work mainly. Expects to be on phone again soon.

passing the morse test in their own time, they were admitted as Associate Members of the Western Australian Division of the W.I.A. Under the terms of our Constitution, they were unable to join as full members, nor were they eligible to stand for Council.

It is now learnt, that it is proposed by certain members of the W.I.A. that our Constitution be altered to enable these Associate Members to enjoy the privileges of full membership. Before members agree to this proposal, I feel the following facts should be presented to them:

1. The Limited Class of license does not permit operation in the 3.5, 7, 14, 21, 28 or 80 Mc. bands, and should this class of member become a member of the Council, he could not represent the members operating on these bands. He would not appreciate the problems and difficulties associated with these bands, for he is not qualified by the P.M.G. Department to operate there. Nor is it likely that his heart would be in any fight to deny these bands to commercial interests or strive for their retention by Amateurs for the same reason.

2. In the period since this type of license has been in operation, 11 such VK6 licenses have been issued by the P.M.G. Department. During the same period only five unrestricted licenses have been issued in Western Australia. It is obvious that before long the number of holders of restricted licenses will outnumber the holders of unrestricted licenses. In the event of the Constitution being altered to make them eligible for this office, it is only logical to assume that the majority of members of Council will consist of this class of licenses.

3. It may be argued that the holders of restricted licenses in many cases are better qualified technically than many holders of unrestricted licenses, that morse is becoming redundant, or that these members would be an asset to a Division. All this may be true, but until the day the P.M.G. Department permits the holders of these licenses to operate on any and every band at present permitted to us, they cannot be said to fully represent Amateur Radio.

The frightening prospect faces us, that it would be possible for Federal Executive itself to consist solely of restricted licensees, totally uninterested in frequencies below 144 Mc., and coldly indifferent to the fate of bands which are the mainstay of Amateur Radio.

—TOM MULDER, VK8MK.

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CORRESPONDENCE

The opinions expressed in these letters are the individual opinions of the writer, and do not necessarily coincide with those of the publishers.

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Editor "A.R." Dear Sir,
Some time ago, a new class of Amateur license was introduced by the P.M.G. Department, to cater for a large number of enthusiasts who were unable to pass the morse test of the A.O.C.P. Under the terms of this license, they were allotted special call signs and permitted to operate on frequencies in the 144 Mc. band and higher. To encourage these Amateurs to fully qualify for the A.O.C.P. by

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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, 7146 Kc. and 2000 hours EST 50 and 144 Mc. No frequency checks available from VK2WI. Intrastate working frequency, 7125 Kc.

VK3WI: Sundays, 1130 hours EST, simultaneously on 3573 and 7146 Kc., 81.016 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 3580 and 14342 Kc. 3580 Kc. channel is used from 0915 hours to 1015 hours each Sunday for the W.I.A. Country hook-up. No frequency checks available.

VK5WI: Sundays, 1000 hours SAST, on 7146 Kc. Frequency checks are given by VK5MD and VK5WI by arrangements on all bands to 50 Mc.

VK6WI: Sundays, 0930 hours WAST, on 7146 Kc. No frequency checks available.

VK7WI: Sundays, at 1000 hours EST, on 7146 Kc and 146.5 Mc. No frequency checks are available.

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EDITORIAL



AUSTRALIAN RADIO AMATEUR CALL BOOK

Last year the Wireless Institute of Australia completed two years of negotiations to obtain the exclusive rights to publish the list of licensed Australian transmitting Amateurs. The first edition was "on the street" in April, and how it was received by the Amateurs and Short Wave Listeners after so many years without one, is now history.

After a year in circulation the Institute can look back with pride at the success of its first attempt to publish a book of this nature. However, without the loyal support of Advertisers and the sales to Amateurs and Short Wave Listeners, the success of the publication could not have been achieved. To all those people, the Institute says "thank you!"

Although the publication sold well, it was surprising the quantity left over, considering that an up-to-date listing had not been printed for some years. A Commonwealth-wide check on sales figures indicates a fairly high percentage of non-purchasers amongst the DX men, who, according to their own line of thinking, are not so concerned with the names, call signs and addresses of Australian Amateurs as they are with those outside of Australia.

The Institute cannot force each and every member to purchase a copy of its Call Book, although it is not considered infradig to expect it just the same. The book is not dear ranged alongside most publications today. Every copy sold helps to keep the publication alive, up-to-date and with added attractive sections.

This month—July, 1955—the second edition is available carrying over one thousand changes; every change of address, and altered and new call signs made since the last publication are included.

In addition a new and comprehensive section is included listing all the International Awards for which the DX enthusiast can apply. It is believed that this is the most complete list published in any one journal before, and includes Awards for the Short Wave Listener as well.

This is the first addition to the Australian Radio Amateur Call Book and, it is hoped, the forerunner of a number of proposed sections that will be added annually as each new edition goes to press.

It is your book! Your support will maintain a valuable service not only to Australian Amateurs, but Amateurs all over the world.

FEDERAL EXECUTIVE.

THE CONTENTS

| | | | |
|--|----|--|----|
| Wideband Audio Phase Shift Networks—Part 2 | 2 | Ross A. Hull Memorial V.h.f. Contest 1954-55 Results | 12 |
| Modification of MN26 Receivers | 5 | DX Activity by VK3AHH | 15 |
| An Antenna for the S.W.L. | 6 | Prediction Chart for July, 1955 | 15 |
| An Accurate Electronic Timer | 7 | Fifty Megacycles and Above | 16 |
| Amateur Call Signs | 9 | S.W.L. Section | 17 |
| Book Review—Radio Amateur's Handbook | 9 | Federal, QSL, and Divisional Notes | 18 |
| Remembrance Day Contest, 1955 | 11 | Correspondence | 24 |

Wideband Audio Phase Shift Networks

PART TWO

BY N. SOUTHWELL,* VK2ZF

THOSE UNUSUAL VALUES

In searching for components of the correct values for the designs worked out (see Part One, previous issue), it is unlikely that you will be able to obtain them exactly. Choose either all your condensers (or all your resistors) as near as possible to the "target" values aimed for, as an error in one pair of components can be compensated for as follows:

In each network there are three pairs of components and the R/C products for these three pairs are the same, i.e. $R_1 C_1 = R_2 C_2 = R_3 C_3$.

Referring to the A network design, $R_1 = 15,000$ ohms
 $C_1 = 0.00714$ μ F.

The product of the two =

$$15,000 \times 0.00714 = 107.1$$

The product of $R_2 C_2$ will be the same, i.e. 107. Product of $R_3 C_3$ will differ if resistance voltage dividers are used on the outputs.

Incidentally, all calculations for this article were done on a slide rule and decimals are only taken to five places, so if there is a slight discrepancy between some of the sets of R/C values for each network don't worry, the error will not be worth considering.

Assume our nearest condenser, measured 0.007 μ F. To find the new target value for $R_1 =$

$$\frac{107.1}{0.007} = 15,300 \text{ ohms.}$$

We could, of course, fix the value of R_1 and determine a new value for C_1 —

$$\text{from } C_1 = \frac{107.1}{R_1}$$

All three pairs of components in each network can be treated similarly, but remember the R/C value of the B network pairs will be different to that of the A network.

Yet another method of checking the operation of pairs of components is available to us, once again by the use of the c.r.o. and the audio oscillator. The design frequency for the A network was 1,488 cycles, and that for the B network 329 cycles. At 1488 cycles the three pairs of components in network A will give us a 45° phase shift, likewise the pairs of components in network B will behave similarly at 329 cycles.

The test set-up needed for this will be the same as that used to align the type of network used in the G.E. "Ham News" S.s.b. Junior Transmitter and Signal Slicer Receiving Adaptor, which is the next unit to be discussed. The c.r.o. patterns observed will be the same, but the tests must be done at the design frequency of the A and B networks, not forgetting of course to check the c.r.o. to see if phase shift correction is required.

Fig. 8 shows the basic schematic of the phase shift unit popularised by the articles on s.s.b. equipment in G.E. "Ham News." This unit is one of the simplest and has a lower insertion

loss. It is rapidly gaining in popularity and is manufactured commercially in the U.S.A. by at least one firm and whilst this article was in course of preparation, the writer was informed that one Sydney manufacturer will, upon request, make a kit of precision condensers for this particular phase shift unit available at quite a reasonable figure. The differential phase shift between the outputs can be kept to within $\pm 1.3^\circ$ of 90° when properly adjusted, over a frequency range from 225 cycles to 2750 cycles. This means that over a frequency range of 12:1 the worst suppression obtainable is 39 db., and the average is around 45 db.

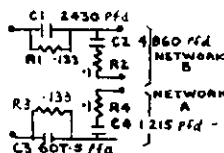


Fig. 8.—Phase Shift Unit popularised by G.E.

This unit is fed from an unbalanced push pull source as will be seen from Fig. 11. The arm of the pot. in the input circuit is grounded and from A to ground the voltage measured with a v.t.v.m. should be 28.57% of that measured from B to ground.

This design incidentally is worked out on the basis that the geometric mean frequency of the audio range is 800 cycles, as against the frequency of 700 cycles used for the design of the lattice networks just dealt with.

In connection with the components of this network, the values of the 0.1 meg. and 0.133 meg resistors should be as close as possible to the ratio of 3:4 to each other, this is more important than their actual value. In VK and ZL, precision 0.05 and 0.1 meg. resistors are available and the above values can be built up using these with little trouble. The 0.133 meg. being obtained by using 0.05 and 0.1 meg. connected in parallel, in series with another 0.1 meg. resistor.

The condensers can be built up by using a fixed condenser slightly less capacity than that specified, paralleled by a variable padder unit of suitable size, to enable the exact capacity required to be obtained during the alignment procedure.

For the easy going, there is an easy way out. Measure all the components on a bridge, obtain the correct values and assemble them. The result will be satisfactory, but the performance of such a network would not be as good as one which was individually aligned. This is brought about by the use of different reference standards for resistance and capacity, the alignment by means of a c.r.o. and oscillator overcomes this difficulty.

Amplitude balance between the two outputs in this design is satisfactorily obtained by varying the cathode bias, and thus the output, of one of the tubes following the phase shift unit, the correction usually required is small. This type of network must be fed directly to the grid of a tube as shown.

To align the networks, wire up the circuit shown in Fig. 10. The transformer used should be of good quality, the ones the writer has seen recommended for use with these networks in the U.S.A. are unobtainable in Australia, but no trouble was had with three transformers tested in conjunction with these units. Feed tone from the oscillator and adjust the arm of the pot. until equal voltages are obtained, between it and points A and B. Check these voltages by use of the c.r.o. With no signal applied to the horizontal input, connect the vertical input in turn between A and B to ground, and adjust the arm of the pot. for equal deflection of the trace in each position.

With the phase shift unit components mounted, but not wired, connect R_1 and C_1 in series. Then connect the free end of C_1 to A, and the free end of R_1 to B. With the c.r.o. connected as shown, it can be checked to see if any phase correction is required by connecting leads C and D temporarily to A, having the oscillator set to a frequency of 490 c.p.s. Then move lead D from A to the junction of C_1 and R_1 , adjust C_1 until a circular trace is obtained as described previously. Conduct this adjustment at a low level to avoid overload.

Having obtained the correct pattern, disconnect R_1 and C_1 and connect R_2 and C_2 up in series in their place. Move the oscillator frequency to 326.7 c.p.s., check the c.r.o. to see if phase correction is required, and repeat the line-up operation on this pair of components. These four components comprise one network.

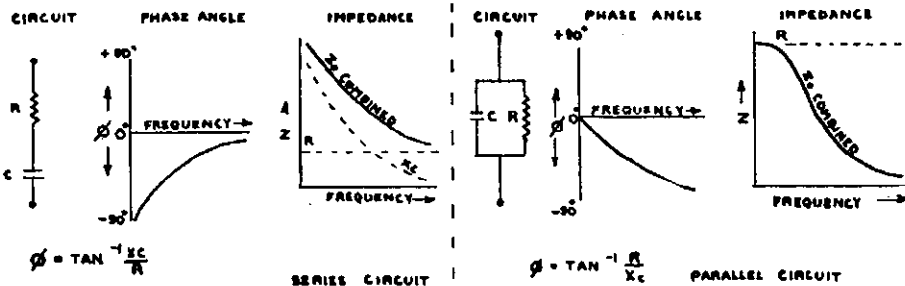


Fig. 9.—Characteristics of Series and Parallel R/C Circuits.

* 90 Dutton Street, Yagoona, N.S.W.

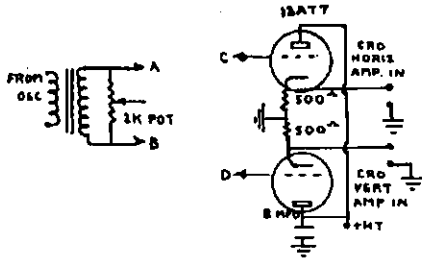


Fig. 10.—Test and Adjustment Circuit for Phase Shift Networks.
See text for connections to A, B, C, D.

The same procedure is followed when lining up the components of the second network. R3 and C3 are adjusted at a frequency of 1960 c.p.s. and R4 and C4 at 1307 c.p.s.

To check the complete phase shift unit after wiring is complete, use the set-up in Fig. 10, connecting leads A and B to the input and leads C and D to the two outputs. Refer to Fig. 11 for the network connections. Set the oscillator frequency to 1250 c.p.s. and adjust the arm of the pot. until a circular trace is obtained on the c.r.o. Swinging the oscillator frequency now from 200 c.p.s. at 3,000 c.p.s., the c.r.o. pattern should be perfectly circular at 440, 1225 and 2500 c.p.s., wobbling a little from side to side as intermediate frequencies are covered. For use in transmitters, the complete network set up is as shown in Fig. 11.

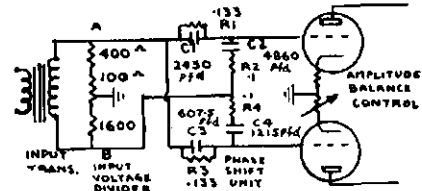


Fig. 11.—Complete Circuit of Phase Shift Unit in Fig. 8 connected for use in a Transmitter.

The tapped 100 ohm resistor shown in series with two other resistors across the secondary of the input transformer should be a potentiometer with the moving arm going to earth.

It will be noticed that the frequencies used in the alignment of this type of network are not round figures. Don't let this worry you if you are after accuracy, as there is a fairly simple way out of the difficulty. The ratio of these frequencies to each other is more important than their actual frequency. All frequencies used are sub-harmonics of 3920 c.p.s. If a stable simple oscillator of fixed frequency is built, whose output approximates the above figure, the main audio oscillator can be set to the frequencies required by feeding both oscillator outputs to the c.r.o. and using Lissajous figures to set the frequency of the variable oscillator. The procedure for obtaining these figures and their interpretation is simple and is covered in most Amateur Handbooks.

There is another type of unit which is similar as far as electrical circuitry is concerned to that of the G.E. unit shown in Fig. 8. However, the ratios that the various components bear to each other is different. The design equations differ from the lattice type network equations given earlier. However, from the design equation for one of these units covering

a frequency range 300-3000 cycles, the following ratios hold good. (For nomenclature refer to Fig. 8, but note, these ratios do not apply to the values given in Fig. 8 for the G.E. network.)

$$\frac{R1}{R2} = \frac{R3}{R4} = \frac{C2}{C1} = \frac{C4}{C3} = 1.58$$

$$\frac{1}{R2 \times C2} = \frac{1}{R1 \times C1} = 3,015$$

$$\frac{1}{R4 \times C4} = \frac{1}{R3 \times C3} = 11,780$$

To construct one of these units, pick a common value for R1 and R3, or C1 and C3 and calculate the rest of the values from the data above. The input voltage divider in this case had best be solely a pot. of 1,000 ohms or so. The input voltages required will be unbalanced, but a different ratio to those stated for the G.E. network. Adjust the divider, using the set-up in Fig. 10, with a completed unit and a frequency of 1,000 cycles/sec. Using equal gain in each oscilloscope channel, adjust the input pot. until the circular pattern is obtained on the screen. The frequencies for adjustment of the pairs of components will be those where the reactance of the condenser in each pair equals the resistance that goes with it, thus giving a 45° phase shift. The test set-up will be as in Fig. 10 and used as for the G.E. network.

Fro m experience gain since the article was first written has proved that the lattice networks are more tolerant regarding operating conditions than the G.E. type networks.

NETWORK CONSTRUCTION

The most popular form of construction appears to be that of mounting the components on a section of "fish back" strip, so that they are readily accessible during initial testing and adjustment. It will be found best to wire up the strip, also attach input, output and earth leads to it before mounting components, then mount the condensers and finally the resistors. This sequence of working gives less chance of the resistors becoming heated accidentally. If carbon resistors are used, they must at all costs be protected from heating.

This is best accomplished by leaving their pigtailed uncut and clamping each one between the jaws of a pair of bull-nose pliers as a thermal shunt, to keep heat away from the components whilst the soldering of that pigtail is taking place. Do not be in a hurry to remove the pliers, wait until the work has cooled. Carbon resistors, upon being heated, change their value, it usually increasing, by anything up to 20%, and this change is permanent—so be careful.

One watt and half watt rating resistors have been used with no trouble of any sort in a number of networks, some of which have been in use three years and have been stable in all respects. Quarter watt resistors have not been used as on occasions the writer has found these to "age" more than the larger rating types. Some brands of resistors have a better reputation for stability than others, these brands are generally known to Amateurs from hard experience. Naturally choose reputable makes of resistors for use in phase shift units.

Should you use wire wound precision resistors, then ignore remarks made concerning avoiding heating the resistors, however be sure your precision resistors are wire wound, there are carbon precision resistors available which have an accuracy of $\pm 1\%$.

Anyone nervous of heating the resistors can easily manufacture a mounting strip using small bolts and nuts, thus obviating the phase shift unit resistors in place.

Condensers used should be mica, or silver mica; postage stamp varieties are quite suitable. Do not use paper or metallized paper condensers. Ceramic dielectric condensers are also unsuitable. Variable condensers, where needed, can be of the mica compression type, used as padder condensers in B/C sets. It is better not to try and make the unit too compact; on more than one occasion the writer has seen whole units wrecked because they became over-heated during soldering, due to their small physical size.

The signal level at which the phase shift units operate is relatively high and no need has been found to shield any to date because of feed back troubles. From a long range point of view, it is best thought to mount the unit inside a case, and wire it to a tag strip mounted outside, or to terminals on the case. Then connections to the unit can be altered readily, with no fear of heating up the components.

GENERAL

The close tolerances called for when selecting component values for use in phase shift units has caused concern to nearly all who have thought of building them. If the components vary from the "target" values aimed at, the operating range of the network will shift up or down the audio range. If the components are larger than required the frequency will drop and vice-versa.

Intelligent use of an oscillator and a c.r.o. will eliminate any doubt in your mind as to just what is taking place in a phase shift unit. Remember that components can be split up into pairs and checked, as described previously, should you have reason to believe that something is wrong with the operating characteristics of any network. The information in this article should be sufficient to enable you to trouble-shoot any type of unit.

The differential phase shift of the two networks (i.e. the phase difference between their outputs) depends upon the accuracy of their components. The ratio of desired to undesired sideband depends also upon this accuracy, which is really how much the phase shift difference in the two network outputs depart from the 90° figure aimed at. The ratio of the two side bands can be obtained from the formula—

$$\frac{\text{undesired sideband}}{\text{desired sideband}} = \tan \left(\frac{D}{2} \right)$$

where D = the deviation in degrees from 90° between the two outputs.

At different frequencies in the operating range, the deviation will be different (remember how a perfect circle trace in the c.r.o. cannot be obtained over the whole operating range). This formula can be used to obtain the side-

(Continued on Page 12)

ZEPHYR MICROPHONES

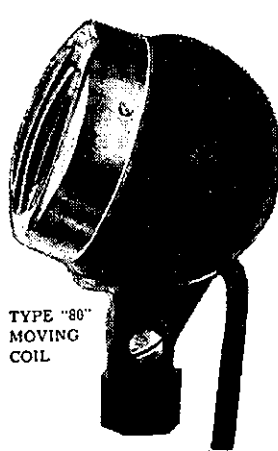


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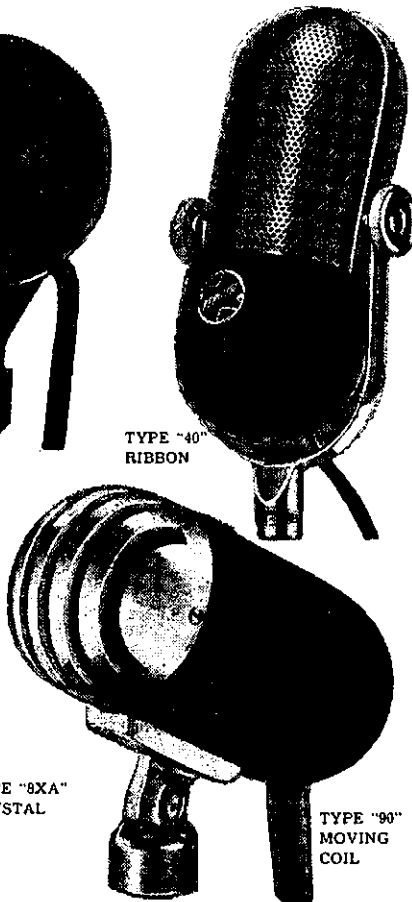
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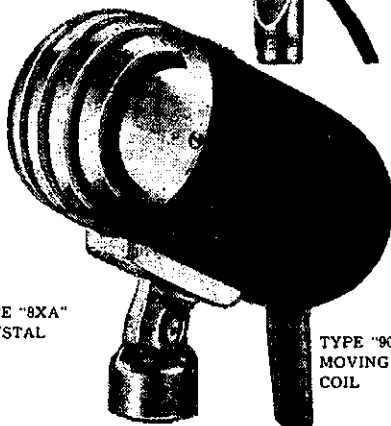
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Modification of MN26 Receivers

BY S. T. CLARK,* VK3ASC

THESE receivers were manufactured in quantity during the War by Bendix Radio for use in aircraft as part of MN31 Automatic Radio Compass equipment.

From time to time numbers of these receivers have been available inexpensively on the disposals market. They are of superlative construction and cover a useful frequency range.

The modifications to be detailed are as follows:

- (1) The receiver is for use as a car radio.
- (2) A.c. powered for use as a b.c. receiver in the shack, or as an i.f. channel following either a converter or a receiver such as the BC348.
- (3) Readers are referred to "QST" for December, 1952, "A Bargain Novice Station." This deals with the conversion of an MN26Y for use on 80 metres and the addition of a simple one-valve trans-

mitter operated from a built-in power supply.

Fig. 1 shows the circuit of an MN26 Receiver as modified for a.c. operation.

Since this receiver was originally designed for operation as part of an A.D.F. system, it contains components which are not necessary for Amateur use.

1.—As Car Radio

For use as car radio where installed genemotor is to be used or other suitable type (230v. 70 Ma. will be sufficient) substituted, in this case the components L7-1, L7-2, C9-1, C9-2, L8, C37-2, and C37-3, which comprise the i.v. hash and h.t. filters, should remain. Also the tuning motor will be found to operate satisfactorily on half its normal voltage. Since it is expected that owners will wish to mount the set in the boot of the car, where full remote operating facilities are desired, this too should remain. The set can then be operated from the MN28 Remote Control Unit which

should be mounted near the driving position.

The other alternative, one which will be more attractive to many, is to make the modifications along similar lines to those described in section 2, using the space so vacated to accommodate the few components which remain in the rear section of the chassis and mount the genemotor in some other convenient location.

If this is done the physical size of the receiver can be greatly reduced by such a re-arrangement and the cutting off of the rear portion of the chassis and the cutting down of the case to accommodate it.

The receiver can then be mounted in any convenient position in the front of the car. VK3AFA has modified a number of these receivers, mounting some of them beneath the front seats of certain cars.

2.—For Broadcast Reception

To modify the receiver for broadcast reception the following components are

*Flat 20, 100 Drummond Street, Carlton, Vic.

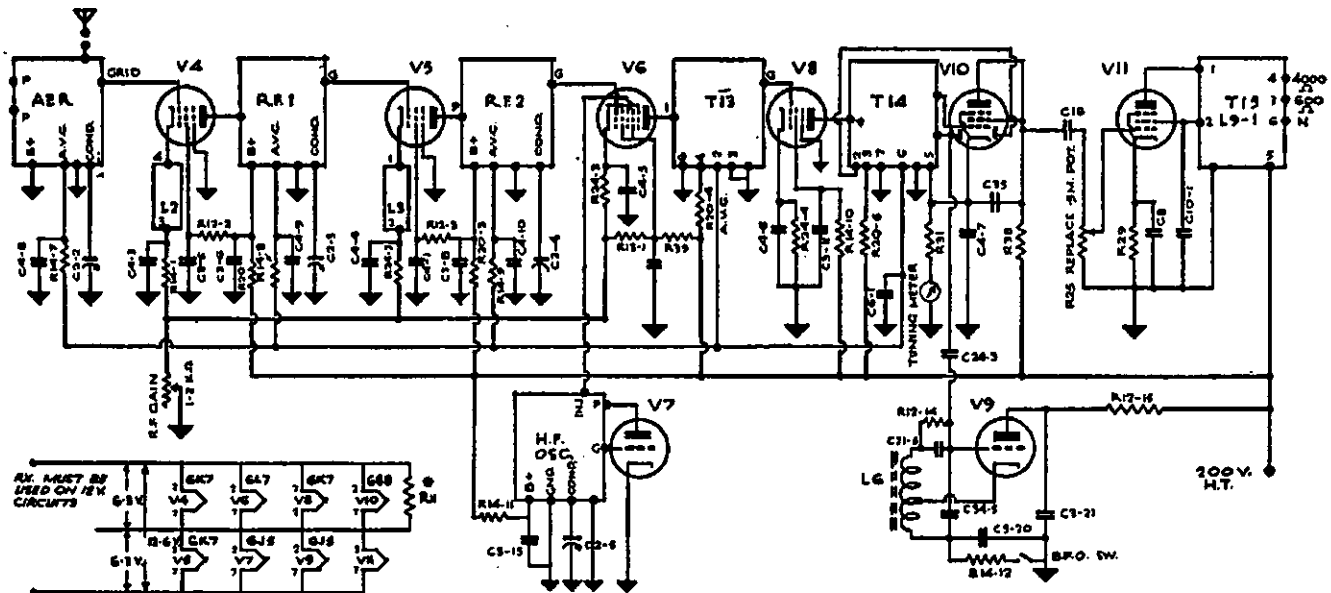


Fig. 1.—MN26 Receiver Circuit modified for a.c. operation.

*Rx—For 12v. operation as follows: 6F6 15.75 ohms, 6K6 63 ohms, 6V6 42 ohms, or number 46 pilot lamp.

- C1-1 to C1-15—6-25 pF. variable.
- C2-1 to C2-5 section variable, 12.5-400 pF.
- C3-1 to C3-21—0.05 uF. 400v. d.c.w. micamold.
- C4-1 to C4-11—0.05 uF. 200v. d.c.w. micamold.
- C5-1, C5-2—0.1 uF. 200v.
- C6-1, C6-2—0.02 uF. 200v.
- C7—0.5 uF. 400v., oil.
- C8—5 uF. 50v., oil.
- C9-1, C9-2—2 section, 0.5 uF. 100v. d.c.w.
- C10-1, C10-2—2 section, 6 uF. 400v. d.c.w.
- C11-1 to C11-3—35 pF. N680K 500v. d.c.w. ceram.
- C12-1, C12-2—50 pF. 500v. d.c.w. ceramic.
- C13—100 pF. 500v. ceramic.
- C14-1, C14-2—0.005 uF. 2% tol., 300v. d.c.w. mica.
- C16—0.001 uF. 500v. mica.
- C18—0.01 uF. 300v. mica.
- C17—25 pF. 500v. mica.
- C18-1, C18-2—250 pF. 5% tol., 500v. d.c.w. mica.
- C20-1, C20-2—10 pF. 500v. d.c.w. ceramic.
- C21-1 to C21-4—100 pF. 500v. mica.
- C22-1, C22-2—300 pF. 5% tol., 500v. d.c.w.
- C23-1 to C23-2—75 pF. 500v. d.c.w. mica.
- C24-1 to C24-3—5 pF. 500v. 10% tol., ceramic.

- C25—15 pF. mica.
- C28—25 pF. mica.
- C30—625 pF. 5% tolerance, mica.
- C31—1286 pF. 5% tolerance, mica.
- C32—2514 pF. 5% tolerance, mica.
- C34-1 to C34-5—500 pF. 2% tol., 500v. d.c. mica.
- C35—500 pF. 10% tolerance, mica.
- C37-1 to C37-3 section, 0.1 uF. 400v. d.c.
- C38—100 pF. 2% tolerance, mica.
- C38-1 to C38-3—0.1 uF. 10% tolerance, 400v.
- C40—V7 grid parallel padder.
- L6—40 ohms H.V. R.F.C.
- L9-1—Filter Choke, 6 H. 50 Ma., part of T15.
- L9-2—Filter Choke, 6 H. 50 Ma., part of T16.
- NE1, NE2—Overload Discharge Neon, 60v., 1/25 watt.
- R1—Loop gain control, 15,000 D taper pot.
- R7—300 ohms.
- R8-1 to R8-3—3 ohm, ½ watt, wirewound.
- R10-1, R10-2—40 ohms, ½ watt.
- R11-1, R11-2—20 ohms, ½ watt.
- R12-2 to R12-15—0.1 megohm, ½ watt.
- R13-1, R13-2—150,000 ohms, ½ watt.

- R14-1 to R14-13—50,000 ohms, ¼ watt, 10% tolerance, ceramic.
- R15-1, R15-2—2,000 10% tolerance, ¼ watt.
- R18—1 megohm, ¼ watt.
- R18-1, R18-2—1,000 ohms, ¼ watt ceramic.
- R20-2 to R20-5—5,000 ohms, ¼ watt.
- R21—200,000 10% tolerance.
- R22-1 to R22-5—½ megohm, ¼ watt.
- R23-1—10,000 ohms, ¼ watt.
- R24-1 to R24-5—800 ohms, ¼ watt.
- R27—100 ohms, ¼ watt.
- R28—1 megohm.
- R29—500 ohms, ¼ watt.
- R31—3,000 ohms, ¼ watt.
- R32—300,000 ohms, ¼ watt.
- R35-1—117, 50 and 67 ohms.
- R36—185, 120 and 75 ohms.
- R37-1, R37-2—75.6, 12.6 and 63 ohms.
- R38—25,000 ohms.
- R39—25,000 ohms.
- T15—Audio output, prim.: 645 ohms d.c., sec.: 310 ohms d.c.
- T16—Compass output, prim.: 2,400 ohms d.c., sec.: 14.5 ohms d.c.

removed from the chassis together with their associated wiring.

Loop tuning circuits, VI, R7, C4-1, C3-2, R14-13, R19-2, C3-1, R22-2, C4-2, Phaser, C39-1, R12-10, R12-11, C39-2, R21, R22-1, R22-2, R15-1, R15-2, C3-14, C3-13, R23, R14-6, C3-16, RE1, R18, C2-1, V2, R14-2, R27, R14-1, R12-12, R1, C4-11, R12-13, R36a and b, R34-1, L7-1, L7-2, C9-1, C9-2, C37-1, C37-2, C37-3, C10-2, L8, R12-9, RE2, V12, T16, C5-2, L9-2, R13-2, C39-3, R24-5, R19-1, R22-3, C5-1, R32 and C7.

If the filaments are wired as shown on the circuit, then the filament wiring can be conveniently connected for operation either from a 6.3v. or a 12.6v. source. I feel that it is now time to discuss the mechanical changes which are

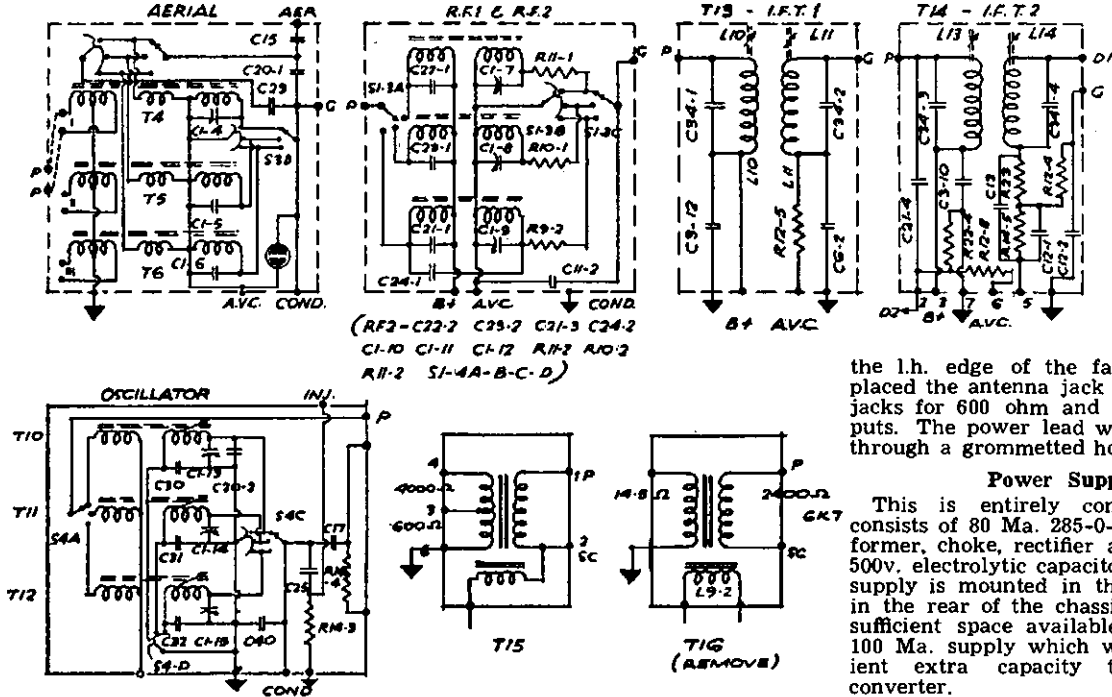
necessary. Since the receiver has a fine reduction gear drive built into it, the writer felt that it should be used. A false front, folded from 16 gauge aluminium sheet, was therefore made as one would a chassis, the lips being folded in at the bottom for half an inch. The whole thing was made the same size as the original front panel and 1 1/2" in depth.

This permitted a cutout to be made for a dial which was made from a sheet of perspex 1/8" in thickness to which was cemented a sheet of drawing paper (the solvent for perspex is chloroform). The dial is fixed to the shaft by a single 5/32" machine screw tapped axially into it after the assembly has been

turned so that the drive enters horizontally from the right hand side.

If there is no splined adaptor available for the drive one can easily be made by drilling a shaft extension so that it is a force fit onto the male spline or, if the hole in the extension is too large, the cupped end can be filled with molten solder and pushed on before the solder has time to harden. A cap threaded internally to screw on and hold this in place is a decided advantage, but not essential.

In my case I had a meter of the correct type and this was mounted in the top l.h. corner of the front panel. R.f. gain bottom l.h. corner and the a.f. gain shaft passed through the panel in a similar position on the front r.h.s. On



the l.h. edge of the false front were placed the antenna jack and two phone jacks for 600 ohm and 4,000 ohm outputs. The power lead was also entered through a grommetted hole in this edge.

Power Supply

This is entirely conventional and consists of 80 Ma. 285-0-285 volt transformer, choke, rectifier and two 16 uF. 500v. electrolytic capacitors. The power supply is mounted in the vacant space in the rear of the chassis, and there is sufficient space available to fit, say, a 100 Ma. supply which will give sufficient extra capacity to operate a converter.

AN ANTENNA FOR THE S.W.L.

BY NORMAN BURTON*

ONE of the hardest problems to solve for the s.w.l. is "what sort of antenna shall I erect?" Books on the matter offer an intriguing variety and a close study of them results merely in increasing the already existing confusion in one's mind. The fact that the s.w.l. is normally a multiband fan, adds yet more confusion to a problem already very murky. What, then, to erect?

The antenna offered has been in daily use since 1946 in two continents—Europe and Australia—and can fairly claim to be well tried. It is the acme of simplicity to erect and shows a gain over a 132-foot Marconi, or the length of wire so beloved of s.w.l.'s., of 4 to 6 S points on the S meter of the receiver and it is literally true that signals can be read on it that are completely inaudible on the other previously men-

tioned antennae. No attempt will be made to explain why or how it works; the writer did once try and work this out, but the effort gave him a violent headache and in consequence the attempt has not been repeated.

It is a version of the Windom and works excellently over the range 10 to 160 metres; it has not been tried on 5 metres, but did work well on 45 to 50 Mc., receiving the East Coast U.S. f.m. stations during 1947-8 most satisfactorily on a Hallicrafter S27 receiver.

To erect the antenna cut the top 33 feet long and tap on the feeder a third the distance from one end, i.e. at 11 feet from one end. The feeder is 41 feet 6 inches long and it is recommended that this length be adhered to, as it has been found to be an optimum length. If you must alter the feeder length, do so in lengths of 16 1/2 feet so as to maintain the feeder an odd number of quarter

waves long with respect to 10 metres, but if possible try and keep to the recommended dimensions.

It will not be found too hard to dispose neatly of 42 feet of feeder, it sounds a lot but once the antenna is in the air you will be surprised how the feeder seems to shorten. A few bends appear to have no effect on performance, but the writer arranges that the first eight or nine feet of feeder hang down at right angles to the antenna.

As regards best direction; in Europe, East and West was found to be best, and though the writer's runs East and West here, it might be better North and South. Of course if you can, put up one in each direction. The antenna has been used with a wide variety of receivers from a 0-V-1 to 19-tube supers and works well with all of them, so now just rush out and get it up, you won't be disappointed I assure you.

* Assoc. W.I.A., BERS11494; 143 The River Road, Revesby, N.S.W.

AN ACCURATE ELECTRONIC TIMER

BY R. BARNETT*

Although it may, at first glance, seem slightly out of place with the usual Amateur equipment, this gadget will do many useful jobs around the shack and is simple enough for beginners to tackle. For those photographic enthusiasts who do their own processing, it can be regarded as an essential piece of equipment for timing the enlarger, etc.

It will provide accurate delayed switching of any circuit of up to 200 watts capacity, the delay being variable from one half second to 85 seconds through five ranges. The original, built by the author, is accurate to plus or minus one twentieth of a second, and could probably be improved beyond this by the use of better quality components, as it was built "from the junk box."

Case and chassis details have been omitted as these are best made to suit odd parts you may have on hand. The original was built on a chassis 4" x 5" and housed in a case 4" x 5" x 3 1/2". The double pole double throw relay was taken from an I.F.F. unit, but could be any relay closing with a current flow of about 5 Ma. and with a resistance of from 5,000 to 10,000 ohms.

The power supply transformer is a standard type with a 6.3v. filament winding and a 150 volts aside 80 Ma. high tension secondary. The condenser shown in the circuit as 4 uF. 600v. should be of as high a voltage rating as possible; 600v. being considered the minimum, as any leakage will affect the accuracy of the timer. A paper block type is most suitable.

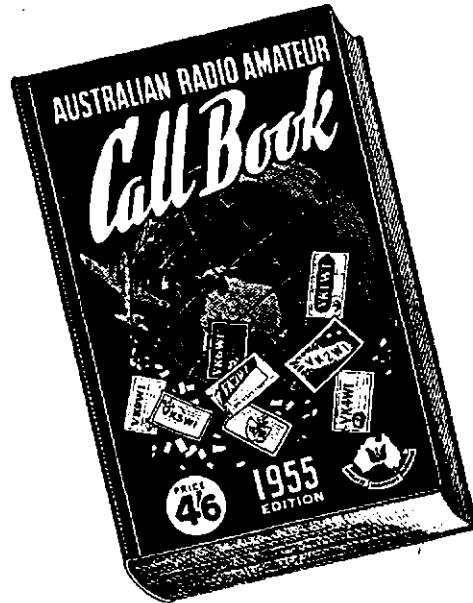
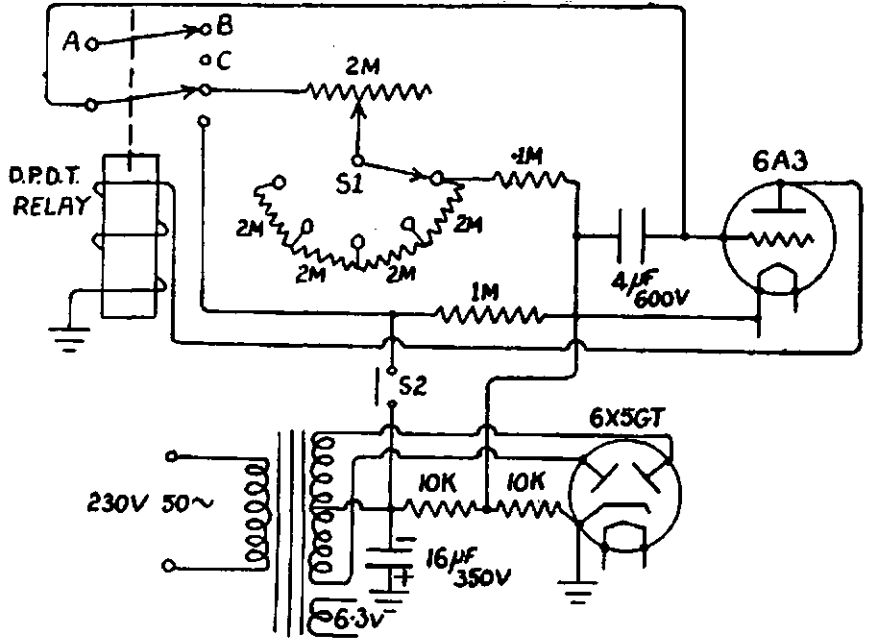
All resistors are 1 watt carbon, with the exception of the two 10,000 ohm voltage dividers. These are 5 watt wire wound.

The switch shown as S1 is an ordinary five position wafer type, while S2 is a push button type, normally open. Connections A, B and C may be connected as desired, depending on whether the circuit is to be normally open or closed. Connection through A and B will give a normally open circuit, closing during the timing period.

In use, the unit should be allowed to warm up for about 20 minutes. Approximately 30 seconds after switching on, the relay will close. The 2 meg. control is then set to the desired position and S2 momentarily closed, when the relay will open and remain so for the pre-set time.

To calibrate the timer, you will have to buy, beg, or borrow a self starting electric clock with a sweep second hand. This is connected in series with points A and B. By setting the 2 meg. control and S1 to various positions, the clock will indicate the corresponding time delay when S2 is closed. A suitable dial can be marked out accordingly, and the timer is ready to be put to work.

* VK3 Associate, Station Street, Cressy, Vic.



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AMATEUR CALL SIGNS

FOR MONTH OF APRIL, 1955

These amendments are included in the latest issue of the Australian Radio Amateur Call Book.

NEW CALL SIGNS

- VK— New South Wales**
 2GH—H. C. Harman, 36 Glenelg St., Raymond Terrace.
 2AMH—J. R. Howard, 18 Clarke St., Earlwood.
 2ATB—F. R. Gale, 6 Churchhill Cres., Cammeray, Sydney.
 2AZP—A. H. Parkes, 77 Fenwick St., Bankstown.
 2ZAZ—G. Harriman, Station; Farm 1850, Lake Wyangan, Griffith; Postal: P.O. Box 123VV, Griffith.
 2ZBN—A. D. Nutt, 12 Austral Bldgs., Anzac Parade, Maroubra.

Victoria

- 3AFU—J. K. Fullagar (Dr.), 34 Sackville St., Kew, E.A.
 3AHQ—H. Denver, 8 Reid St., Murrumbena.
 3APH—P. E. Playsted, Station; 112 Webster St., Ballarat; Postal: C/o. Police Barracks, Russell St., Melbourne.
 3AZR—P. C. Ryan, 10 Seymour Gr., Camberwell, E.A.
 3ZAV—P. D. Ward, "Barrabool House," High-iron, Geelong.
 3ZBJ—G. S. Jennings, Station; C/o. Mrs. M. Hamilton, 37 Byfield St., Reservoir; Postal: 38 Royal Pde., Parkville.

South Australia

- 5FC—J. W. Millard, C/o. District Council Office, Brandis St., Crystal Brook.
 5KD—D. F. Dawson, 8 Trinity Cres., Salisbury North, Adelaide.
 5LJ—J. R. Lewis, C/o. D.C.A. Mess, Box 370, Darwin, N.T.
 5ZAK—G. A. Tidy, 48 Balcombe Ave., Findon West.

Tasmania

- 7IB—I. G. Gillies, Post Office, Andover.
 7RG—R. Garth, C/o. Hydro Electric Commission, Trevallyn, Launceston.

Territories

- 1JW—J. L. Ward, Mawson, Antarctica.
 1VH—F. A. Van Hulszen, Mawson, Antarctica.
 8CK—M. H. Ewen, P.O. Box 56, Port Moresby.
 8CW—Wau Radio Club, Wau, N.G.
 8VP—E. Penikis, C/o. Australasian Petroleum Co. Pty. Ltd., Port Moresby.

CHANGES OF ADDRESS

- VK— New South Wales**
 2AI—D. E. Hatton, 16 Russell Street, Vaucluse.
 2IP—G. W. Thornton, 8 Fredben Ave., Cammeray, North Sydney.
 2QD—R. H. Dixon, Cr. Hague St. and Prune Lane, Lavington, via Albury.
 2RT—M. F. Tierney, 71 Telopia Ave., Caringbah.
 2UN—R. J. Scott, 45 Brae St., Inverell.
 2ZS—W. J. Smith, Alfred Oval, Lachlan St., Young.
 2ABU—A. M. Dan (Dr.), 50 Carr St., Coogee.
 2ADB—A. A. Cheetham, C/o. R. Bennett, 8 Belmore Rd., Penshurst.
 2AED—E. L. Colyer, Station; Vessel M.Y. "Tiki";
 2ALF—W. L. Harris, 58 Brook St., Coogee.
 2ANZ—J. P. Shonall, Flat 4, 180 Ocean St., Edgecliffe, Sydney.
 2AQE—L. K. Furner, Lake Albert Rd., Wagga.
 2ARA—W. N. Short, Station; Lot J1 Government Rd., Beacon Hill; Postal: 58 Auburn Rd., Auburn.
 2AVF—F. J. Fairleigh, Lot 35 Hutchins Ave., Dubbo.

Victoria

- 3EJ—W. J. Bennett, Albert Hill Rd., Lilydale.
 3FH—D. D. Paine, Thames St., Frankston.
 3OX—J. W. Watson, 3 Newbigln St., Burwood, E.IJ.
 3QY—C. W. Richardson, 1152 Nepean Highway, Cheltenham, S.22.
 3XG—B. F. D. Page, Ashby Way, Kilayth.
 3AAC—W. R. Clifton, Flat 4, "Luame," Hughendon Rd., East St. Kilda.
 3ABG—J. A. G. Miller, 334 Malvern Rd., Prahran.
 3AEW—O. G. G. Washfold, Cr. Jacka and Mc-Namara Sts., Ferny Creek.
 3AML—R. E. A. Grigson, 40 Bowman St., Mor-dallooc.
 3AST—S. J. Lloyd, "Tullamore," Humphries Rd., Frankston.

Queensland

- 4DI—L. W. Effeney, 232 Dawson Rd., Rock-hampton.
 4FH—J. F. Bull, Flat No. 4, Oella's Bldg., Vic-toria St., Mackay.
 4LT—A. E. Carter, 68 Dickensen St., Carina, Brisbane.
 4MC—A. D. Macpherson, 915 Gympie Rd., Chermiside, Brisbane.
 4WT—N. J. G. Walling, Macknade Mill, Ingham.
South Australia
 5AP—H. R. Hodgson, 17 Wood St., Solomon-town, Port Pirie.
 5MW—K. J. Atkins, Laffers Rd., Blackwood Park.
 5ST—R. T. Southwood, Station; Private Resi-dence 1/4 mile N.E. of O.T.C. Station (VID), Darwin, N.T.; Postal: C/o. P.O., Darwin, N.T.
 5UF—R. Fenwick, 7 Spark St., Port Augusta.
Western Australia
 6CK—C. M. Hayes, 378 Pearson St., Osborne Park, Perth.
 6KL—H. Leaver, Watheroo.
Tasmania
 7FM—T. F. Moore, 68 Lochner St., West Hobart.

CANCELLED CALL SIGNS

- VK—**
 2ABQ—K. G. Hawkins.
 2ADR—B. A. Smalley.
 2AVP—E. Penikis. Now VK0VP*.
 3SF—R. Garth. Now VK7RG*.
 3ADB—J. G. Du Faur.
 3AKG—K. G. Horne.
 3ASV—R. J. Stevens.
 4ED—K. A. Taylor.
 4FU—J. K. Fullagar (Dr.). Now VK3AFU*.
 4LJ—J. R. Lewis. Now VK5LJ*.
 4RG—G. E. Ryan.
 4TC—A. Tremayne.
 4ZAC—B. M. Byrne.
 5IB—I. G. Gillies. Now VK7IB*.
 5SK—D. S. Mackay.
 5AQ—L. Ayling.
 6CD—D. F. Dawson. Now VK5KD*.
 6SN—A. W. Sowden.
 6SP—W. J. Sperring.
 * See New Call Signs.

BOOK REVIEW

RADIO AMATEUR'S HANDBOOK

The 1955 edition of the Radio Amateur's Handbook has recently been released. The American Radio Relay League is proud to announce publication of this thirty-second edition of a book that is internationally recognised, universally consulted and truly the all-purpose volume of radio. Published continuously since 1926, the Handbook has become a leading reference work for hundreds of thousands of radio amateurs, experimenters, students and engineers.

The new Handbook features five basic chapters of basic radio theory, three chapters concerned with history and Amateur Radio operating practices, three of basic experimental data, and fifteen chapters of advanced theory together with practical constructional details, including transmitters, receivers, transmission lines, antennae, power supplies, single-sideband, frequency modulation, keying, amplitude modulation and microwave techniques.

Among the principal revisions of the new edition are those in the vacuum tube tables and base diagrams. Two full pages listing 67 new tube types have been added to the miniature-tube section alone. Further additions include 26 crystal diodes, 19 rectifiers, 17 transistors, and 32 other types. A complete listing of electrostatic cathode-ray tubes also forms a part of the tube tables.

The chapters concerned with very high frequencies have been extensively changed to improve clarity and to take advantage of techniques developed as a result of greater occupancy of this por-

tion of the radio spectrum. Notable in this respect especially is the chapter dealing with v.h.f. transmitters, which includes equipment using tubes developed in the past year.

The high frequency transmitter chapter also has been widely revised. Many new units are included, incorporating such features as continuous (multiband) tuning circuits and clamp-tube protective circuits.

The Handbook is revised and restyled in the light of current needs as a radio construction manual, reference work, and training text for class or home study. 768 pages, 6½" x 9½", including catalogue section and 11-page index. Over 1,300 illustrations (including 95 charts and tables, and 559 tube-base diagrams), and 85 basic formulae. Price in Australia is 44/3.



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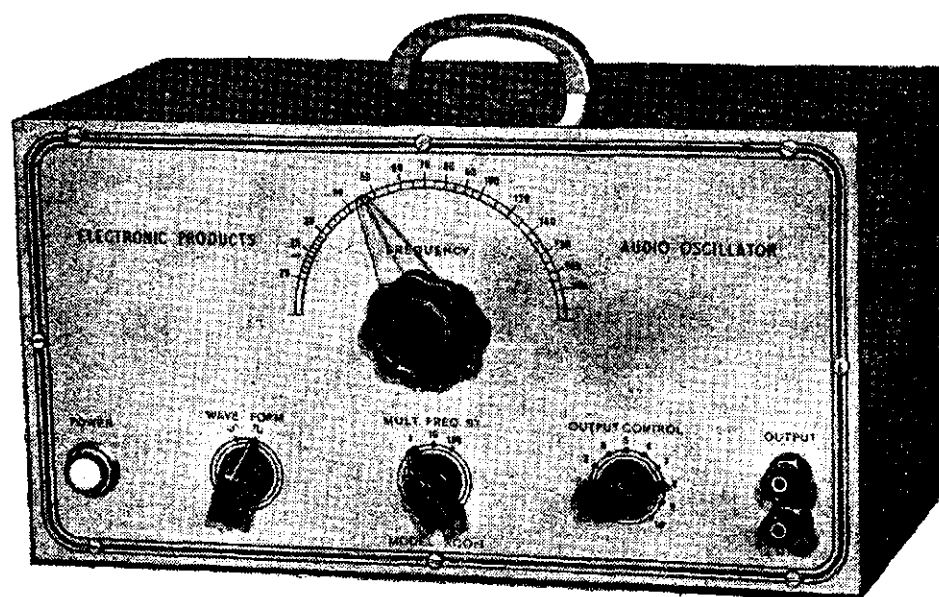
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REMEMBRANCE DAY CONTEST, 1955

The Remembrance Day Contest is an Australian annual contest 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 the 15th August in each year, the date on which the 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 State each year is also inscribed on the Trophy.

Again this year Amateurs in the VK1 call areas can participate in the Contest. Scoring for contacts with VK1 remain the same, namely, six points per contact per band for all States for contacts with VK1.

RULES

1. The Contest will commence at 1800 hours E.A.S.T. on 13th August and continue through until 1759 hours on 14th August.

2. The Contest is open to all Australian Amateurs, but only members of the W.I.A. are eligible for the awards.

3. The Contest is an open event—c.w., phone, or a combination of both may be used.

4. The Contest is an Interstate Contest, and Amateurs in each State will endeavour to contact Amateurs in all other States.

5. A station may be operated by more than one operator under the station call sign provided that operators, other than the station licensee, submit a separate log under his own call sign for contest purposes.

To implement this rule, the following procedure shall be adopted by all licensees other than owners of the station concerned.

(a) Licensees operating stations other than their own shall, for the purpose of these rules, be hereinafter referred to as "substitute operators."

(b) 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) C.W. Stations: Substitute operators will call "CQ R.D. de" followed by a group call sign comprising the call sign of the station they are operating, an oblique stroke, and their own call sign.

(d) Receiving Contestants: Contestants receiving signals from substitute operators will qualify for points by recording the call sign of the substitute operator only (i.e. the last call sign).

(e) Nothing in (a), (b), or (c) above will preclude the station licensee from participating in the contest himself, providing he submits a separate log under his own call sign.

6. All existing Amateur bands may be used, and all transmissions must conform with the Regulations as laid down in the P.M.G.'s. "Handbook for

the Guidance of Operators of Amateur Wireless Stations." Any breaches of these will lead to the disqualification of the operator concerned.

7. The arrangements of schedules for contacts on other bands will not be permitted.

8. All stations entering the Contest will call "CQ RD" if using c.w., and "CQ Remembrance Day" if using phone, subject to rules governing substitute operators under rule 5 (a), (b), and (c) above.

9. A State competing for the Trophy must submit a minimum of six (6) logs from financial members before becoming eligible for contesting the Trophy.

10. Only one contact per station per band is permitted.

11. Serial numbers to be exchanged during the Contest will be as follows:—

(a) For C.w. the first three figures will be the RST (telegraphy) report, followed by the serial number of the contact commencing with any number between 001 and 100 for the first contact and increasing in value by one (1) for each successive contact. If any contestant reaches 999 he will then commence 001 and continue 002, 003, 004, etc.

(b) For Phone the first two figures will be the RS (telephony) report, followed by the serial number of the contact commencing with any number between 001 and 100 for the first contact and increasing in value by one (1) for each successive contact. If any contestant reaches 999, he will then commence 001 and continue 002, 003, 004, etc.

A complete exchange of serial numbers must take place before any points may be claimed for the contact.

12. In order that an equitable distribution of points for States with a large number of contestants compared with a State with fewer contestants may be determined, a sliding scale of points has been allotted as shown in the scoring table appended.

13. In addition to the points in the scoring table that may be scored by a contestant, a bonus of 25 points may be added to the total score for each State worked on 50 Mc. or above.

14. The log submitted must show in the following order: Date, time, band, emission, call sign, RST/No. sent, RST/No. received, points claimed. No log will be accepted unless laid out in this order.

15. A statement signed by the operator must be attached at the conclusion of the log stating that the Regulations (Rule 6) and these Rules have been observed. Any logs departing from this form will automatically be disqualified.

16. All logs must be forwarded through the Contestant's Divisional Council (for membership checking) to reach the Federal Contest Committee, Box 1234K, G.P.O., Adelaide, on or before 10th September, 1955.

17. Attractive certificates will be awarded to the first, second and third highest in each State; there will be no

outright winner for Australia. Where a large number of logs are received from any one State, further certificates may be awarded at the discretion of the Contest Committee.

18. The State to which the Perpetual Trophy will be awarded shall be determined as follows:—

To the average of the top six (6) logs shall be added a bonus arrived at by multiplying this average by the ratio of valid logs submitted by that State to the total of Amateur Licensees in the Division at the time of the Contest.

Example: Total points equals—

$$\text{Aver. Score} \left\{ 1 \text{ plus } \frac{\text{No. of Logs}}{\text{No. of Licensees in Division}} \right\}$$

19. The logs which will be accepted for the multiplier under Rule 18 shall show at least five (5) contacts in the Contest.

20. The Trophy shall be forwarded to the winning State in its container and will be held by that State for a period of twelve (12) months when the winners for the succeeding year is determined.

21. The Federal Contest Committee shall be the sole adjudicators and their ruling will be binding in the case of any dispute.

SCORING TABLE

| | | To | | | | | | | |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | VK1 | VK2 | VK3 | VK4 | VK5 | VK6 | VK7 | VK9 |
| From | VK1 | - | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| | VK2 | 6 | - | 1 | 2 | 3 | 5 | 4 | 6 |
| | VK3 | 6 | 1 | - | 3 | 2 | 5 | 4 | 6 |
| | VK4 | 6 | 1 | 2 | - | 3 | 6 | 5 | 4 |
| | VK5 | 6 | 2 | 1 | 3 | - | 3 | 4 | 6 |
| | VK6 | 6 | 1 | 2 | 4 | 3 | - | 5 | 6 |
| | VK7 | 6 | 2 | 1 | 4 | 3 | 5 | - | 6 |
| | VK9 | 6 | 1 | 2 | 3 | 4 | 5 | 6 | - |

Note.—Read the table from left to right for points for the various States.

Examples:—

| | | | | |
|------------|---|-------------|-----|----------|
| VK2 scores | 1 | point for a | VK3 | contact. |
| 2 | " | " | VK4 | " |
| 3 | " | " | VK5 | " |
| VK6 scores | 1 | " | VK2 | " |
| 2 | " | " | VK3 | " |
| 4 | " | " | VK4 | " |

AUSTRALIAN V.H.F. RECORDS

| TWO-WAY WORK | | | | |
|--------------|-------------------|----------|-------------|---------|
| Band Mc. | Stations | Date | Miles Rec'd | World |
| 50 | VK5KL-W7ACS/KH6 | 26/8/47 | 5355 | 10500 |
| 144 | VK3GM/3-VK7LZ/PF | 9/3/52 | 317 | 1400 |
| 288 | VK3AFJ/3-VK3AAF/3 | 21/3/54 | 63.8 | — |
| 576 | VK3ANW-VK3AKE | 11/12/49 | 81.6 | — |
| 1215 | | | | 100 |
| 2300 | VK3ANW-VK3KA | 18/2/50 | 8.2 | 150 |
| 5650 | | | | — |
| 10000 | | | | 109 |
| 21000 | | | | 800 ft. |
| 30000 | | | | — |

It is in the interests of all v.h.f. enthusiasts to notify F.E. through Divisions if you can better these figures. Please give EXACT details of all locations when submitting your records.

ROSS A. HULL MEMORIAL V.H.F. CONTEST 1954-55 RESULTS

WINNER OF TROPHY VK4NG

R. Greenwood, Rockhampton.

AUSTRALIA

| New South Wales | | South Australia | |
|-----------------|------|-----------------|------|
| Points | | Points | |
| VK2ABC | 1397 | VK5MK | 1620 |
| 2HE | 795 | 5QR | 1205 |
| 2ATS | 616 | 5AX | 307 |
| 2ZX | 413 | 5ZL | 264 |
| Victoria | | West. Australia | |
| VK3ZL | 1484 | No Entries | |
| 3XK | 765 | Tasmania | |
| 3YS | 728 | VK7ZL | 820 |
| 3KC | 464 | 7BQ | 108 |
| Queensland | | | |
| VK4NG | 3490 | | |
| 4WD | 1650 | | |
| 4GG | 1242 | | |
| 4MT | 150 | | |

Check log from VK6BO.

OVERSEAS

| Points | | Points | |
|--------|------|-----------------|-----|
| ZL1BJ | 1554 | VR2CG/ ZL3LR | 984 |
| 2AGD | 952 | | |
| 2DS | 874 | | |
| 2ADO | 710 | | |
| 3RZ | 674 | | |

First contact to VK6—VR2CG—VK6HK.

COMMENTS ON V.H.F. CONTEST

Perusal of the call signs in the top logs in each State showed that approximately 50 stations in VK2, 30 in VK3, 15 in VK4, 15 in VK5 and 15 in VK6, VK7, and VK9 were active. An outstanding feature of the Contest was the participation of nearly 50 stations from all districts in New Zealand. VR2CG/ZL3LR is to be congratulated on his fine score and his success in the first VR2/VK6 contact. VK4NG certainly showed great perseverance.

It is a pity that many stations that participated did not submit logs. This meant that no complete checking could be undertaken by the committee. Fortunately the winning entry was so far ahead that the committee was able to feel satisfied with the checking that could be done.

The committee wish to thank those who took the trouble to send comments and suggestions. The rules, as they were framed by the committee and placed before the Divisions for ratification, were to implement the decisions made at the 1952 Convention. There it was agreed unanimously that all v.h.f. bands were to be included in this Contest. Thus it was felt that it would be futile to make it only an Interstate Contest and in order to introduce the idea slowly, rules for intra-State contacts and a longer operating time were introduced.

The folly of not allowing the Contest Committee to have the final say in drafting rules for these contests was well shown here when some Divisions vetoed the intra-State working and left its companion rule standing. Since there was insufficient time for any further correspondence on the matter, the rules,

a little "pied-piper-ish" to say the least, had to be published as they stood.

Comments received suggest that scoring be 5 points for the first contact with a maximum of 5 contacts; that the time be shortened; that there be a multiplier for low power mobile operation, etc. Decisions on the 1955-56 Contest, which will be the last using the 50-54 Mc. band, must be finalised this month and the committee will give many hours of serious consideration to them.

I would urge you all to respect their combined judgments, for theirs is a deeper insight to the problems involved as they are in closer touch with Federal Executive and its directive, Federal Council. The committee functioning as a unit can carry out the policy as laid down by the Divisions at the Convention to the betterment of the Institute as a whole.

The Ross Hull Memorial Contest is a fine Contest inspired by a great ideal, to perpetuate the memory of a man whose vision was self-less and inspired. Have faith in your committee for they are motivated by that same vision.

G. M. Bowen, VK5XU, Chairman,
Federal Contest Committee.

NATIONAL FIELD DAY

Logs have been received from the following: VK2WI; VKs 3ADW, 3AHH, 3APB, 3ARJ, 3GE, 3RN, 3SX, 3YS, 3IE, 3ZAM; VK5PS and one listener's log from N. G. Clarke.

AMATEUR BANDS AVAILABLE

| | |
|----------------|-------------------|
| *1.84—1.86 Mc. | ‡288—296 Mc. |
| 3.5—3.8 " | ‡576—585 " |
| 7—7.15 " | 1,215—1,300 " |
| 14—14.35 " | 2,300—2,450 " |
| 21—21.45 " | 5,650—5,850 " |
| 26.96—27.23 " | 10,000—10,500 " |
| 28—30 " | ‡21,000—22,000 " |
| 50—54 " | ‡30,000 Mc. and " |
| 144—148 " | Above. |

* Available for emergency network purposes only. Normal Amateur activities are not permitted in this band.
‡ Temporary allocations.

50 Mc. W.A.S.

| Call | Certificate Additional | |
|--------|------------------------|-----------|
| | Number | Countries |
| VK2WJ | 13 | 4 |
| VK3PG | 5 | 3 |
| VK2VW | 9 | 3 |
| VK4RY | 2 | 2 |
| VK4HR | 4 | 2 |
| VK5LC | 1 | 1 |
| VK6DW | 3 | 1 |
| VK3RR | 6 | 1 |
| VK3HT | 7 | 1 |
| VK2AEZ | 10 | 1 |
| VK3XA | 11 | 1 |
| VK3GM | 12 | 1 |
| VK3ACL | 14 | 1 |
| VK3ZD | 16 | 1 |
| VK2HO | 17 | 1 |
| VK2ABC | 8 | |
| VK3WH | 15 | |

PHASE SHIFT NETWORKS

(Continued from Page 3)

band suppression figure at any frequency if the differential phase shift is known.

Suppose the worst deviation is 2% from 90°, then—

$$\frac{\text{undesired sideband}}{\text{desired sideband}} = \tan\left(\frac{2^\circ}{2}\right) = 0.0174 \text{ and } 1 \div 0.0174 = 57 \text{ (approx.)}$$

This ratio is equal to 35 db., as this is the figure for the point of greatest deviation, the sideband suppression of the unit over the greater part of its range would be in excess of 40 db. (a voltage ratio of 100:1). A departure from 90° of 6° is required before the amplitude of the undesired sideband becomes 5% that of the desired one, a rejection of 26 db. This figure is similar to that obtained with some of the simplest crystal excitors, using two or three crystals, where one crystal is used to eliminate the whole of the undesired sideband. This figure of 26 db. would be about the worst one would want to use, as after all one S point = 6 db. and 26 db. of rejection is not a very good performance figure.

The fetish of accuracy of components, the writer thinks, has been a little overdone. It is all right in commercial practice, but in Amateur circles, where extensive test equipment is not available to check the performance of the complete s.s.b. transmitter or receiver, little will be gained by trying to achieve a ratio of more than 100:1 of suppression of the unwanted sideband (40 db.) The reason for this outlook is that nonlinearity of almost any type in the subsequent circuits (either r.f. or a.f.) following the phase shift unit, and differences in phase shift and distortion in the two individual audio channels, all tend to degrade the sideband suppression of the transmitter or receiving adaptor, and thus "put back" a certain amount of the suppressed sideband.

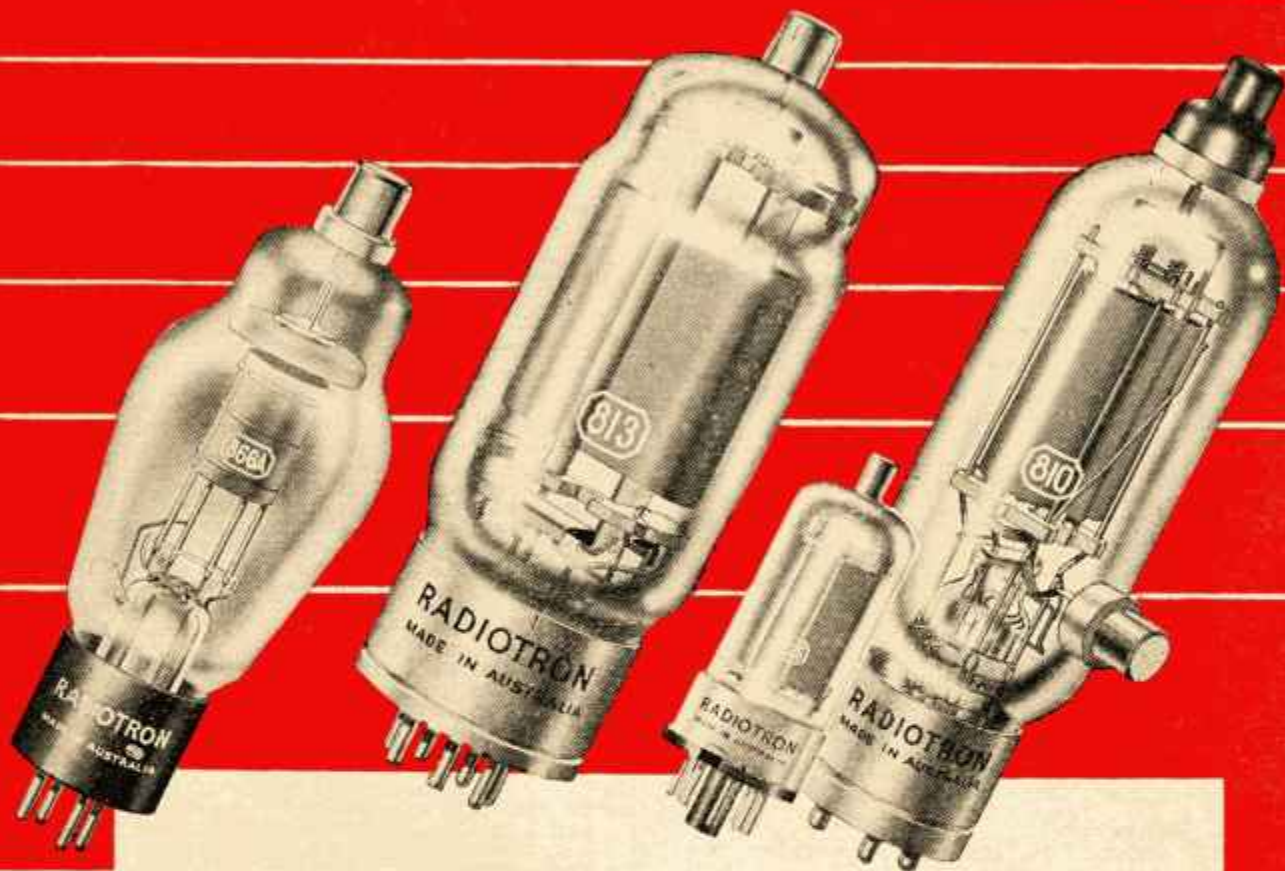
Fortunately, distortion (non-linearity) in cascaded circuits adds up algebraically not arithmetically. For example, if we have a signal with a distortion content of 1% and we fed it into equipment which has a distortion figure of 2%, the resulting distortion in the output signal is given by—

$$\text{distortion in output} = \sqrt[3]{1^2 + 2^2} = \sqrt[3]{5} = 2.24\%$$

The reason therefore of running all s.s.b. equipment at a power level where distortion is low will be apparent. It will well repay anyone building up a phase shift unit to spend a little time working out the formula for the lattice type networks for various values of R1, differing in steps of 1,000 ohms, and see how the component values change. Also in connection with the above, work out some examples of compensation for one component in a pair by varying the other, using the R/C figure method described. You will worry a good deal less about these units afterwards.

This article has been somewhat lengthy because the maths involved have been kept simple and a lot of it "written around," but it is hoped that audio phase shift networks will not be as big a mystery to readers as previously.

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DX ACTIVITY BY VK3AHH†

PROPAGATION REPORT

8.5 Mc.: Only openings reported were to North America between 0700z and 1100z.

7 Mc.: Here conditions continued to be fairly reliable. For Central and South America, breakthroughs occurred between 0700z and 1100z, and North America was well represented between 0500z and 1200z. Europe was workable, over the long path, around 0500-0800z, and, over the short path, around 1900-2200z. Times for the Pacific Islands and the Far East were as usual.

14 Mc.: Here openings to North America were reported to peak around 0400-0800z and 1000-1400z. Times for Europe were 0600-0900z (long path) and 1700-0000z (short path). Central and South America were workable between 0400 and 0800z, while the band opened for Africa during the same period. Long-path conditions to Central and South America existed around 2200-0000z.

21 Mc.: Conditions to North America were predominant, together with break-throughs from Central and South America 0000-0400z. Africa was represented between 0500 and 0800z. In addition, a European break-through occurred on 29/7/55. Long-path (1) conditions to North America (around 2200z) and Europe have also been reported.

27/28 Mc.: More or less regular openings existed to North America 0000-0300z.

NEWS AND NOTES

Lend a hand! Let's clean up 7 Mc.! Dxsers are officially requested to confirm the audibility of the following broadcast stations (from 3DU):

| | |
|--------------------------------|------------------------------------|
| Kc. | Kc. |
| 7000 BEC22 Taipei, Taiwan. | 7050 Cairo Radio, Radio Baghdad. |
| 7005 Radio Valladolid, Madrid. | 7065 VUD All India Radio, Delhi. |
| 7010 Radio Pakistan. | 7070 CR6RR, Radio Diamang, Angola. |
| 7018 Lisboa. | 7079 Radio Enghu. |
| 7022 Bangkok. | 7092 Radio Baghdad. |
| 7025 Radio Tahiti. | 7096.6 Radio Pakistan, Lisboa. |

Please let us have your report including the time at which you heard any of the above stations!

Danny Weil is cruising around this planet with his yacht "Yasme" (call sign GMTY) and anticipates landing on and operating from ZC2, ZC3, VU5, CR10, VQ9, VQ7, Commoro Island, VR6, ZM7, Phoenix and Nauru. He expects to reach VK towards the end of 1955 (from 3CX, 3DU).

The American 7 Mc. Novice Band has been extended. Its new limits are 7200 and 7150 Kc. (from 3AXX).

FM7WQ is active on 14 Mc. phone and says he has no key! (from 4RW.)

Two ends of wire will do, OM!

KG1AA keeps Greenland on the air (14 Mc. c.w.) (from 4RW and Dave Jenkin).

XZ2OM is on 14 Mc. c.w. and phone, daily 1230-1530z, and on 7 Mc. on Sundays 0200-0600, 1100-1230z (from 3YS).

VR6AC was on 14140 Kc. during May (from 5WO).

QTHs OF INTEREST

- KS4AW—J. Hancock, Swan Island, via Tampa, Florida, U.S.A.
- KG4AV—A. Babine, Box 55, Navy 115, F.P.O., New York, N.Y.
- LUIZT—P. A. Zetelo, Destacamento Naval, Bahia Luna, Islas Shetland del Sur, Antartica Argentina.
- MP4BAM—Umm Said, QFC Ltd., Qatar, Persian Gulf.

ACTIVITIES

3.5 Mc.: Kel 3AEP and 3AHH heard Ws.
7 Mc.: Laurie 2AMB worked CO8AQ*, C07PG*, KL7BBV*, KL7BBY*, VE3PK*, VE7s*, KZ5MN*, JA6CB*, G16TK* (0530z) and heard KP4QA, PJ2AE, ZC2PJ, FO8AL, VP2GY, DL6UR, Neil 8HG reports Ws* on phone. Noel

† Hans J. Albrecht, 10 Belgravia Ave., Box Hill North, E.12, Vic.

* Call signs and prefixes worked.
z—zero time—G.M.T.

3ZO follows with KP4QA*, YV1AD*, HRL1Z*, KH6*, VE8s, Eric BERS195 heard C07PG, KP4CC, KV4BK, VESPK, VE3AA, YV1AD. Jim Hunt heard the following on phone: HF3FL, DU7SV, JA2MR, JA7ET, JA1VT, JA1AGU, Dave Jenkin adds: VESPK.

14 Mc. c.w.—2AMB: HK0AI, YJ1DL, Jack SJA; KM6AX*, F. CN8EB, CN8AF, KL7ADR*, KL7USA*, KG4AB*, XE10E*, YU*, KB6*, Ken 3KR; KA2CR*, Y03RF* and HK0AI Bill 3TK; DL7s*, SAEP; ITI, Ced, 4CJ; a series of JAs*, KR6*, FK8AE*, KL7FAP*, Bob 4RW; YN0YN*, KZ5GH*, MP4BBL*, OH*, YU*, T2PZ*, VS8DB*, KS4AW*, HR1MC*, KC6AJ*, PJ2CE*, VP9BY*, KG4AB*, EA8BC*, KG1AA*, KL7PJ*, VP6KL*, FFC6G*, ZD3A*, KP4TT*, 4X4DC*, DJ*, John 5HI; F. HB8*, 1*, YU*, Ray 5RK; JAs*, Austin 5WO; EA3GF*, KP4AZ*, FA8DA*, HB9*, KZ5IF*, 5A3TZ*, SM*, G. BERS195; KJ6, KR6, LU6SA, ZS2BC, Dave Jenkin; KJ6, KA2SK, G. LU4GM, PA0, FK8AE, VESAW, KA8SD, KG1AA, KH6, YU, HB9, VK1EM (0720z), EA1CP, KL7AV, VS1BJ, DL, SM, ON4, G, CT1CB.

14 Mc. Phone—3JA: KL7PJ*, KL7AZN*, KA3EB*, KR6AF*, Stan 8TE; CT1OR*, ZM6 AT*, VE8SG*, KL7PAL*, 4RW; VS5CT*, KS4 AW*, YN0YN*, YN1RA*, ZM6AT*, ZK1BI*, YV5CE*, KG4AB*, FM7WQ*, 5HI; HK0AI*, KH6*, KG6*, TI7RAC*, ZS5JM*, 5WO; CO2BL*, CT1PK*, YV5EU*, HR3HH*, ZS5NZ*, ZS6QW*, ZS1CC*, ZS5DU*, ZS6BN*, ZS1JA*, F9AB* (1730z), VS1GT*, DL*, G*, Jim Hunt; VS2DQ, VS1FO, VS1FS, VS1EW, VR2AP, VS6BE, VS6 CW, VS6CL, AP2U, KR6USA, DU1AS, DU9AV, DU7SV, KG4AF, KG1AA, ZS6BW, ZS5CG, ZS6Q, HR3HH, 3AIT, YV5AB, YV5AG, V5EC, YV3BO, YV3CB, XE2JM, XE2HZ, XE2OD, XE2KW, XE1RE, YS1MS, HC1JF, HC2JW, HC1FG, KZ3WS, T13LA, CM8AA, HK4AM, VP7NK, H16EG, CS3AC, LU4DMG, C3WV, OD5AB, DL, VS5CT, YU, SM, ON4, PA0, OZ, HB9, IS1EHM, CT1OR, CT1PK, I, GC6FQ, OH, GM3DIE, GD2FRV, LA5YE, GW3FVI, 4X4DK, E12W, F, EA3CY, EA2CQ, G.

21 Mc.: Fred 2ID worked W* and reports that 2AFE heard Ws and Europeans over the long path (1). Len 3ALD mentions 4S7YL. Max 4HD worked Ws*, YN1AA*, VP6FR*, HC1FS*, HC1ES*, TG9AZ*. 5WO follows with ZS5NX*, ZS6TE*, ZS5CU*, ZS5NZ*, ZS6AND*, KA2GS*, Ws*. W0VCV/MM*. Jim Hunt heard CP5EK, TI2RC, HP3FL, C01AF, SV0WO, DJ1CZ, G3HCU, DL3RM, FR7ZA, ZD6RD, VQ4AQ, ZB2JK, ZS5HX, ZS5NZ, ZS6LF, ZS2FA, ZS6AND, VS8BE, VS6CL, VS6CZ, DU7SV, VS1FK, VS1BO, VS1FS, VS2DQ, VU2ET, 4S7YL, 4S7SR, KW6BB, KH6ARA, KH6IK, KH6AVH, KH6BCU, KA2GS, JA1ANG, KA8AB,

JA3AB, JA1CR, VK9BS, W10SF/MM, W30ZA/MM, W3HXE/MM, K2KZX/MM, W4VVU/MM, W6EYJ/MM, Ws.

27/28 Mc.: Max 4HD presents an excellent list on his activities on this band for the month. He worked K6JYA*, W6GAZ*, W6TZU*, W6IH*, W6LUZ*, W6UX*, W6VAD*, W5IPC*, W5JCW*, W5DSW*, W0AWI*, W6RJ*, W3QMG*, KH6OV*/W3*, W5YFV*, W4CGG*, W7PJ*, W6PCK*, W6NAT*, W5HHU*, W6DKO*, W5VY*, W5BL0*, W6UDJ*, W5NRE*, KH6ALM*, KH6BKS*, W6ZOX*. Further, Austin 5WO worked W5DSW* and in addition, Fred 2ID and Angus 3IY reported that there were a number of good openings from ZL to W land. This is the best 10 mx report for years. Thank you and please keep up the good work!

Rare QSLs were received by 2AMB; for 7 Mc. contacts: DU9WV, IT1ZWS, GM3CIX, CN8BJ, LU8YG, and for 14 Mc. contacts: LUBEN, ZS5FG, CT5AB, CN8MM, LU1SE, 4RW; KS4AW, BERS195; F18AP, HK3PC, KA0IJ, KG4AO, LU1CA, LU7ABL, ZESJO.

Thanks to the Northern and Southern California DX Clubs and VKs 2ID, 2AFE, 2AMB, 3CX, 3DU, 3HG, 3IY, 3JA, 3KR, 3TE, 3TX, 3YS, 3ZO, 3AEP, 3ALD, 3AXX, 4CJ, 4HD, 4RW, 5HI, 5RK, 5WO, and s.w.'s BERS195, Jim Hunt and Dave Jenkin.

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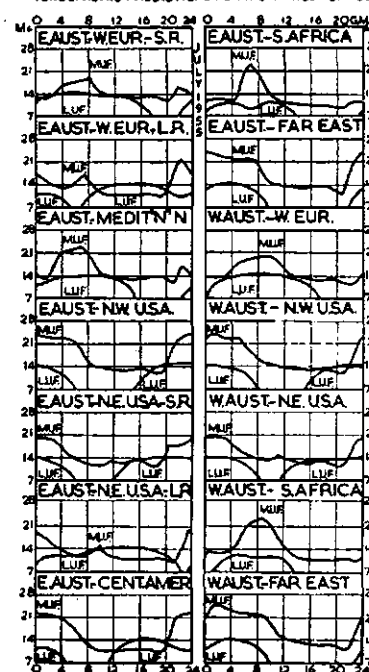
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PREDICTION CHART, JULY, 1955

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FIFTY MEGACYCLES AND ABOVE

FORBES TO MELBOURNE AND PORTARLINGTON

V.h.f. DX activity was very excellent during the whole of May, the news of the month being the break through of Hugo 2WH at Forbes to Melbourne and Portarlinton. On May 31 he made contact with Max 3BQ, this being Hugo's first Melbourne contact. Then later the same evening he made contact with Arch 3BW at Portarlinton, a distance of approximately 390 miles.

Earlier that evening, Arch had been receiving a Q5 S9 signal from 2WH while he was in contact with 2AJ0 at Coolamon. 2WH also worked 3CI at Nagambie on phone, 3YS and 3PG. The next evening he was again putting good signals into Melbourne and was worked by both 3BQ and 3CP on phone and c.w., also by 3CI. He was still audible in Melbourne at 10.30 p.m. while in contact with 2AJ0. 3ALY heard 2WH, and 3RK and 2WH both heard one another but no contact was made in either case.

An unusual set of conditions was noticed in the reception of 2WH's signals in that when his signal was very strong at Portarlinton, he was barely audible at 3BQ at Canterbury, and also when he was coming in well at Canterbury, his signal was well down at Portarlinton.

2WH uses a 32 el. phased array. His rx is a crystal controlled cascade converter, 6AK3, 6J6, with a 6AK3 triode mixer, 10 Mc. i.f. into a BC348 rx. The tx, 85 watts with a QV07/40 (the equivalent of an 829B) final amplifier. His frequency is 144.002 Mc.

VK3 TO ADELAIDE

3ATN at Birchchip made a contact with 5MT in Adelaide on 9th May. The contact started on phone and concluded on c.w. and make the first VK3 to Adelaide contact.

NEW SOUTH WALES

The May meeting of the V.h.f. Group was held at the usual meeting place, Leichart-Fetersham Technical College, 38 members attended, and although our original lecturer for the evening, Norm 2ALJ, was unable to attend owing to the fact that he was sick in bed with pneumonia. He arranged a substitute and Bob Hutchins, of the Technical College staff, gave a talk and demonstration on the c.r.o. as used in television. The members were shown how a "raster" was formed and how the number of lines were originated. Bob also showed the members how a square wave generator could be used for checking audio output against input in an amplifier. A vote of thanks was moved by 2AJA for a lecture that was enjoyed by all.

The newly formed b.c.i. and t.v.i. committee held its first meeting at the home of Dr. Bob Black, their chairman. The meeting explored the scope and activity it would encompass in its future. In his absence, Perce 2APQ was elected secretary.

Two Group events have taken place this month, the first being a 2-hour scramble held on Sunday, 15th May. The honours for the event went to Ray 2HO and Horrie 2HL, who shared first place with 22 pts. each, 2ANF was 2nd with 21 pts., and Cliff 2LG was 3rd with 20 pts. There were 25 stations active during the evening. The second event for the month was a night hidden tx hunt. 2ANF, mobilised by Ed Griffith, did the hiding. The spot chosen for this was one of the most difficult that the writer has ever searched for, coupled with the fact that it was a dark overcast night and with occasional showers. It was little less than an hour and a half, accompanied by 2NP, nonchalantly drove up to the tx, only 40 minutes after the hounds had been released. Horrie was the only one to successfully locate the tx, the balance being directed home and even then having some difficulty in finding the tx. Hot dogs were cooked and much rag was chewed, but all were unanimous in their wish for an early repeat of the evening.

The mid-winter contest has been arranged for the week-end 16th and 17th July (Sat. and Sun.) between the hours of 7 p.m. and 11 p.m. on both nights. Stations taking part are to contact as many other stations as possible and exchange the usual signal reports plus serial numbers. Logs are to be returned by 31st July to Contest Manager, 2ANF. It is to be expected that 2AJA will be an active member in this event as the rest of the v.h.f. gang have now got rid of their cement blocks and can talk to

Arthur in comfort. Yes! Arthur has gone xtal control. He was the last of the mod. osc. boys, and we believe that 2ABO has lived to see the day, but we are not sure of this, as Ted has not been seen at the v.h.f. meetings for some considerable time.

2ANU (Muswellbrook) and 2VU (Singleton) started a small DX season all on their own this month, and decided to get onto a few of the Sydney boys. Well, they sure did, contacts were made with 2HE, 2ANF, 2AJZ and I believe with some others. 2HE now has nightly skeds at 8.30 with the North, so another link has been forged. But! this was completely overshadowed by the events which took place on the evenings of 31st May and 2nd June. This was "Hugo does it again!" Yes, the inevitable Hugo Stitt 2WH worked from his home QTH at Forbes into Melbourne on 2 mx.

The June meeting of the Group was held on the 3rd and over 50 members attended to hear Norm Beard give his deferred lecture entitled "An Introduction to Television." Norm gave us a really fine lecture and all present gratified their wish to learn a little more about this vast subject. A vote of thanks was moved by 2QZ and as well as thanking Norm for a fine lecture the meeting expressed their pleasure that Norm was once more able to give cheek after his recent illness.

The next meeting of the Group will be held on 1st July.—2AJZ.

VICTORIA

Further contacts made during May were: 3YS worked 2AJ0 at Coolamon, this being the first Melbourne contact with Coolamon. 3BQ, 3YS and 3CI worked 2RS at Albury and 3BQ heard 2AJ0 at Coolamon. 3TI at Mildura was heard by 3ACE at Birchchip and also by 5LE at Galga. He had a cross-band contact with them both on 80 and 2 mx. He has modified his 522 and hopes to have his rx working soon. All the Western District stations were coming in at very good strengths during the month and the Melbourne stations had some very good contacts with them.

On May 29, 3ATN and 3ATR went portable to Mt. Arapiles in the Horsham district. They were approx. 1,000 ft. above the surrounding countryside and were using a high-power power supply, running 80w. fully modulated to an 829B. They operated on 2, 40 and 80 mx. So far the only reports received of their activities is that 3GM and 3BQ worked them.

There is always plenty of activities on 144 Mc. but not a great deal is heard of activity on 50, 288 and 576 Mc. It is requested of any Amateurs who work these bands, would they please send any information in regard to conditions, skeds, contacts made or heard, etc., to the publicity officer, 3LN, so that this information may be published in the Sunday Broadcast and the Magazine for the benefit of other Amateurs interested in these bands. 3AIL and 3ZBH will be operating on 288 Mc. at 1830 hours each evening and looking for contacts.

Eric 3ZL is active on both 2 and 6 mx. His 2 mx tx is an SCR522 driving a 25T triode amp. with 50w. input. The antenna is 5/5 parasitic beam, 45 ft. high. The rx is a trough line converter using 6AK3s and 11 Mc. output. His 6 mx tx is a three stage c.c. one with a 35T power amp., 50w. input. The antenna on 6 mx is a 4/4 parasitic beam with half wave spacing. The converter consists of a 6AK5 r.f., 6AU6 mixer, 6C4 high freq. osc. Syd 3CI uses a c.c. p.p. 6J6 rx. He is also experimenting with a cascade 6AK5, EC91 into a triode 6AK5 mixer. His tx has a QQE06/40 final amp. with an input of 70w. operating on 144.03 Mc. The aerial is a 32 el. phased array. 3HG at Coleraine has re-built the front end of his converter and is highly delighted with the signal to noise ratio. Congrats. to Neil 3ZAT on passing the c.w. test he is now 3ANK and is active from Montrose on 2 mx. He is using a TR1143. His antenna is a 3/3, 18 ft. high.

The country-city get-together of the V.h.f. Group, held in May, was a particular success when 45 members of the Group crowded the room. The visitors included 3ZL, 3AGV, 3AKR, 3GM, 3AMH, 3PO, 3ZBS, 3AGD, 3ZD, Ken Hore from Ballarat, two visitors from VK7 in 7WN and 7AI and Ian MacMillan from VK6. During the evening two presentations were made of v.h.f. "100" certificates to Col 3FO and Fred 3YS. 3ZD gave a report of activities in the Eastern Zone, which warrants putting the beam round in that direction frequently. The meeting ended with a supper and the night was so successful that many of the country fellows requested that it be made an annual one.

The May Fox Hunt was a victory to the hounds. The starters numbered 11 cars and one motor-bike. On this occasion the Fox 3LN took a run first towards the Western suburbs and

then down South, but everywhere he turned there was a hound tracking him down. However, all enjoyed the evening and 32 participated in the supper and get-together held at the home of Mr. and Mrs. McKellar and Ian 3ZAM and we wish to thank them for their friendly hospitality in making their home available to the Group to finish off the evening.

An omission in last month's notes was mention of the passing of the VK2 "message" by the VK3s in which one of our Z calls featured in the link. The "message" received from 2RS was passed to 3UI Tatura to 3ABE Macedon to 3ZAE and 3YS to 3WI, and was sent back again via 3YS and 3UI to 2RS.—3LN.

SOUTH AUSTRALIA

50 Mc.: The only stations on 50 Mc. last month were Col 5RO and 5MT. Ken 5KC is still building his new walkie-talkie. Our most ardent 6 mx man, Ron 5MK, has vacated the "power leak" and gone down to 14 Mc. Ron's excuse is that he is building a new rx.

144 Mc.: Again this band is the most populated of all the v.h.f. bands. The highlight of last month was that on the 9th your scribe was successful in "just" working Ray 3ATN. The contact was on c.w. and the signals were 549 at their peak. Signals were audible both ways for a period of two hours and they were still identifiable when both stations closed down.

The 2 mx gear at 5MT consists of tx: 100w. input to QQE06/40; 12 el. array; rx: push-pull 6J8 r.f. amp.; push-push 6J8 mixer combination which feeds into a Marconi B38 rx, i.f. range 2-4 Mc. Ray 3ATN has a 30 el. array and 70w. input to an 829B.

SRI at Mt. Bryan, approx. 100 miles north of Adelaide, is starting on 144 Mc. Bob's signals have been heard on two occasions by 5MT. Bob's tx is not running very efficiently as yet and consequently his signals in Adelaide are very weak. 5LE in Galga, however, receives a much better signal from Bob, about S4; this being due to the much better path between Mt. Bryan and Galga. Lew 5LE has been putting a consistent signal into Adelaide over the past month and on some nights the signal reaches S9 (fair dinkum!). Have heard a rumour that 5WC is starting up on 144 Mc., let's have some details chaps.

Stations active on 144 Mc. last month were 5RO, 5ZAW, 5ZAA, 5GL, 5HD, 5LE, 5AV and 5JN, the last two stations using mod. osc. I understand Bob SSR has completed a 144 Mc. converter, how about a tx now Bob?

288 Mc.: Bob 5SR and Bob 5PU active on this band. However activity at the present time is rather low. Dougal 5BY is a newcomer to this band. Has 5FS heard of this traitorous act? 576 Mc.: Col 5RO, Ian 5ZAA and 5MT have been experimenting with some simple gear for this band. Col 5RO can copy 5MT S9 plus; stations being only about 1.5 miles apart.—5MT.

WESTERN AUSTRALIA

Since the defeat of the motion to admit Limited licensees to full membership of the W.A. Division, a group of those interested and active on v.h.f., decided to form a v.h.f. club with full membership rights for the Z boys. Attendance at the two meetings held so far have been very good and the thanks of the members go to Ron 6FM and his wife and to Syd 6SJ and his wife for being our hosts.

At the April meeting, Ron 6FM gave a very interesting talk on meteorological conditions and v.h.f. propagation, mentioning the long distances 300-400 miles worked consistently by D.C.A. to the new Viscount at 25,000 ft. high.

At the May meeting, Denis 6AW spoke about the taking of field strength measurements of broadcast stations and described suitable equipment for the 144 Mc. band and the many advantages such a piece of test gear would have for us. Denis' talk was much appreciated and who knows someone may have already started to build one.

50 Mc.: Still very much deserted except for an occasional 6BO/6CC and 6HK/6SJ contact.

144 Mc.: 6ZAM has appeared at last with a nice signal from his 5763. Murray is using an 8 el. phased array with plans to extend this to 18 el. Syd 6SJ put up a very nice 50 ft. tower recently and with his 144 Mc. gear under construction, should emit a very nice signal. The tower looks strong enough to support a 40 mx beam Syd! Ralph 6ZAD lost his 4/4 in the recent gales, but is on the air again with a single 4 el. beam. 6ZAB has been transferred to Perth, so we've lost the possible 300 mile path to Kalgoorlie. Don 6DW has temporarily moved to Perth till about August so there are no checks in his direction.

Wally 6FG announces that he will be stoking up a QQE06/40 to the 100w. feeding into a 12 el. phased array. Converter is a 6J8/6J8 xtal controlled job. The path to Albany (250 miles) will be most interesting.

Still no sound of Dave 6ZAQ, but note his keen interest in the V.h.f. Club. 6ZAE and

6ZAK have returned from National Service. Lionel is re-building his modulator and Don busy shifting to his new QTH in Guildford. Len 6ZAT has been heard 5-6 in Fremantle by 6ZAA and another contact should be made here before long.

Jim 6RU and Dave 6WT made a re-appearance on the band and emit nice signals with their converted 1143s. They caused a minor "dogpile" of boys wanting new contacts! 6ZAA has built up a diode f.m. exciter and is busy on the discriminator as per 2ANF's articles in "A.R." Roger 6RK is re-building his f.m. and Ron 6FM is trying a phase modulator. Warren 6WJ is prepared to grind anyone's crystal down. Warren shifted down from 144.48 to 144.18 Mc. My word this baby powder stuff must be dynamite! Don 6HK has double converted a Command rx for use in his proposed 2 mx mobile station.

Don 6HK and Wally 6ZAA had an interesting excursion to the Mornington trig point. Conditions were poor and the only two-way contact was with 6BO with signals 449 both ways. 6ZAS/P was the only other station heard. Afterwards a large piece of ironstone was found attached to the permag speaker so perhaps this, plus the antenna being surrounded by trees were responsible for the poor signals. However, it was a most informative trip and showed that even 80 mx is not reliable 100 per cent. as signals on that band were little better than on 2 mx.

288 Mc.: 6ZAV and 6BO have been carrying on their tests. Frank 6CC was heard by Don 6ZAV over a distance of eight miles. The contact was multiband 144, 288 and 3.5 Mc. You'll have to build a 2 mx converter Frank! Stan 6ZAS is wiring up his mod. osc. and should be on the band very soon. Murray 6ZAM and Wally 6ZAA had a crossband QSO from Kaimunda with Rollo 6BO. Wally's new xtal converter, 6J6 mixer, was used and also a modified AR301. Tests from Bassendean to Fremantle over a difficult 15-mile path were unsuccessful. Looks like an r.f. stage is needed Wal! 6ZAV is trying out a double mixer in an ASB4 rx. injecting 136 Mc. into both mixers. Tuning from 136 to 140 Mc. he covers the eight megacycles of the 288 Mc. band and the lower frequency oscillator is more stable! Should work very well Don. Cecil 6ZAZ is talking about putting on a pair of 7183s.

576 Mc. and above: Nil at the moment. How about it boys?—6HK.

S.W.L. SECTION*

S.W.L.'s. TO BE ISSUED WITH OFFICIAL CALL SIGNS

From the 1st June, 1955, Associate members of the Victorian Division W.I.A. and members of the S.W.L. Group will be issued with official L numbers. This means that s.w.l.'s. can have printed on their cards and report forms official station numbers.

If you are a member of the Victorian Division and wish to obtain an official s.w.l. L number, write to the Secretary, W.I.A. Victorian Division, 191 Queen Street, Melbourne.

Official report forms may be obtained from the above address at a cost of 2/6 per 50 sheets.

S.W.L. CONTEST

Well last month saw the end of the first official S.w.l. Contest and by the time this issue goes to press, the judges will be examining all entrants' cards.

Results will be published in next month's "Amateur Radio," and broadcast through 3WI on 7146 Kc. and 3573 Kc. at 1130 hours E.S.T. on Sunday, 31st July, 1955. So chaps, do not forget, have those receivers tuned to those frequencies on that morning. Winners will be notified by mail.

VICTORIAN S.W.L. GROUP

This Group met in the Club Rooms, 191 Queen Street, on Tuesday, 31st May, at 2015 hours. We had a large number present and had a very good rag-chew on coming attractions of the year. Meeting closed at 2230 hours E.S.T.

SOUTH AUSTRALIAN S.W.L. GROUP

At the time of writing, no notes had been received from this Group for the month of May. I was informed that VK5 Jim Paris was visiting VK3 early in June and then going on to VK2. Jim is on holidays, so good luck Jim and have a good time.

* Compiled by John Wilson, 37 Rayment Street, Alphington, Vic.

S.W.L. HINTS AND KINKS

To keep this column going, we wish to hear from any s.w.l. who has any ideas to exchange in this column. Just send all ideas to "Hints and Kinks S.W.L. Section," 37 Rayment Street, Alphington, N.20, Vic.

ABOUT THE BANDS

Over the past month the bands have been very active, both week-ends and evening. 20 mx has proved very crowded with both Europeans and Ws, while 40 mx during evenings up to 1700-200 has shown W0-9 at S7-9 signals.

Those heard have been—144 Mc.: From Michael Ide: 3FO, 3YS, 3EN, 3BH, 3BQ, 3RK, 3ZAM, 3ZAY, 3ZAA. He has received QSLs from 3FO, 3BH, 3YS, 3ZAY, and 3ZAM.

21 Mc.: From Rod de Balfour, of VK7—ZL2EE and WOKOK at S5-6 plus VK2 and VK4 and weak Ws.

14 Mc.: Michael Ide—CO1, CO2, CM9 CT1, DL2, DL4, DU6, HP3, FA8, I1Z, JA6, KA0, 2, 3, 7, KH6, KG4, KG6, KJ6, KS4, KL7, KR6, KW6, KX6, TG9, TI2, VE3, VE7, ET2, VR2, 3, YV1, YV5, XE1, XE2, ZM6, VK9, VS1, VS6, 4X4, CT2, JA1, YN1 and all W call areas. From Albert Angus—K2, 3, 4, 5, 6, ZLIC4, CO2BC.

Gordon Hepburn, of VK2, heard 158 stations on 20 mx during the last month. Receiver is a Kreisler d.w. table model on inside antenna. Good work, Gordon, and from my location—W1-0, KA, KG, KL7, 4X4, 4S7, HP3, KG4, ZL1-3, 7 Mc.: My location—VK2-6, W0-9.

Thanks to Michael Ide, Gordon Hepburn, Rod de Balfour, and Albert Angus for your reports.

Broadcast Band DX: Heard on approx. 1420 Kc. Station KHON (or M) at S3, R2. This station was heard at 0200 E.S.T. and should be a good one during the Winter months. They put on a news service at 0200 till 0205, then hit tunes until 0230 E.S.T.

Also on 930 Kc. Voice of America in the Philippines at S9 signal. Real arm-chair copy.

Broadcast Short Wave: AFRS on 31 mx band S9 signal with baseball round-ups at 2100 E.S.T. Radio Australia at 0000 E.S.T. to Asia on Saturday on 40 mx band; excellent signal. Canada to Eastern Australia daily on CKLO 9.63 Mc. (31.15 mx) and CKUA 5.97 Mc. (50.25 mx) at S7-9 signal. Listeners' Corner is heard on the Saturday transmission. Air times 1845-1915 E.S.T. daily.

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FEDERAL

THE QUEEN HONOURS AMATEUR

A Birthday Honour has been conferred by Her Majesty the Queen on a well known member of the Wireless Institute. The popular President of VK2, Mr. Jim Corbin, VK2YC, has received the M.B.E. Award in recognition of his outstanding assistance in Amateur Radio, particularly in the recent New South Wales floods.

Members throughout Australia will join with Federal Executive in offering congratulations. Well done! Jim, and thanks for your fine work. The honour reflects credit on the Institute.

TELEVISION

Of all the particular aspects of the Television set-up in Australia, probably that of most interest to Amateurs is the matter of frequency channels. These are:—

| | |
|---------------|---------------|
| 49 — 56 Mc. | 174 — 181 Mc. |
| 63 — 70 Mc. | 181 — 188 Mc. |
| 85 — 92 Mc. | 188 — 195 Mc. |
| 132 — 139 Mc. | 195 — 202 Mc. |
| 139 — 146 Mc. | 209 — 216 Mc. |

It will be noted that the 49-56 Mc. t.v. band results from the change of the Amateur 50-54 Mc. band being changed to 56-60 Mc. This change will take place in 1956. The 139-146 Mc. band involves the change of the 144-148 Mc. band to 146-150 Mc. This change, however, is not proposed until 1963.

Amateurs who were on the air pre-war will remember that 56-60 Mc. was one of the authorised bands and was the centre of much experiment before 1939.

A SILVER ANNIVERSARY

An interesting Silver Anniversary which took place last May was that of "The Calendar," the official news sheet of the I.A.R.U. (International Amateur Radio Union).

The first Calendar was dated May, 1929, and it has been published regularly, except for war years, ever since in June and December. The Calendar was established by the Constitution of 1929, which changed the I.A.R.U. from a

mixture of individual members, national sections, and member-societies to its present form, and its first act was to proclaim the adoption of the then new constitution. Present members on the roster at that time included A.R.E.L., A.R.I., Canadian Section A.R.R.L., R.S.G.B., R.E.F., S.A.R.L. and W.I.A.

FED. CONTEST COMMITTEE

On another page of this issue will be found the complete rules for the 1955 Remembrance Day Contest. These rules are substantially the same as for the 1954 Contest, except that the operating procedure of what we have termed "substitute operators" has been clarified and incorporated in the body of the rules.

Members will remember that last year the Committee was asked at short notice to clarify rule 5 (which, incidentally, has been in the rules for some years) and their interpretation which was acceptable to W.I.A. members last year and also the Radio Branch of the P.M.G. Department has now been embodied as a sub-division of rule 5.

Your Committee is disappointed they have been obliged to publish the same rules as last year, because it was hoped some formula could be devised to ensure an equitable distribution of points which would fairly reflect the Divisional effort of both large and small States alike. This has not been due to lack of effort on the part of your Committee and others concerned in the popularity of this Contest.

Most comprehensive proposals were made by your Committee, Major Mitchell, of Federal Executive, and Bill Falconer, our Actuary. The Committee also received most constructive suggestions from the VK7 Division.

It appears, however, that no two States could agree on any formula proposed by the various members concerned and as a result, the rules must remain the same, at least for this year.

The Committee wishes you all the best of luck in the Contest. We would like to see as many participants as possible enter the Contest this year in the interest of their Division

to whom they owe their support. May the best Division win.

The Committee proposes to publish in the form of an article in the August issue of this magazine some suggestions on operating procedure, together with some "Do's and Don'ts" which will assist the Committee in checking logs. Please do your best to follow these suggestions because we can assure you they will help the checking Committee very much, especially at 0100 in the morning during peak periods when their grid drive is very low!"

FEDERAL QSL BUREAU

RAY JONES, VK3RJ, MANAGER

A QSO with YJIDL brought to light some interesting information on affairs in general in the New Hebrides. He reveals that prior to taking up duty there he was ZC3AB on Christmas Island for some time. Prior to returning to YJ he had a spell in VK4 but decided he liked the islands better. Informed me that an old time friend in Frank Harvey, YH1RV, had passed away about two years back. Frank, who was at Epi, Bonkoviya, would be well known to the real old timers. YJIDL states that there are three French Amateurs there although FUBAC is presently on furlough in France. They seldom work non French-speaking Amateurs owing to their knowledge of English being very limited. YJIDL was currently using 220 watts, but his normal input is 50 watts. The higher power is too costly owing to the power charges being two shillings per kw. hour. Says life will be a little dull from June onwards as the plane service is then due to cease. He is still a financial member of the N.S.W. Division and states that sometimes he receives "Amateur Radio."

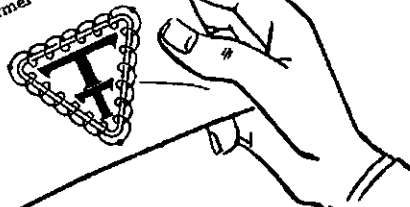
Jim Pershouse, VS2DQ, of Baling Estate, Kuala Ketil, Kedah, Malaya, again puts pen to paper to say he will be going on leave to England in July next and returning to Malaya in 1956. He is disappointed at the tardy response to QSLs, which has him held up on DX C.C., B.E.R.T.A. and W.A.P. As QSL Manager for the M.A.R.T.A. he states that for many months

AN OPEN LETTER

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on end he has not received any despatches from some of the VK sections. He says that as a good number of the Malaya Amateurs are Service personnel, it is of little use if cards for them arrive years after the contact as it is then impossible to dispose of them. He lists his personal QSL returns as follows (first figure cards sent, second figure those received):—VK1: 5, 1; VK2: 54, 14; VK3: 71, 11; VK4: 34, 12; VK5: 29, 11; VK6: 31, 8; VK7: 5, 2; VK8: 10, 2; total cards sent, 239; total received, 61. His remarks about the above list disclose a position that is "not so hot!" Surely we can do something to retrieve our bad reputation in Malaya. We can, by QSLing when we promise so to do and by Divisional Managers making despatches more frequently. The QSL Bureau address for Malaya is Box 600, Penang, Malaya, and the M.A.R.T.A. caters for Amateurs in the Federation of Malaya, Singapore, British North Borneo, Sarawak, Brunei, Cocos-Keeling Island, and Christmas Island (ZCS). Jim mentions that AC3AC and VSSGT will be moving to VS4 shortly and thence to ZCS.

Very little heard so far of the Yeti at Mawson (VKIEM). Cards coming to hand are few so far, and indicate only an odd VK QSO and a few with South America and Europe. However, South African contacts appear to have been more numerous.

FEDERAL AWARDS

GORDON WEYNTON, VK3XU, MANAGER

W.A.V.K.C.A.

Two applications for this Award have been received and checked. Both applicants have submitted the necessary evidence and it meets all requirements except for conditions under clause 2.

The applicants are John Knight, W6YY, and W. A. Wilson, ZL1BY. As soon as evidence under clause 2 is submitted, I will issue my recommendation to the Federal Secretary that Certificates be issued.

APPOINTMENT OF AWARDS MANAGER

I would like to thank the Federal Executive for appointing me to this position and I assure them that their confidence in me will not be misplaced. I would like to remind applicants for the DX C.C. and other awards, that they should make themselves familiar with the terms of the awards and the method of application, in order to avoid unnecessary delays and correspondence.

NEW SOUTH WALES

J. B. CORBIN, M.B.E.

All members of the Wireless Institute will learn with pride that the Institute, through its President of the N.S.W. Division, has been honoured in H.M. The Queen's Birthday Honours List. Mr. Corbin has given sterling service to Amateur Radio for many years, always striving to place it in the sphere to which it rightly belongs. Therefore we feel that he should be congratulated on the decoration bestowed upon him at this time.

GENERAL MEETING

The general meeting of the Wireless Institute (N.S.W. Division) was held at the usual venue on the last Friday of May. Despite the ravages of the Sydney climate, there was a good attendance when the President, Jim Corbin, opened the meeting. Visitors present, 2IK, 2AXS, and 1EG, were welcomed in the usual manner.

The President made an appeal for more members to assist the Council in its work, pointing out that a Division of the size of this one could not expect a Council of seven members to carry out its obligations efficiently and expeditiously unless more assistance was forthcoming from members. There are many jobs in the Institute that YOU can do, and start right now, so just contact any member of Council immediately.

Following a discussion on the recent formation of a B.C.I. and T.V.I. Committee, the meeting elected Dr. R. Black, 2QZ, Divisional B.C.I. and T.V.I. Officer, and called for volunteers for a T.V.I. Committee to function in conjunction with the Committee already formed by the V.H.F. Group. Hans Ruckert, 2AOU, and Norm Brooks immediately offered their services.

Further business was discussed at the meeting which closed at a late hour.

NORTHERN SUBURBS

There is not a great deal of activity on the air amongst the North Shore boys these days. Henry 2ASU is increasing his input to 100W, and modulating with a sooper-dooper high power modulator—807s in zero bias, with the

negative peaks properly suppressed with a high level clipper. All the gear should be working by the time you read this. DX hunters in this neck of the woods will have to look to their laurels. Vic 2AWN reports that his ZL special 20 mx beam has successfully withstood the elements for the past twelve months. Very pleased with results when the band is open. High power proponents please note—Vic uses a pair of 807s in p.p. Ted 2GQ heard working Ws recently. He does very well with a modest 20-odd watts in a suburban location.

Bill 2AJL seems to have vanished in smoke—or is it paint Bill? Likewise ditto Eric 2AVS. Jim 2JY occasionally pops up and even more rarely, so does Bob 2ARI. Jim 2HK not very active of late. Domestic responsibilities keep him quiet. Reckons he can't fight his way past the napskins into the shack! Nevertheless he does manage to work Ws on 40 mx phone with S9 plus reports at night. That's more than I can do! Probably a 250 ft. long wire about 70 ft. high helps! Incidentally, he tells me that the Ws cannot understand why we don't use the band more. Country members have more opportunity to erect long wire aeriels than we suburbanites, so what about it chaps?

George 2AGO heard recently on 20 mx after many years of silence. Pleasing to hear a welcome signal from Greenwich. Lyell 2GW and Arthur 2OM heard on 15 mx occasionally. How's the shoe repairing business going Art? Have not heard Hec 2ACI for ages. Must be on the air when I am asleep methinks. How's the fishpond going Hec? Tom 2GR is another Amateur who seems to have vanished. What's up Tom? In the doghouse? Never hear Tom 2AFN these days. You have no excuse now Tom; with that big tranny, low line voltage should not worry you.

By the way, did you note the sudden burst of activity on Easter Monday? Seems to me that a lot of blokes do a lot of listening but not much talking unless the DX is on. If every licensed Amateur had only ONE contact per month F.E. wouldn't need to plead for more use of the bands. As a matter of interest, have you ever noticed that a spell of warm or hot weather during what should be a cool or cold season brings in the DX? Look at Easter Monday for instance.—2AWN.

VICTORIA

It is absolutely sickening, Sir. Absolutely sickening. A short spell of sick leave and what happens. The magazine goes to the dogs. Did you see last month's notes? Did you see last month's mag? Absolutely sickening! Let us go into detail. The compilation department below strength—so what? Take the first page, at least three mistakes. Pages 2, 3, and 4 not bad; I checked them myself. Page 7 not bad, although I did not see the proofs. Page 8, absolutely sickening. Sir! Here's me sick, in fact almost croaked, and what happens. They devote a whole page to Pansy's twaddle about frogs. Then page 14. What a hide, what a nerve. Let me tell you the Technical Editor will not be pleased to write letters to anybody except stiff letters to Divisional Sub-Editors on the matter of more articles. This business of answering readers' queries is a lowly occupation and will be handed to the Technical staff. Who does the Mag. Committee think I am, Mr. Felix. Professor Murdoch or Dorothy Dix? Now to page 19. Do I see a brilliantly written article modelled on the style of "Pro SPS" only headed "Pro 3AFJ"? Not on your sweet life. Had it not been for Mrs. 3LN and the country boys there would have been no notes at all. Page 23, what did I find. Another page by the "stink—" sorry the pen slipped—the Shrinking Violet. I re-iterate "ABSOLUTELY SICKENING SIR!"

But back to business for a few minutes. There will be no write up for the May meeting as nobody gave me any gen. The June meeting, however, is a different kettle of fish. Approximately 90 members of the Headquarters Division (beat that Parsons) were present to hear Roth Jones speak on Antarctica and to view the excellent collection of photographs he brought along. For mine, they can keep Antarctica, I'll take Thursday Island.

During the evening 3AAV and 3APS were admitted as full members of the Headquarters Division and Messrs. Multon, Sanders, Hore and Alexander as Associate Members. 3LN spoke on the Hobbies Exhibition to be held in August and requested that anybody having any ideas for this show to contact him. Two bob gets you four, you are not rushed Len.

The Federal Secretary, whom I suspect is neglecting his duties, is looking for somebody to act as radio instructor one evening per week at an Eastern suburban boys' home. He assures me this is a very worthy cause and anybody willing to undertake this task is asked to contact said Hon. Fed. Sec. as soon as possible.

Talking of sticky questions, must admit I was stumped on the skin effect, etc., of elliptical gobbledeedoo. This, I thought, is something really modern, must be found in the 1956 Handbook or the published papers of some continental learned society. Decided the best thing to do was to ask some of the newcomers to the ranks, but no luck. Ultimately I asked 3TX, who has been in the game since the year do or soon after. Bill was able to give some little info. It appears he had one of the gobbledeedoo gadgets working for quite sometime when unhappily the wheels fell off. Before he had time to effect the necessary repairs, "T" model Ford coils and condensers came into vogue. Bill scrapped his gobbledeedoo in favour of the more advanced technique. What a pity all Grandpappies are not as progressive as Bill.

As I have no rx or tx, both being U.S., personal notes look like being restricted to what I pick up from any of the lads I run into. Among these is Eric 300 who I had the pleasure of seeing this month. Eric is back on 20 mx again after a long absence, but finding the DX rather elusive. Then there is Bert 3AAF, a lad who had a promising future before him, a lad with the ambition to get on in the world of Amateur Radio, a lad I was fondly guiding on the right path to be a worthy successor to our present, very able, Technical Editor. Now I have me doots. When last speaking to him he kept getting parallel tuned circuits mixed up with blue eyes. When I mentioned half and full waves, he dreamily replied, "Yes down to her shoulders." Looks as though I have a job for life.

Amongst the visitors this last month were Reg TWN and Gill, his partner in crime. Gill hopes to have a ticket before long. It was very pleasing to see Reg after a two years' silence or something. The first hour was spent discussing radio and the next three to every subject under the sun. The discussion on modern civilisation was particularly interesting. I only wish a certain VK5 had heard it. He would now know that time marches on. Reg nearly flew home two days early when three feet of not-so-playful cat took a fancy to his left ear. You were lucky to make it Reg.

Here is the programme for the rest of the year: July—The Amateur's Workshop (Ill.), further test equipment, by S. Clark, 3ASC; August—Translators, F. K. McTaggart, M.Sc. 3NW; August 31—General Discussion and Exhibition Programme. October—The Amateur's Workshop (Iv.), testing an amplifier, S. Clarke, 3ASC; November—Antenna Demonstration, U.H.F. December—Film Night. February, 1956—Melbourne Technical College Lecture. March—Swap Night. April—Annual General Meeting.

80 METRE TRANSMITTER HUNT

At the 80 mx Tx Hunt, held in May, the hidden tx was located on a high cliff overlooking the Maribyrnong River at West Essendon. Len 3LN, who hid the tx, concealed it in the engine of his car and carefully fed a dipole down to each front wheel and buried the entire antenna to a depth of 3 inches under the ground over its entire length. He also had a decoy aerial suspended from a kite, but this did not unduly worry the gang as the winner, Reg 3ZAD, located the tx within 45 minutes of the starting time. Second place went to Laurie 3ALY and third place to Bob 3OJ.

EASTERN ZONE

By the time these notes are published it is hoped that a successful Convention will have been held at Maffra. David 3DY is away in Sydney and Keith 3SS is very busy, so he only gets on the air for the hook-up. Doug 3ASE is building a cubical quad antenna for 20 mx so we can soon expect to hear him snapping up the DX again on that band. Lindsay 3FO is not very active of late, as he is busy with the lambing season, etc. He is also the father of a new junior op., another YL.

We hope to hear soon that Bill Higgins, of Heyfield, has been successful in his A.O.C.P. exam. I wonder when Laurie, our President, is going to sit for his? There have not been any more reports from Ossie 3AHK about DX lately so maybe it is too cold for him in the shack these nights. There is no news from the Bairnsdale boys either so they must also be inactive as ever.

SOUTH WESTERN ZONE

Now that we have recovered from the Convention activities, the lads are now more active. Ted 3AEH is busy making an oscilloscope and he is trying to find an elusive trapezoidal pattern. It has been pleasing to hear 3AKE on 2 mx after his long silence. Even Jack 3SY from the local commercial station, has had time to attend meetings. Keep it up Jack! The old timers 3BU, 3WT, and 3ALG are very active. 3BV was converting an AR6 when last visited. 3AWZ has the rig now on one switch

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Directivity—non-directional.
Size—2½" spherical diameter.
Connector—Standard international 3-pin.

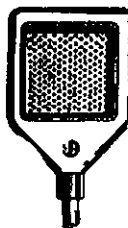
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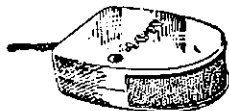
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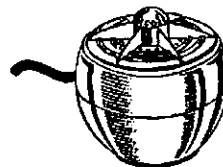
SPECIFICATION

Output level: -55 db ref. 1 volt/dyne/cm².
Cable—approx. 4 ft. of co-axial supplied.
Weight—6 ozs. unpacked, 7 ozs. packed.
Dimensions—microphone only 2¼" x 2¼" x ¾"

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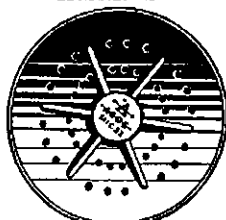
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and it is pleasing to get an instantaneous reply. Nothing has been heard of Phil 3PG, Jack 3ALP, or Chas 3KH. A disposal sale may wake them from winter hibernation. Vic Clarke and Max Stock have had to postpone Amateur activities because of home duties.

NORTH EASTERN ZONE

The highlight of Amateur Radio activity in the North Eastern Zone in the month just past is necessarily the Annual Convention held in Shepparton on 15th May last. Meeting in the new radio SSR auditorium in Wyndham St. were Col 3WQ, Les 3ALE, Tom 3TS, Jack 3AKC, Ken 3KR, Murray 3HZ, Ron 3AQG, Des 3CO, yours truly 3FD, Jack 3PF, Hugh 3AHF, Brian 3ASF, JAGG, Stan 3AGT, and all the way from Geelong, 3AWZ. Our Associates and other visitors included the two Lawrence boys, Vern Wyatt, who now operates as 3AXW, Keith Cakebread, Ken Mercer, Graham Moore, Bill Carlisle, Les Cusack, John Goodall, M. Ferguson, Jim Harrington, Ian Tully and Earle Scoones.

Apologies were received from Keith 3JC, Alan 3UI (who was able to turn up later), Alex 3AT, Frank 3ZU, Chas 3ACW, Syd 3CI, Howard 3YV, Peter 3AFP, Rex 3UR, who, of course, is now in Bendigo, Doug 7IJ, who is now in Hobart.

Les 3ALE was elected President of the Zone, and Vice-Presidents were Col 3WQ and Vern, now 3AXW. Our Associate, Earle Scoones is Secretary. The position of zone correspondent was modified in that, although 3FD is still in charge, the work of collecting information in the larger centres has been detailed out to Jack 3AKC in Wangaratta, Ken 3KR in Benalla, Des 3CO in Seymour, and Les 3ALE in Shepparton.

The zone communications are still in the hands of Col 3WQ and Ken 3KR, while the zone co-ordinator is still Henry 3HP.

After lunch in various cafes, everybody looked over the new studios at SSR, then down to the railway station to inspect a diesel-electric locomotive, appropriately engine No. 73. From here to Radio Australia, where the day wound up with a real C.W.A. style cup of tea prepared with assistance, by Mrs. Murray Clyne and Mrs. Les Eliason, a fitting finish to a very interesting day.

The zone hook-up is now each Sunday afternoon on 3700 Kc. at 1330 hours. Where possible, variations from standard practice will be advertised over 3WI and also in "A.R."

CENTRAL WESTERN ZONE

Was pleased to have a visit from Ray 3ATN, of Birchup, and his two friends recently. He was on an exploring trip to Mt. Arapallies to locate a spot for some future tests on 144 Mc. Ray and Trev 3ATE went to this location a couple of weeks later and quite a number of good contacts were made, including one to VK5. However, I believe that the wx was not very kind on this day, but I guess it would not dampen the spirits of these two keen 144 Mc. enthusiasts.

Keith 3ATS, of Murtoa (also your scribe) finds that the drain on home lighting batteries by respective transmitters is fairly severe, so is on the lookout for a small alternator which should prove very satisfactory. Heard Neville 3ACN, of Bendigo, recently and was sorry to hear that his mother had not been in the best of health, so hope that she is better by this Neville. A couple of locals paid a visit to Herb 3NN, of Janac, and were full of praise with Herb's whole set-up. Herb works on 144 Mc. as well as the lower frequencies. Often hear Jim 3DP on the band, also Merv, who is one of the regulars. There has been good rains through the Wimmera so I expect the country Amateurs will be busy cropping during the next few weeks.

MOORABBIN RADIO CLUB

The club held their annual Ladies' Night last month and the evening was given over to a film night. The hall was filled and everybody enjoyed the excellent programme screened by Bob Hall. At the conclusion, a delightful supper was served and this time the ladies did not have "to wash up or clear the dishes," they were done by the O.M's.

Since the introduction of various games into the club, this has certainly enlivened up the social side, especially during the cold weather. Members are reminded to bring along a drinking vessel, as these utensils are a little on the scarce side. The committee has agenda items arranged until the end of the year and by all accounts the meetings and practical nights will prove most interesting.

With the advent of the DX bands opening up, it is hoped that there will be more applicants for the club's certificate, especially from the VK Amateurs. It is rumoured that 3NZ is building a super mobile transceiver. 3AXR was QRL with the mumps last month. 3AQX is building a new rig. Our Secretary, Bill Smith, is very

active with civic affairs and how he finds time to attend to all his duties is a deep mystery. Pleased to welcome as a member Geo 3XJ, who is now living in the South East corner of Parkdale—more QRM for 3BZ. Another call that will shake the air when he comes on is 3JL, formerly 3QQ. What's happened to 3AXC, one does not hear him, likewise 3ACS?

OEELONG AMATEUR RADIO CLUB

The official club meetings have not been well attended recently because of the colder evenings, however there has been some excellent discussions. Members engaged in a debate of whether high or low power was the ultimate in Amateur Radio. Many facets were studied—the expense, aeriads necessary, QRN and the like. Jack Beckingham demonstrated the practical uses of a vacuum tube voltmeter which was appreciated by all present. Two new members were welcomed, namely Les Rice and Peter Ward.

Bob 3IC has recently returned from a holiday along the Murray where he renewed old friendships with 3AJU at Red Cliffs and 3ASS at Swan Hill. Bill 3AWZ spent a week in the North East and met the boys—had an afternoon with 3WQ. Peter 3AFK has purchased a new Type A and is very happy, now convalescing in hospital, carbohsaling all and sundry.

The club visited the Electrical Exhibition at the North Melbourne Town Hall and was very pleased with the evening's entertainment.

Members are asked to provide material for the next annual syllabus and any of you fellows who could give us an evening down here would be well appreciated.

BALLARAT AND DISTRICT RADIO SOCIETY

Approx. 25 members were in attendance at the June meeting which was held as usual at the Y.M.C.A. After the business section had been dealt with, those present engaged themselves in some active construction work on the club rig. The proposed line up being v.f.o. or xtal control into a 807 p.a. and efficiency modulated. The rx will be a converter into a b.c. set. The xtal freq. is 3540 Kc. and operation will be confined to 80 mx for the time being.

Relations and interest in the club have suddenly lapsed to negligible proportions amongst the active licensed Amateurs. The reason being that a break through to Forbes in VK2 occurred on the meeting night and of the five v.h.f. operators, all were at the meeting and sadly missed out. The Melbourne gang wasted quite a lot of r.f. trying to inform 3PO and company (just as well it wasn't ZL Don).

My apologies to the v.h.f. scribe for using his news, but a little salt shouldn't go astray. Having said my piece, I must go and try to smooth out relations before it's time to write this again for next month.

QUEENSLAND

ROCKHAMPTON ZONE

The monthly meeting was held on the evening of the 22nd May and was well attended. Twenty members being present. After dealing with general business, a farewell was tendered to John 4FU, who is leaving sunny Queensland to take up residence in VK3. After disposing of the liquid and other refreshments provided, the Rocky gang were safely in their several beds before midnight. His friends are advised that John should be heard signing 3AFU in the near future.

The 7 Mc. band has recently shown some surprises. Some of the Rocky gang, with competition from VK3 and VK5, have been heard working W phones with flattering signal reports. After a long period of silence, Col 4CD demonstrated recently that the gear still works, and it is hoped that Col can find time to keep it working. Another voice to make a return to 7 Mc. is that of Percy 4PC, of Monto.

Mark 4MJ has recently returned safely from a holiday in Sydney and appears to have enjoyed his trip though it seems that the hospitality of the VK2 gang was hard pressed to compensate for the weather.

With improvement in band conditions, local activity on 14 and 21 Mc. has increased and it is hoped that inward QSL officers will report increased business in due course.—4NG.

TOWNSVILLE AREA

A very well attended meeting of the T.A.R.C. was held as usual at the residence of 4BX on 5th May. It was quite pleasing to see such a roll-up and maybe the films acted as a magnet. On opening the meeting, the Chairman, 4RW, duly welcomed the visitors: 4SE, 4LK (of the Flying Doctor Service), 2AQJ (R.A.A.F.), Dr. Georgeson, Bill Parker, R. Adams and Mr. Dash. The business of the meeting was quickly put through in the usual manner and all settled down to enjoy the films, kindly made available by Australian General Electric through the

good offices of 4GE. Many thanks, Ernie, they were well appreciated, especially the film on Vickers in England on transformer equipment for hydro-electric, etc.

An interval was made to allow all present to partake of the savouries put on by Mrs. Walker, who certainly spent some time in arranging the spread for the boys. It was agreed that another film evening be arranged in the near future.

Next meeting was held on 2nd June when Mr. Parker finished his lecture on D.M.E. and all adjourned to the top of Castle Hill to see the D.M.E. in action and a large roll-up attended.

Vern 4LK has promised to bring the boys down from Charters Towers for the July meeting when the lecture on Antennae is being arranged.

Rex 4LR is back from the Palm Beach Convention where he enjoyed himself. Harry 4RV is having modulation troubles and hopes to give the key a spell after pounding the brass all day as a chore. 4RU running around gathering bits and pieces to get on the air again. 2AQJ wants a VK0 call sign for the Federal Capital Territory. Bud wants to work DX C.C. in a hurry till the boys wake up it is not a new country!—4RW.

SOUTH AUSTRALIA

The monthly general meeting of the VK5 Division (which has as its motto, imitation is the sincerest form of flattery) was held in the clubrooms to the usual large attendance of members, and the guest speaker was Mr. Clem Tillbrook (5GL). The VK5 President, Gordon 5XU, took the chair, but was not permitted to take it very far as he was forcibly seized and made to return it to the head of the room. Tut-tut, naughty-naughty! Clem 5GL took as his subject, "Crystals and Crystal Oscillators," and dealt at length with the good and bad points of most types of crystal oscillators, illustrating his points by the use of the blackboard. He spent quite a time discussing the advantages and disadvantages of the overtone oscillator at the same time drawing attention to its particular advantages to the v.h.f. experimenter. The tritoid osc. naturally came in for its share of discussion, particularly with respect to its advantage of quick frequency changing from the Amateur's point of view, and Clem wound up his extremely interesting lecture by demonstrating, practically, with the aid of a multiple osc. circuit, very nearly all types of xtal osc. circuits known to the Amateur fraternity. This multiple osc. circuit was specially made up by Clem for the night's lecture and this part of the practical demonstration was of particular interest to the younger members of his audience who should also have profited by his practical explanation of xtal frequency checking. A number of questions were answered by Clem, and as Hector 5UZ said in his excellent speech, when proposing the vote of thanks, all members have come to expect something out of the box when Clem lectures, and so far he has never disappointed us. And so say all of us.

Very little business was aired during the night, although Howard 5XA brought up for discussion his suggestion for a memorial board for all silent keys of the Division, the same to be displayed at all meetings of the Division, which was particularly well received by those present, and the matter was put in the hands of Council for action along those lines. Among the welcome visitors were D. Pfeiffer, R. Lawrie, D. Cole, N. Lincoln, T. Whelan, R. Lee, and C. Macintosh, who were welcomed by the Chairman with the usual VK5 honeyed words. The meeting closed at the respectable hour of 11 p.m., and before leaving all present were reminded of the special meeting of the VK5 Division which would be held in the Assembly Hall of Prince Alfred College a fortnight later.

The special meeting of the VK5 Division was well attended by members and their wives and families, members of the I.R.E. and many visitors, who had assembled for the purpose of witnessing the General Motors-Holden's "Free-view of Progress" which if you don't already know, is a live presentation of the scientific progress made over the past century or so. It is present in Adelaide for demonstration at all high schools and colleges, and if you have seen it then it is not necessary for me to go into raptures concerning its technical or entertainment value, and if you have not seen it, then all I can say is you have missed a treat.

Actually the Division made quite a scoop, as very few, if any, outside organisations have been able to put this show on, much as they would have liked to, owing to heavy previous bookings. The whole arrangements were handled by Gordon 5XU, our President, and just how he did it remains one of the best kept secrets of the VK5 Division—Pincott notwithstanding.

Each month as I write these notes, with monotonous regularity, I find myself without news from the country areas, and each month



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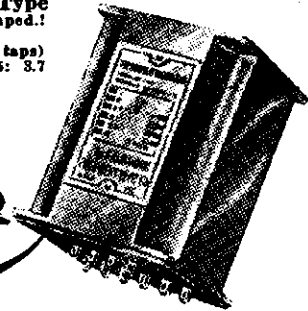
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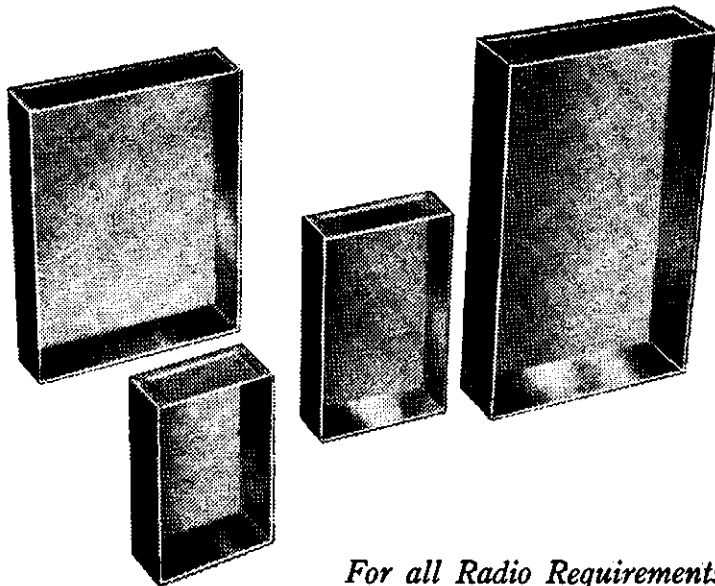
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at the nick of time along comes a letter from one or other of the country areas which saves the day for me. This month I have news of the Port Lincoln area, an area incidentally that has been silent for some time in these notes. My correspondent was Wally 5DF and he tells me that the area was honored recently by a visit from the worthy Vice-President, John 5KX, who was on a working visit, but very busy and unfortunately could not be shown the sights. However, John was very welcome and it is hoped that on his next visit he will have time to meet the boys and perhaps check up on the highly reputed DX conditions that are said to abound in large chunks.

Another welcome visitor was Clem 5GL, who did not see many megacycles but definitely did see quite a lot of the 50 cycles. He visited the local 50 cycle hatchery and under the guidance of Wally 5DF was very impressed with what he saw.

The atmosphere is at long last being bombarded with signals from the antenna of Pat 5LT on 20 mx, although as yet there have been no reports as to the signals arriving at any place. His wooden tower is not up in the air yet, but from all reports it will not be long.

Jack 5VJ always seems to be busy these days fixing up other people's sets and therefore has had no time to chase the spiders out of his tx gear. However, he must slow down some time or other and then look out spiders, here he comes. Wally 5DF was having an enjoyable contact with his moderate nine watts recently when strange noises and odd smells indicated that the contact was finished ahead of schedule, due to the power transformer making the unwelcome decision. A replacement being the order of the day he decided that it would be a good time to re-build the buffer and final stages of the tx, or to put it bluntly, enjoy himself to the full delving into the innards to see just what makes it tick. Many thanks for the news Wally, always remember that no news is bad news for me.

To Charlie 5ON goes our deepest sympathy in the loss of his wife this month. It is extremely difficult to put on paper just how one feels in moments like this, and all that I can say is that time is a great healer and our thoughts are with him in his sadness.

Incidentally, in last month's notes I said that Alan 5VO was well on the way to good health again, but the latest news tells that he has had a relapse and will be confined to the hospital longer than was at first thought. Sorry to hear it OM, but keep the chin up, and here's hoping that you will soon be on the jolly old feet once again. Laurie 5SL is the proud father of a bonny bouncing boy this month, and seems to have come through the ordeal quite OK. We nursed him through the last three or four days successfully although he gave us an anxious time over the last 24 hours. We are happy to advise that we have never lost a father as yet! Congrats, Pat, just fancy, another prospective Amateur in the family; do you feel hysterical with joy?

SOUTH EAST AREAS

The meeting night of the S.E. gang for May was held to a representative gathering who thoroughly enjoyed the entertaining evening. Erg 5KU, who had just returned from holidays in VKS, provided the main entertainment for the night by projecting some excellent color photos taken during his tour of Halls Gap, Ballarat, Bendigo, Geelong, Warrnambool, and several other places which he had visited. The gang also had the proofs of the photos taken of the boys and the R.D. Trophy for perusal, and many and varied were the remarks passed as to the photogenic possibilities of those in the said photo proofs! Supper concluded the night and everybody present voted it one of the best gatherings to date.

Erg 5KU has very little activity on the air to report for this month as he has been away on annual vacation, but with the arrival of the colder weather, no doubt he will be heard more frequently. John 5FF was heard on 40 mx, but no takers evidently. Try again OM and be sure to keep listening, conditions are getting more stable as each week goes by. Tom 5TW has been keeping skeds on 2 mx, but has not been heard on any of the other bands. 10 mx showing any signs yet OM? Claude 5CH has been quite active on 40 mx using low power and getting out extra well. He could not attend this month's meeting because he was sojourning in VK3 and if he runs true to form he will have accumulated quite a pile of disposal equipment. Oh to have so much filthy lucre!

Col 5CJ has also been active on 2 and 40 mx carrying out his usual skeds. How are the family OM? Leo 5ZAG has completed his new beam, but is having a little trouble getting it skywards. The trouble is that the birds in the vicinity are tickled with their new perch and keep putting the elements out of alignment. Perhaps Jim 5JK will lend you one of his many umbrellas and then you can work at the

base of the beam without any qualms! Bram 5ZAB is among the missing for this month, but if all can be believed he is doing real well. Judging by the VK3 v.h.f. notes in the magazine he should be more than satisfied.

Stuart 5MS has had a quiet month, as far as the air is concerned anyway, but has been working on the construction of a 2 mx xtal controlled converter, and hopes to have a 5/5 array up very soon. He has been doing a lot of listening although finding a little time for activity on 20, 40 and 80 mx. Not too much success as to any new countries, only two this month, but when one reaches the stage of Stuart with respect to new countries, this is not to be sneered at. John 5JA not active as yet, but the boys have hopes. As my buddy, Fro 5PS, said recently, business is probably keeping his thoughts off of Amateur Radio for the present. Incidentally, Fro 5PS is very keen on the new craze of color films and very kindly offered to take a photo of me in color. He said that he will be able to do this when he gets his new cinemascope camera. He tells me that is the only way he could fit me in the viewfinder. Could he be kidding me? See 5AX, of Gawler, now has a brand new set-up with a 6148 in the final, which is doing very nicely thank you. He is still changing his antennae around, but is still not satisfied, either the feeder does not feed or the radiator does not radiate. If I may use the words of a cleverer man than I, "because you put a feeder on the junior op, it does not necessarily mean that he will eat!" Thank-you, Ron 5FY.

I received a post card today from Brisbane showing a decidedly red nosed character holding an outside in drinking utensil containing an amber coloured liquid. Judging by the look on his face and the colour of his nose, he is no stranger to the said liquid. The words on the back of the card tell me that Arch 5XK cannot hear my 80 mx signals in Brisbane, and with a look on my face as would be worn by the cat that killed and ate the canary. I reply that he could not hear my signals in Adelaide, let alone in Brisbane. Ho hum! Have a good time Arch?

Speaking of VK4, Associate members' representative on the VK5 Council, Jim Paris, is spending a couple of months in that fair State. He recently disposed of his grocery business in a northern suburb for several millions and is determined to relax in luxury for some time to come. If any of you VK4 chaps should see a tall handsome stranger with two left legs lazily strolling down a main street in VK4, watch to see if he opens his wallet. If a couple of moths fly out, that's Jim!!

WOOMERA RADIO CLUB

Ray 5FF is again pride of place in the news from Woomera this month because of the fact that he has become a father for the third time, to wit, a daughter. Unfortunately he has been on the sick list himself, but from all reports he is now well on the road to good health. Once again I must repeat that we have never lost a father in VK5; mind you, we have gone close, but we fathers are made of stern stuff, a fact that sometimes seems to be overlooked by the XYLS. The two aspiring candidates for the A.O.C.P. from the club appear to be very promising, and by the time this appears in print, Keith and Bernie should know just how the results have gone. Best of luck fellows, but don't worry if the first time slips up, many a better man than you has sat more than once. I began to lose heart after the fifteenth time! Sidney, who is starting back in the field slightly, is doing real well in his studies and a future examination will test his skill. Keep it up OM.

Ron 5FY recently took his rig to the club-room and put an antenna up for it, which added to the rhombic, two centre fed zepps and an end fed vertical, makes it even harder to get inside the shack these days. Ron makes some nasturtions concerning the fact that these aeriels have been able to pick up 5XU and 5MD, but as yet no 5PS. My customary "water off a duck's back" attitude enables me to treat such nasturtions with suitable ignore.

TASMANIA

The field day held at Richmond on 15th May was well attended, despite very gusty winds and threatening clouds. Thanks are due to THB for choosing such a good picnic spot, and also for the trouble he went to in placing marker flags for the cross-paddock drive in.

The 80 and 2 mx tx's were concealed in a hole dug amid trees and scrub on the river bank, by 7LE. Rumour has it that Len plans using a bulldozer next time chaps, so don't forget to take a spade along. First home was 7BJ, closely followed by 7OM, 7LJ and then Brian Eyre, Barney Watson and 7FM. The "trophy" of course is now in the custody of 7FM, who hopes to use it as a cavity resonator until such time as he has to hand it over.

An expert throw by Mrs. 7LJ placed her first in a "throwing the rolling-pin" contest. Could it be that you are an artful dodger, Lon?

A blind-fold tx hunt provided quite a bit of amusement for the onlookers, and 7FM turned the tables by registering shortest time, whilst Rolly Shorthouse had to be restrained from walking into the river after the elusive signal. Len's (7LE) time was considerably extended by the fact that the tx never seemed to be at the right place at the right time. I think a certain amount of malicious enjoyment was had by pushing the car (with the tx in it) around the field, just out of Len's reach. Just goes to show, Len, don't leave the car unlocked next time. On second thoughts though, if it's to be a bulldozer, that will slow them down quite a bit.

The general meeting for June was held at the usual spot with about 21 present, and presided over by 7FJ. The lecture, given by David Johns, was entitled "Wild Life on Macquarie Island," and it proved most interesting indeed. David used coloured slides to illustrate various points in his lecture to a most appreciative audience. That reminds me, congrats are due to David on passing the A.O.C.P. and we hope to hear from you in the near future.

Suggestions from 7FJ and 7LE with regard to a mobile hunt and a field night were held over pending better weather.

7HB at Richmond has acquired two new antenna poles and is also becoming interested in 2 mx. Go to it, Harry. I can recommend the 2 mx band as being quite free of the QRM troubles experienced lower down. It's frequently quite free of everything else too, but we can hardly blame the band for that. Barney Watson is busy converting a disposals rx for 144 Mc., and has the job well under way. You will have to bring more pressure to bear on Tom, Barney, then you can work one way and shout the other. XYLS permitting, of course.

Lon 7LJ is spending some time exploring the transistor field, and I understand he has a transistor rx working on the b.c. band. Methinks the lecture committee will be looking in your direction soon, Lon. After his recent sojourn in hospital, Athol 7AJ is now up and about again and adding his contribution of r.f. to the ether. Doug 7AB has certainly lost no time in settling down to business and now has a beam up and working on 20 mx. Smart work, Doug.

The old grape vine brought to light some interesting news on 7DE's activities. Apparently Dave, having recently made a vented enclosure, finds now that the lounge room fits it more closely than calculated—or vice-versa. Anyway the two have to be separated and helpful suggestions (gelignite barred) would probably be appreciated. Certainly is a "rum" turn, Dave.

Tom 7AL, having moved to a new QTH, was dismayed (in a radio sense, of course) to find 7DW building nearby. Best you sell a T2FD to Doug, Tom, and when you are both on together you can absorb each other's energy in the terminating resistors. Associate Sandy Powell (Speed to you) has succumbed to the audio bug, and is sinking quite a bit of the "hard-earned" into a wide-band tuner and all the trimmings. After a few teething troubles, I believe all is now working with such realism that he has to switch it off, because it makes him feel he is back at work.

NORTHERN ZONE

Congratulations have been pouring into the 7RB domicile on the arrival of the long-awaited son and heir. From 7GM comes news that a mobile 2 mx tx is well under way, whilst a new 40-20-15-10-5 mx 100w. tx has been operating very successfully into a dummy load; with this and the recently completed multi-band rx, Gordon will be a force to be reckoned with in the R.D. Contest. If one is to believe all one hears, that veteran traveller, 7CA, is outdoing the exploits of Marco Polo. 7LX is settling in well in the new job.

7LZ, 7FF and 7BQ have been busy with v.h.f. gear. 7AM appears to have deserted the Amateur ranks at present for golf. Local v.h.f. men are very happy with the bi-weekly weather info. on the ABC Tasmanian stations at 12.23, since quite a lot re temperature inversions is given. As yours truly, 7XW (deputising for 7CA) is leaving Tasmania to take up an appointment in VK3, the "Shangri-la of Australia," here's a suggestion. For the next annual meeting how about making a real outcry of it by all zones meeting at Waddamana where all accommodation facilities are available?—7XW.

NORTH WESTERN ZONE

News from the central highlands indicates that the Amateurs in that locality are very enthusiastic about v.h.f. and have gone to a great deal of trouble in order to get signals in and out of their location. Parasitic aeriels have been constructed and mounted with vertical polarisation on Mt. King William and Mt. Olym-

pus and horizontally polarised on Brady's Look-out, which are all over 4,000 ft. in height. These aeriels are beamed towards Launceston and anyone hearing signals from them are requested to contact 7WN or Mr. Bill Ion, of Bronte Park. It is expected that the installation of parasitic arrays on Frenchman's Cap and Mt. Dromidery will be carried out later on.

The last general meeting of the zone was a combined meeting held at the home of 7SF where a very good attendance welcomed two new Associates to the zone. At the meeting it was decided to concentrate work on 2 mx gear, ready for the coming summer. The meeting closed with a few words in honour of the late Murray Richardson, 7MR, and then adjourned to light refreshments and a demonstration of speaker columns which proved extremely satisfactory.

A visit from 7AI the other day disclosed of many adventures in holiday form in VK3 land and now he appears almost broke with only a few pieces of junk to show for his gadding about. Good luck to you, Ken; wish it had been me.

PAPUA—NEW GUINEA

News from VK9 this month is somewhat restricted, due no doubt to the fact that the boys have been QRL, or just plain forgetful. One bright spot, however, which will most likely provide an incentive to others to try their luck, was the fact that Frank 9FN, with nothing better to do, decided to try his luck on 3.5 Mc. He hopefully called CQ. Imagine his surprise when a G station answered his call. To prove it wasn't a fluke, Frank decided to try again, this time another G, quickly followed by a PA0. Not satisfied with that, and chasing

his luck, Frank then worked a couple of W stations. Won't be long now, that one will find VK9s dotted throughout the 3.5 Mc. band during the long winter evenings in the Southern Hemisphere. Most likely see you there Frank one evening soon.

The VK9 gang are arranging a Convention, to be held, we believe, in Lae. Appears that some VK4s have expressed their desire to visit us when and where arrangements have been finalised. Perhaps, too, that some of the other stations may be interested. You can be sure that the conviviality and hospitality will be second to none as we do know how to do these things. Lots of arrangements to be made, organising to be done, but details will be made available to all those who may be interested as soon as possible.

This year the VK9 gang intend to field a full team in the R.D. Contest. Details are top secret of course. More than my life is worth to divulge them. I can say this though: "All the participating stations intend to work the clock around." Looks like coffee will play a big part in keeping the gang on their toes, or should we say, glued to their chairs. Just watch our smokes! An alarming thought just occurred to yours truly. Suppose the h.f. transformer turned its toes up half way through. An association of ideas no doubt, but what a horrible thought.

9CS has been visiting the Highlands. Heard recently from 9RC in Wau. Hope you can make it sometime soon from your own QTH Carl. Regular on the Sunday net: 9FN, 9RC, 9RM, 9FL, 9AU, 9EB, 9CG, 9GV, 9WP, and 9EW. Would like to see the other VK9s join in the Sunday morning net on 7080 Kc. at 1000 hours.

9GS using a cubicle quad on 15 mx and getting some good reports. Bob also has a 3 el. beam almost completed for 14 Mc. Looks very impressive, too. Ron 9RG due to go on leave

soon and expects to bring back a brand new rig with him from Australia. Bill 9WP still thumping out a signal with his 4 wats and getting in amongst the W stations. 9BW still in the process of building new rig, but managing to get on for the Sunday net. John 9KT been QRL with official business lately and unable to devote much time to Amateur Radio.

All for this month gang, but please drop me a line every now and then so that we will be able to make something out of this column.

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CORRESPONDENCE

The opinions expressed in these letters are the individual opinions of the writer, and do not necessarily coincide with those of the publishers.

ANSWERS TO VK6MK

Editor "A.R." Dear Sir,

With reference to Tom Mulder's (VK6MK) letter published in the June issue, may I use your valuable space to reply?

Mr. Mulder transgresses four of the six clauses in the time-worn Amateurs' Code of Ethics—a code which we Amateurs have zealously treasured since the earliest days of Ham Radio.

Number 2 clause reads: "The Amateur is Loyal." I desire to point out that the Uniform Constitution, adopted by all States except VK6, does not discriminate against Limited Class Licensees. The fact that the VK6 Constitution presently discriminates, is an act of disloyalty to the Institute as a whole. This is a continuing disloyalty until the VK6 Constitution is amended in line with the Uniform Constitution as now proposed.

Number 3 clause reads: "The Amateur is Progressive." A change in time (we are now in 1955) requires a change in outlook. Limited Class Licensees are the Hams of today. Mr. Mulder wants to discriminate against them because they can't read Morse and can't operate on the lower frequency bands. Such an attitude is unprogressive and should be condemned.

Number 4 clause reads: "The Amateur is Friendly." I condemn Mr. Mulder's attitude as unfriendly and the present Constitution of the VK6 Division, barring Limited Class Licensees from full membership, as unfriendly, provocative and likely to cause unrest and schism within the Institute.

Number 5 clause reads: "The Amateur is Balanced." Mr. Mulder is biased against the Limited Class Licensee. The attitude is unbalanced and is unbecoming of a Ham and a gentleman.

I see nothing frightening in the prospect of Limited Class Licensees taking office in the Institute. In fact I can see nothing but good in the suggestion that they should do so. Why it can be imagined that Limited Class Licensees are not to be trusted in office because they can't read Morse or operate on the lower frequency bands, is completely beyond me. Such licensees are just as much Hams as their fellows on the lower frequency bands and discrimination against them is unjust and unwarranted in the extreme.

If friend Mr. Mulder had sat down and thought about the subject a little more, he would not have written in the vein that was published in June.

Tom Mulder would go up in the estimation of Hams if he would be big enough to withdraw his letter and apologise to the Limited Class Licensees.

—GORDON WEYNTON, VK3XU.

Editor "A.R." Dear Sir,

Being a Limited licensee, I would like to make a reply to Mr. Mulder's letter in June "A.R."

His main point is the assertion that Limited licensees are not interested in the h.f. bands. I don't know what the position in the other States is, but here in VK3, the Z boys I've worked, as well as myself, are still interested in 40 and 20 etc., and a number of them are working hard for the day when they may transmit on these bands. Working overseas countries, a thing very rarely done on v.h.f. bands, has a fascination all its own and most Amateurs get the DX bug at some stage of the game. Surey L.L.'s are no exception. L.L.'s regard the Limited ticket as a means to an end. Lack of time or some other reason prohibits some keen Associates from passing the Morse. They pass the theory and regs. OK (they are probably radio technicians) and so they take out a Limited. Then they may sit for the Morse at their leisure and not bother about the theory or regs. exams. Before, the Morse had to be passed within a year of passing the theory and regs. and if not the unfortunate student had to start all over again. This point, I think, does away with the possibility of having a Divisional Council, or an F.E., composed of L.A.O.C.P. holders. In time, most of the present L.A.O.C.P. holders will get their A.O.C.P. and if they don't, if as Mr. Mulder thinks, no full licensees (or very few, anyhow) are taken out, then ultimately there won't be anyone to use the lower frequencies and so the h.f. bands wouldn't matter anyhow.

I think a better way of looking at the matter is to regard the L.A.O.C.P. as an extra rung in the ladder leading to full Amateur status. Despite the fact that I am now a M.W.I.A., I don't regard myself as a full Amateur and I will not do so until I pass the Morse test and gain experience on the lower frequencies. New blood is coming into the Institute in the person of Z call holders and, of course, this is all to the good. By admitting a L.L. to full membership, the possibility of him joining the W.I.A. is much increased. If a L.L. could only join as an Associate (i.e. non-transmitting member), then, I for one would not be satisfied. The only alternative, as far as I can see, is to create a 3rd grade of membership, but this leads to administrative difficulties and can cause a type of "class distinction."

The Institute, in my opinion, has done the right thing in making L.L.'s full members—it is a privilege, and I am proud and happy to say that I am a full member of the W.I.A.

—DAVID RANKIN, VK3ZAG.

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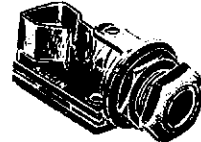
P 500

P500—Shielded Telephone Plug. Particularly suitable for Microphone connections where screening is important.



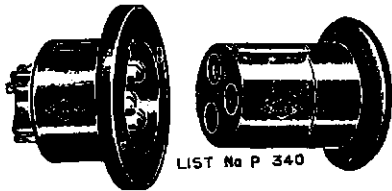
P38

P38—Miniature Telephone fitting standard Jacks. Ideal for Ham work, hospitals, schools, etc., where inter communication is required.



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J2 and J6—Standard Jacks for Headphones, Loudspeakers, and Microphones where miniaturisation is essential. J2 is an open circuit and J6 a closed circuit Jack, both of which will take P500 and P38 Plugs.



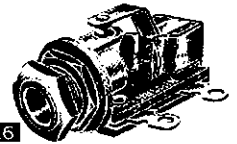
LIST No P 340

P340—This component is typical of a series of Mains Connectors in the Bulgin range. P340 consists of three poles and has a capacity of 3 amps. at 250v. or 6 amps. at 6v. and is an ideal chassis connector.



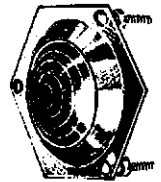
J13

J13—This is typical of the very wide range of Bulgin Panel Jacks offering numerous combinations of contacts. All contacts and switching leaves are of high grade nickel silver contacts. An outstanding feature of Bulgin Jacks is the high quality nickel and silver plating employed.

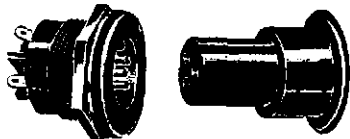


J6

D162—A typical example of the hundreds of types of signal bush fittings obtainable in the Bulgin range. Front Bezel is heavily chrome plated offering very attractive appearance. Stock colours are red, green, blue, amber and clear.

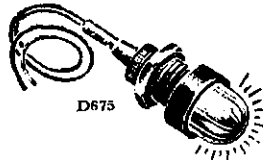


D162



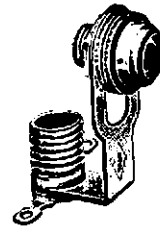
P360

P360—A miniature Mains Connector of 3 pins rated at 1.5 amps. at 250v. and 3 amps. at 6v. tested at 1kv. peak. All metal parts silver plated. Poles up to six also available.



D675

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EDITORIAL



CLOSING OUR RANKS

In response to Federal Executive's invitation to Divisions to provide "Guest Editorials," VK4 has entrusted the first contribution to the pen of one of its old timers, VK4HM.

Since its inception, Amateur Radio has experienced its difficulties and its triumphs. The difficulties have been overcome by the Amateur's tenacity of purpose and the unity and strength of the organisation representing his interests. The triumphs have not always received the recognition they deserved.

The assaults of non-co-operative nations, commercial interests and dissenters within the Amateur ranks have failed to wreck our organisation, due in the main to the energetic and tactful leadership of our Federal and Divisional Councillors, supported by loyal members of the rank and file.

Important and vital issues are at stake, particularly the fight for the retention of our existing frequency bands against the encroachment of commercial interests—now is the time to close our ranks. All Amateurs must present one solid front to meet the challenge of our adversary. We must prepare now to give full and ample support to our delegates at the next International conference.

Dr. Raymond Bowers, of the University of Rochester, U.S.A., has had this to say about Amateur Radio: "It is the means of communication with others on equal terms; of finding friendship, adventure, and prestige while seated at one's own fireside. In

picking his human contacts out of the air, the Amateur is not seen by them; he is not known by the clothes he wears, but by the signals he emits. He enters a new world whose qualifications for success are within his reach. There are no century old prejudices to impede his progress. He enters a thoroughly democratic world where he rises or falls by his own efforts. When he is a beginner, the radio elders help him; and when he becomes proficient, he will willingly help the younger generation. At the close of the day, filled with the monotonous routine of the machine age, he can find adventure, vicarious travel, prestige and friendship by throwing in the switch and pounding his signals on the air."

Reading such a statement should make us proud of the fact that we are members of the great fraternity of Radio Amateurs.

After refreshing your memory by re-reading the "Amateur's Code," you will surely agree that these ideals are worthy of preservation. Resolve to do your part to preserve the ideals so nobly inspired by the splendid pioneers of Amateur Radio.

Let's close the ranks and give of our best to achieve the progress and prosperity of our organisation—the Wireless Institute of Australia—by regularly attending meetings, supporting the Council and assisting all Amateurs, spreading the gospel of the "Amateur's Code" wherever possible.

FEDERAL EXECUTIVE.

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, 7146 Kc. and 2000 hours EST 50 and 144 Mc. No frequency checks available from VK2WI. Intrastate working frequency, 7125 Kc.

VK3WI: Sundays, 1130 hours EST, simultaneously on 3573 and 7146 Kc., 51.016 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 3580 and 14342 Kc. 3580 Kc. channel is used from 0915 hours to 1015 hours each Sunday for the W.I.A. Country hook-up. No frequency checks available.

VK5WI: Sundays, 1000 hours SAST, on 7146 Kc. Frequency checks are given by VK5MD and VK5WI by arrangements on all bands to 50 Mc.

VK6WI: Sundays, 0930 hours WAST, on 7146 Kc. No frequency checks available.

VK7WI: Sundays, at 1000 hours EST, on 7146 Kc and 146.5 Mc. No frequency checks are available.

THE CONTENTS

| | | | |
|--|----|--|----|
| 120 Watts of Audio Without Driving Power | 2 | Fifty Megacycles and Above | 19 |
| Let's Build a Tower | 5 | Book Review—New Zealand Amateur Call Book | 19 |
| A Practical Vacuum Tube Voltmeter | 7 | Amateur Call Signs | 20 |
| An Introduction to Two Metres | 10 | Ross Hull V.h.f. Contest Results Amendment | 20 |
| 6146 Beam Power Amplifier Data | 12 | DX Activity by VK3AHH | 21 |
| Victorian All Models Exhibition | 14 | Prediction Chart for August, 1955 | 21 |
| Remembrance Day Contest, Variation of Awards | 14 | Federal, QSL, and Divisional Notes | 23 |
| Amateur Radioteletype | 17 | Correspondence | 28 |

120 Watts of Audio Without Driving Power*

CLASS AB1 MODULATOR WITH 6146s

BY GEORGE GRAMMER, W1DF

THE rather interesting capabilities of the 6146 as a Class AB1 audio amplifier do not seem to have attracted much attention in Amateur circles, although it is a fact that a pair of tubes is capable of delivering practically the same audio power in AB1 as in AB2. Either way, it is possible to get enough power to modulate a Class C input of a quarter kilowatt. When a choice is available, it is hardly likely that anyone would select AB2, with its driver regulation problems, in preference to AB1—especially when no-driving-power operation usually means that one less speech amplifier stage will be needed for the same over-all gain.

The modulator uses a pair of the tubes in AB1 and, with the exception of the preamplifier unit (which could easily have been included on the same chassis if it had been desired) is complete with power and bias supplies on a 7 x 17 x 3 inch chassis. The preamplifier was deliberately made into a separate unit in the thought that, while it is highly desirable to have the microphone input and gain control within easy reach at the operating position, there is no reason at all why the rest of the audio equipment should be in the same vicinity. The modulator and power supply have no controls that need be manipulated, nor do any of the tubes or components require watching during transmitting periods. This section can simply be tucked away in some spot where it will not take up room that might be used more profitably for other purposes.

The modulator power supply unit includes one stage of speech amplification, and also is equipped with a splatter filter and an audio take-off for 'scope monitoring. It is easy to build in the latter two at the start, but somewhat messy to add them externally after it becomes appreciated that they should be classed as necessities rather than accessories.

TUBE CAPABILITIES

The audio power that can be obtained from a pair of tubes is, of course, a function of the plate voltage used on them. The following table is illustrative:

| Plate Voltage | Power Output | Plate-to-Plate Load Resistance |
|---------------|--------------|--------------------------------|
| 500 volts | 84 watts | 4,200 ohms |
| 600 volts | 104 watts | 5,200 ohms |
| 750 volts | 134 watts | 6,700 ohms |

The power output figures are calculated from data taken from the published tube curves, using a screen voltage of 200, and the actual outputs will be somewhat lower because of losses in the output transformer. These "theoretical" output figures cannot be compared directly with those given by the tube manufacturers in tables of typical operating conditions, partly be-

* Reprinted from "QST," December, 1954.

• Unlike most tubes, the 6146 will develop almost as much power output without driving power as with it. This article describes a complete modulator unit that takes advantage of this characteristic. Various power levels can be obtained, depending on the choice of power supply components.

The modulator includes a splatter filter, made from inexpensive components, that can be applied to practically any phone transmitter where the Class C plate current does not exceed about 300 Ma.

The first two stages of speech amplification are built into a small box that may be used at the operating position while the main chassis is installed in any convenient location.

cause of somewhat different choice of load resistance and partly because the manufacturers' figures usually are based on the fundamental-frequency component of power output, with distortion components given separately as a percentage.

The figures in the table above are more properly described as the average power in a sine wave having the same instantaneous power at the peak of an a.f. cycle as the waveshape actually considered—or, for short, "equivalent sine-wave power output." Since it is the peak power that counts in determining the modulation percentage, and all our discussions of modulator power use this same "equivalent sine-wave power" as a basis, we believe this kind of figure to be more useful in modulation calculations with voice waveforms.

Suitable sets of components for all three of the voltages listed above are readily available, so the power level can be selected to suit the Class C amplifier to be modulated. For purposes of estimating, measurements have shown that the actual power outputs to be expected are approximately 75, 95, and 120 watts for the 500, 600 and 750 volt conditions, respectively.

THE PREAMPLIFIER

The preamplifier circuit, shown in Fig. 1, is built in a 2 x 4 x 4 inch aluminum box. It uses a 12AX7 for two resistance-coupled triode stages. The circuit is quite straightforward, except for the fact that a 0.003 uF. condenser is used for coupling between the first and second stages. The object of this is to help taper the low frequency response for more effective speech work. Comparatively, the time constant of the input grid circuit seems quite large, but the effective resistance from grid to

cathode is much lower than the 2.2 megohm resistor would indicate because of the flow of "initial velocity" electrons in this circuit. This current flow provides the operating bias of about 1 volt. (It should not be confused with the grid current that results from rectification of an applied signal; there is no rectification of the latter type in this case.)

The 12AX7 is mounted on a small bracket fastened to one removable side of the box. With the exception of the microphone connector and gain control, which are on one edge of the box, and the connector, J2, on the opposite edge, all components are on this same plate, mounted between appropriate tube socket pins and tie point strips. Enough lead length is allowed from the components on the box itself to permit taking off the plate to get at the wiring. Rubber feet are mounted on the other removable side of the box, which becomes the bottom when unit is in use.

The preamplifier is connected to the modulator through a 10-foot length of cable, having one shielded and two unshielded conductors. The shielded wire, connected to Pin 3 of J2 in Fig. 1, is used for the audio output. The shield is the common ground connection through the cable. One of the other two wires is used for plate current and the last for filament current. The shielded wire in this length of cable has a capacitance of about 500 pF., and since this capacitance shunts the output circuit there is considerable reduction

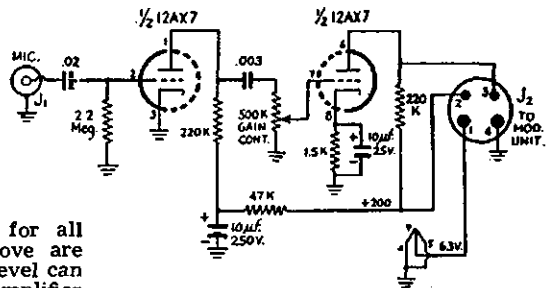


Fig. 1.—Preamplifier circuit. Fixed resistors are $\frac{1}{2}$ watt. Capacitances in uF. J1—Microphone connector. J2—Four-prong connector, chassis mount, male.

of high frequency response in the cable—about 4 db. per octave above 1,000 cycles. This is compensated for in the modulator unit.

MODULATOR AND POWER SUPPLY

The circuit diagram of the modulator and power supply section is given in Fig. 2. The "high-boost" circuit, consisting of the two resistors and 270 pF. condenser associated with the grid of the 6C4 speech amplifier, compensates for the drop in highs in the cable coming from the preamplifier. Since low frequency attenuation is desirable, an inexpensive interstage audio transform-

er is used for coupling the speech amplifier and modulator. The modulation transformer is a multimatch type delivering output to the load through a splatter filter, about which more later.

The three 1 megohm resistors form a voltage divider for delivering about one-third of the total audio output voltage direct to the horizontal plates of a monitoring 'scope for forming a trapezoidal pattern without amplifiers in the 'scope. The resistor values can be varied, if necessary, to secure the proper pattern width, although the total resistance should be maintained in the neighborhood of 3 megohms for a 0.005 uF. coupling condenser. This condenser should have a voltage rating equal to at least twice the d.c. plate voltage on the modulated amplifier; 6,000 volt paper condensers in this capacitance are readily available and inexpensive.

Plate power for all tubes is supplied from one transformer. A single section choke-input filter is used for the high voltage applied to the plates of the 6146s. This is dropped through a resistor and a pair of VR105s (OC3) in series to provide a regulated voltage of 210 for the 6146 screens. This voltage also is applied to the plate of the 6C4 speech amplifier and, with further filtering by the 4,700 ohm resistor and 8 uF. condenser, to the preamplifier tube plates through pin 2 of J3. The dropping resistor, R2, should be adjusted to approximately 5,000 ohms with a 500 volt supply, 7,000 ohms for 600 volts, and 10,000 ohms for 750 volts. This adjustment can be checked when the modulator is in operation by observing whether the VR tubes go out on voice peaks. Enough current should be bled through the regulators so that they stay ignited at all voice levels.

A pair of terminals is provided for connecting a milliammeter in series with the plate lead to the 6146s. The meter itself can be placed in any convenient spot. If it is not used, a jumper must be connected across the terminals. This circuit is fused to protect the meter.

The bias supply uses a small filament transformer, T4, operating from the regular filament transformer, T3, to provide 115 volts for the bias rectifier and filter. Bias is adjusted to the proper value by means of R1. This supply does not have to be "stiff" since no rectified grid current flows through it in normal Class AB1 operation, but the resistance should be moderately low. If too much resistance is used in R1, occasional peaks that do go into the grid current region will cause a temporary change in bias through charging the bias filter condenser which then cannot discharge rapidly enough through R1. The values indicated have worked out well in practice.

Separate a.c. input connectors are used for the filament and plate supplies; when S1 and S2 are closed these can be controlled by remote switches. The bias supply goes on with the filaments, and since there is no time lag in the selenium rectifier the 6146s are always protected.

CLIPPING AND FILTERING

A high-level splatter filter can be built from parts that can be obtained quite inexpensively from practically any supply house that handles service components. The cost of the one incorporated in this modulator is only a little over three dollars.

The application of the filter is based on principles outlined in "QST" some time ago.[†] In brief, its purpose is to suppress audio components beyond about 3 Kc. in the modulator output, particularly those generated by clipping that may take place, either intentionally or unintentionally, in the modulator. The legitimate high frequency components of the average voice are seldom of any real consequence in causing unnecessary interference; the bothersome "splatter" is practically always the result of clipping, either in the modulator because of insufficient power output capability or overdriving, or in the Class C modulated stage itself. In the latter stage, the usual cause is overmodulation on down peaks, but improper operating conditions resulting in poor linearity also will result in splatter. No splatter filter can overcome imperfections in the Class C stage, nor can it compensate for the clipping that takes place when the plate voltage "hits bottom" on the down peaks of modulation.

In other words, the first step in splatter elimination is to adjust the modulated Class C amplifier for good linearity—that is, make sure that it is really capable of 100 per cent. modulation. Next, steps must be taken to ensure that the applied modulation cannot exceed 100 per cent. in the downward direction; this is the function of clipping. With a Class AB1 modulator the clipping can take place either in the

plate circuit, by adjustment of the load resistance as described by Bruene,[†] or in the grid circuit by driving the modulator grids positive during the peak of the audio cycle. When the modulator grids are driven positive by a Class A voltage amplifier such as the 6C4 in this unit, the clipping is quite effective because of the poor voltage regulation of the driver when it is called upon to deliver power. Preferably, the modulator load resistance should be adjusted so that clipping in the plate circuit occurs simultaneously with clipping in the grid circuit, since if clipping occurs in one circuit before the other, the power output is reduced below the maximum obtainable. However, the loss in output is negligible if the load resistance does not depart more than 10 per cent. from the optimum value, so exact adjustment is not really necessary.

In practice, grid current clipping is likely to predominate, and the output amplitude will almost automatically be at the right level if the Class C plate input is adjusted to be at least twice the audio output of the modulator (assuming the modulator load resistance is near the optimum value). The system should be adjusted so that clipping occurs at a modulation level of 90 to 95 per cent; this ensures that the clipping will be done only in the modulator and not in the modulated amplifier where the splatter filter can do nothing about it.

This modulator was not designed particularly for intentional clipping,

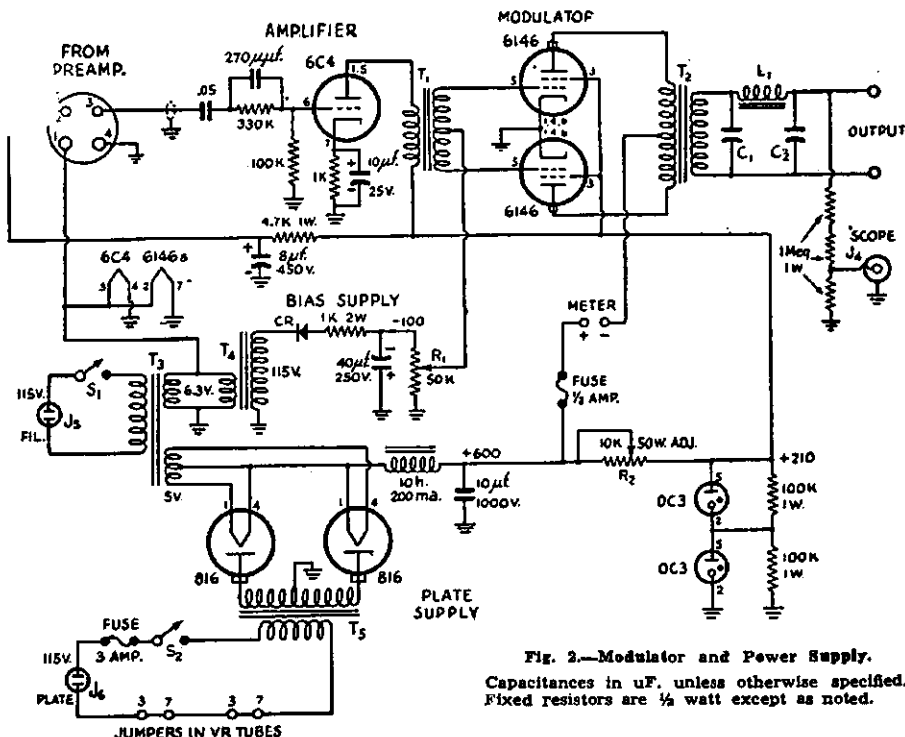


Fig. 2.—Modulator and Power Supply.

Capacitances in uF. unless otherwise specified. Fixed resistors are 1/2 watt except as noted.

- C1, C2—1,600 volt paper. See Fig. 3 for values.
- R1—50,000 potentiometer, preferably wire wound (bias control).
- R2—10,000 ohms, 50 watts, adjustable.
- L1—See Fig. 3 and Table 1 for values.
- CR—Selenium rectifier, 20 Ma. or larger, for 115 volt operation.
- J3—Four-prong connector, chassis mounting, female.
- J4—Phono connector.
- J5, J6—Male connector, chassis mounting.

- S1, S2—S.p.s.t. toggle switch.
- T1—Interstage audio, ratio 3:1, push-pull secondary.
- T2—Multimatch modulation transformer.
- T3—Filament transformer, 6.3 volts at 6 amp., 5 volts at 3 amp.
- T4—Filament transformer, 6.3 volts at 1/2 amp.
- T5—Plate transformer. For 800 volts d.c.: 1,255 v. c.t., 310 Ma.; for 600 volts d.c.: 1,455 v. c.t., 310 Ma.; for 750 volts d.c.: 1,780 v. c.t., 310 Ma.

although there is nothing to prevent its being used that way to the degree permitted by the signal-handling capability of the circuits up to the grid of the 6C4. However, clipping is bound to occur in any modulation system unless special means, such as automatic gain control, are included for preventing it. Lacking such means, steps should be taken to prevent clipping from causing splatter. A splatter filter, plus the adjustment precautions outlined above, will do a good job of keeping the transmitted signal clean.

FILTER DESIGN

The filter used in this modulator is a simple one of the constant-k type. The inductance and capacitance required will depend on the Class C load resistance and therefore cannot be given in a single specification. The chart of Fig. 3 gives the design values for various loads from 1,000 to 10,000 ohms, for three cut-off frequencies, 2,500, 3,000 and 3,500 cycles. While a cut-off frequency of 3,000 cycles is probably optimum, the additional curves are given for the purpose of estimating the effect of having to use available values of components, particularly fixed condensers. For example, if the Class C load resistance (plate voltage divided by plate current in amperes) is 4,000 ohms, the chart shows that approximately 0.012 μ F. should be used at C1 and C2. The nearest standard value in a single unit is 0.01 μ F., and the chart shows that this is the proper value for a cut-off frequency of 3,500 cycles. The inductance could be chosen accordingly (0.5 henry, from the chart) or, as an alternative, 0.01 and 0.002 units could be connected in parallel. Neither approach is quite as clean-cut as it sounds, in view of the fairly large capacitance tolerances that are usually associated with paper condensers. The ideal method would be to measure the capacitances and pad them out to the correct values, and if the facilities are available to do this it is a recommended procedure. However, even quite wide departures from the theoretically correct values do not greatly affect the performance from a practical standpoint—that is, in the way the transmitter sounds or in the suppression of splatter. A reasonable procedure, therefore, is to pick out a standard value of capacitance that lies somewhere on the load resistance line between the 2,500 and 3,500 cycle curves.

It will seldom be possible to find an iron-cored choke having exactly the required inductance. However, it is easy to modify a "television" power supply filter choke for the purpose. These usually have ratings from 1 to 2 henrys at 200 or 300 Ma. Measurements on a "1 henry 300 Ma." choke of this type showed its inductance to be about 1.9 henry, without d.c. and with small applied a.c. voltage. Removing the entire stack of I laminations reduced the inductance to 0.53 henry. Calculations based on the total resistance and the wire size (No. 28) showed that the choke had about 22 layers, so 7 of these were unwound and the inductance was then measured with various air gaps, using paper and cardboard spacers. The measured values are shown in Table 1.

In the course of making measurements it was found that the presence of the "finishing" laminations that overlap

| Air Gap inch | Inductance henry |
|-----------------|---------------------|
| 0.003 | 0.71 |
| 0.010 | 0.62 |
| 0.020 | 0.48 |
| 0.025 | 0.46 |
| 0.050 | 0.36 |
| 0.075 | 0.31 |
| 0.100 | 0.28 |
| 0.125 | 0.26 |
| 0.150 | 0.24 |

the I sections on each side of the core had a very marked effect on the inductance and Q. These end pieces cause a pronounced increase in inductance for a given air gap, as compared with the inductance when the end pieces are not assembled with the regular core pieces. They also reduce the Q of the coil to less than half the value obtained when they are not used, presumably because of flux concentration in the small cross section of the overlapping part. They were therefore not used in making the measurements in Table 1, nor in reassembling the choke, the whole works being held together by clamps made from tempered Presdwood. The Presdwood mounting also serves to insulate the core from the chassis, which should increase the coil-to-chassis break-down voltage.

Table 1 shows that for air gaps above 0.020 inch, the inductance changes fairly slowly with the thickness of the gap, so in this range—roughly 0.25 to 0.5 henry—this particular type of choke as modified can easily be adjusted to any value required for Class C loads ranging

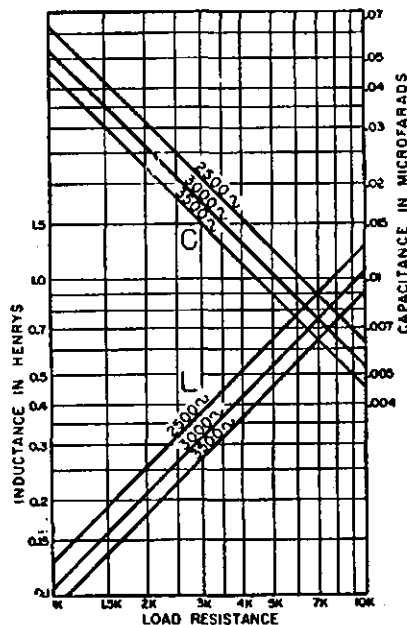


Fig. 3—Splatter Filter Design Chart. Values should be taken from L and C curves marked with the same cut-off frequency.

from 2,000 to over 5,000 ohms. This covers most of the practical cases. Measurement of the inductance is desirable but not necessary if the thickness of the spacer used in the air gap can be measured with moderate accuracy.

The inductance of a choke varies with the a.c. voltage applied to it as well as the direct current flowing through it. Because of the rather large air gap that is used in this application, the d.c. component is of practically no consequence. Checks showed, however, that the inductance increased about 15 per cent. at a.c. levels representative of full audio output from the modulator as compared with bridge measurements made with a low voltage source. An allowance of this order can be made in determining the proper air gap. The figures in Table 1 are based on bridge measurements of inductance.

PERFORMANCE DATA

The over-all frequency response of the system including the splatter filter is such as to tend to emphasize those frequency components that contribute most to effective speech transmission, without sacrificing that nebulous thing called "satisfactory quality." Judged by listening tests, the balance between highs and lows is quite satisfactory; also, there is no difficulty in identifying sibilant sounds such as "s" and "f" which often become indistinguishable when the highs are cut too much. The response curve is essentially flat (within ± 2 db.) between 350 and 2,800 cycles with the components and values given in the diagrams, and using a splatter filter designed for working into a 5,000 ohm load (measured values, 0.47 henry and 0.01 μ F.). Compared with the level at a 1,000 cycle reference, the response is down 6 db. at 200 cycles and 12 db. at 100 cycles. At 3,000 cycles the response is down 4 db. below the same reference, and drops at a uniform rate of 20 db. per octave above 3,000 cycles.

Practically all of the attenuation at the high frequency end is in the splatter filter. The modulator and speech amplifier are intentionally cut only at the low end and the response stays fairly uniform out to 5,000 or 6,000 cycles. On the premise that the frequency components that cause splatter will practically always be generated in the modulator or Class C amplifier, as discussed earlier, the ones generated in the modulator obviously have to be suppressed between the modulator and Class C amplifier. Reduction of high frequency response elsewhere in the audio system accomplishes little or no splatter reduction—since the legitimate high frequency components in the ordinary voice are of low amplitude—and simply causes a loss of intelligibility and naturalness. In other words, there is no point in cutting the high end unless it is done in a splatter filter, located in the right spot to catch not only the legitimate components outside the needed band, but also the spurious components.

The measured power outputs at various voltages were mentioned earlier. The power supply filtering, plus low frequency cutting, result in a hum level that is largely masked by the first stage noise, without voice input and gain at maximum. At maximum output with a pure tone signal the hum increases be-

(Continued on Page 14)

LET'S BUILD A TOWER

BY JOHN HARLOCK,* VK6GU

The writer, like a lot of other Amateurs, has always looked with admiration and envy at a well constructed rotatable multi-element array. Particularly when the beam is mounted on a solidly built tower.

Like other Amateurs he, too, has heard stories about a VK6 who was given 10/- to remove a windmill tower, "Carriage Paid," but personally has found such bargains more elusive than rare DX.

After moving to his present QTH, he, by virtue of lack of space, was compelled to erect some type of beam. Obviously a beam must go somewhere up in the air. The problem was how to keep it there. The first solution was a 30 ft. length of water pipe. This was found to be quite satisfactory till winter gales caused one side of the quarter wave matching section to break away from one side of the driven element.

Now the problem of repairing this damage presented itself. Obviously if a sky hook had been available, this would have been used for keeping the beam in the air. So the problem meant lowering the whole structure or climbing up and effecting repairs.

The average Amateur must perforce be a man of many parts, but as steeple jacking does not enter into the writer's make-up, the whole assembly was laboriously lowered, repairs effected and the gang once more asked to assist in hanging the sky wire.

Isn't it amazing the number of excuses even one's best friends can think up at a time like this?

Again the problem of keeping the beam some distance from the ground had to be faced. Also, that best of teachers—experience—whispered loudly "this time you must be able to climb up to the works. No more lowering and raising!" What then? A tower!

As has been pointed out, a windmill tower in good condition was practically impossible to obtain. Well, why not

build one? But from what material? Angle iron? A little hard to work, but worth a try.

Investigation into cost and availability ruled this out.

One thing left—timber. Once more the bugbear of finance reared its ugly head and put imported, easy-to-work soft wood in the untouchable class along with angle iron.

In VK6 there are two alternatives remaining, both local eucalypt hardwoods, jarrah (*eucalyptus marginata*) and karri (*E. diversicolor*). Of the two, karri is more readily available in long lengths, is less liable to warp, stronger and is much the same price as jarrah, but more liable to white ant attack if "earthed."

Karri was selected and the design arranged to keep it above ground.

A 42 ft. high, 4 ft. base and 6 inch top square pyramid structure was decided upon, the design of each side being as in Fig. 1. A careful scale drawing was made and quantities calculated so that the timber could be ordered with a view to minimum wastage. Each leg comprises three pieces each 14 feet long of 2" x 2" bolted together as in Fig. 2. The lattice bracings are of 2" x 1", lengths being ordered so that offcuts from the lower braces could be used higher up, and also as the plates for joining the leg sections.

The timber was ordered and duly arrived, and after the now enthusiastic amateur carpenter had worn himself out carrying home large parcels of iron nails and bolts, some well meaning friend told him just what karri can do to unprotected iron. Galvanised bolts were advised, but were unprocurable.

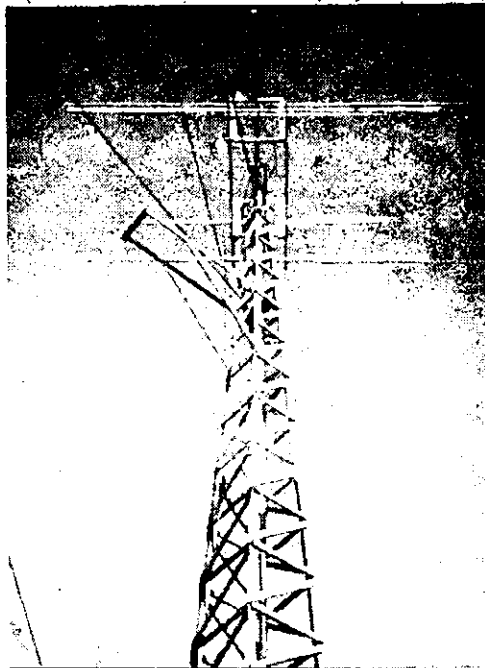
The services of a chemically-minded friend (at the time A.O.C.P. failed, now happily one of the gang) were availed of and the 32 iron bolts for the legs were hot-dip galvanised, amid splashing molten zinc, powdered charcoal and fumes of sal-ammoniac. The latter two to prevent the formation of oxide scum.

A humorous sidelight on this procedure occurred when the galvanising adviser, eagerly awaiting a much-needed cup of brew (to be prepared by the writer) caught the latter in the act of putting powdered sal-ammoniac into the teacups instead of sugar. The moral seems to be to drink a different type of brew, whose bitter taste needs no sugar to disguise it.

The alternative to nails turned out to be 2½" galvanised round-headed screws, available cheaply at the time. 18 lbs. in all were bought. The holes were drilled and the seven hundred odd screws driven home. Oh! My aching back! A screwdriver bit in the brace simplified screwing, but all holes had to hand drilled twice (shank and thread of screw) as an electric drill could not be begged, borrowed, or stolen.

Bolts were not considered because of the possible weakening effect, also hand galvanising of some 700 bolts could not be thought of.

Nails were used only to hold the lattice bracings in position before screwing.



CONSTRUCTION

The four legs were bolted together. One side was carefully laid out on the ground, the braces (21 horizontal and 21 diagonal) were temporarily nailed in to position, then screwed (each with four screws). It must be stressed here that great care be taken with the "prototype" if satisfactory results are to be obtained.

Who was the VK6 who obtained plans from the writer and was heard to tell another VK6 that one side was 4" bigger than the other three?

The opposite side was assembled using the first side as a template, the two completed sides turned on edge and the bracing struts for the third side nailed and then screwed down. The whole assembly was then inverted (like other jobs it got heavier as it went along, possibly a little more so) and the tower finished. Cross braces were put at the 10, 20 and 30 foot levels to prevent twist in the tower. See Fig. 3.

FIG 3

PLAN AT
10', 20' & 30'
LEVELS



In the meantime, some 2" x 2" x ¾" angle iron (four pieces each about 5 ft. long) cement, bluemetal and sand (yes, sand, in VK6 sand-groper land, it's a scarce commodity in Fremantle which is built on limestone) were obtained by diverse means for very little cost.

The station wagon of the aforesaid chemically-minded friend, the smallest station wagon in the VK6 Division, did admirable service in transporting these necessities.

The Fremantle limestone makes an excellent foundation for a structure of this type, but did not improve either the writer's back or his temper when he endeavoured to dig holes in it. The holes were 3 ft. 6 in. deep (18" being in stone) and 1 ft. 6 in. square. Finally angle iron was bolted to the bottoms of

(Continued on Page 14)

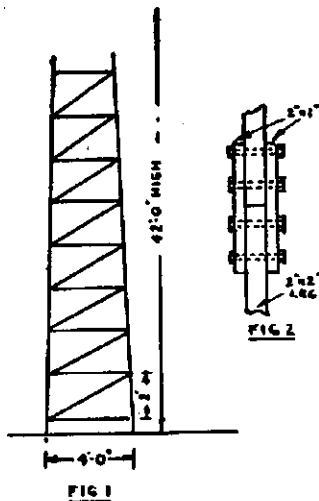


FIG 1

FIG 2

* 15 Lilly Street, South Fremantle, W.A.

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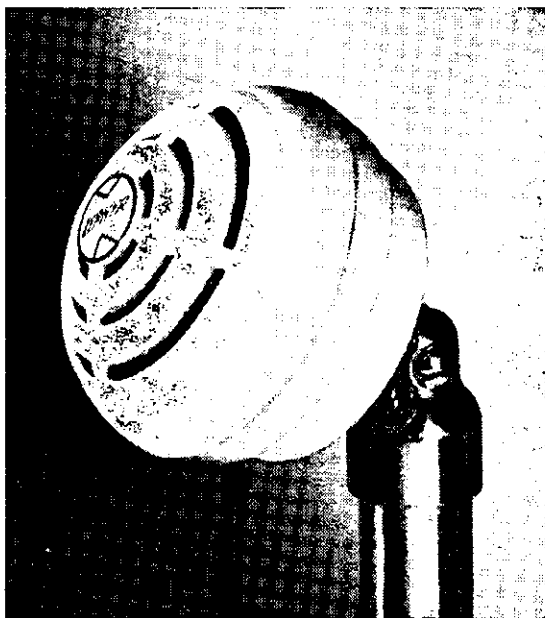
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A Practical Vacuum Tube Voltmeter

BY JOHN MILLER,* VK2ANF

SOME years ago there appeared in "QST" an excellent article by McMurdo Silver, in which he described a V.T.V.M. which has become the basis of practically all current designs. Subsequently a series of three articles in "A.R." covered the same ground but dealing with some modifications to suit locally available parts. Despite the interest shown at the time and the extreme versatility of the instrument, very few have been constructed by Amateurs. Those few who have built them are loud in their praise for what constitutes a universal tool for the shack, test bench or laboratory.

It is probable that the complexity of the de luxe instrument has deterred many would-be constructors. The V.T.V.M. here described is an attempt to overcome these complexities without seriously detracting from the versatility of the instrument or adversely affecting the stability and accuracy achieved in the original instrument. The present design is also very much smaller.

The basic principles of the present instrument are the same as those of the larger de luxe model and the reader is referred to the previously mentioned articles for a discussion of the theory behind the design.

The basis of the V.T.V.M. is a balanced electronic bridge consisting of two triodes plus a sensitive meter to read the out of balance current. The use of the balanced circuit allows wide power supply voltage variations without shifting the meter zero, the instrument therefore being free from drift.

In the McMurdo Silver V.T.V.M. the first twin triode acted as the bridge and was run at very low plate voltage. This, whilst having considerable advantage in reducing the effects of gas current, means that very small changes in plate current result from the application of changing voltages to the grid. Thus, there is not sufficient current available to operate the meter, so a second twin triode stage was used to act as d.c. amplifier or meter actuating tube, allowing the use of a relatively insensitive meter.

The present design overcomes the need for a second stage with all the attendant complications. Four things are done to overcome the need for a d.c. amplifier.

1. The plate voltage of the bridge tube is increased.
2. A more sensitive meter is used.
3. The total resistance between grid and ground is reduced.
4. The heater voltage of the twin triode is reduced.

Experiments with increased plate voltage showed that no appreciable change took place in gas current effects provided the input resistance was lowered. Originally, the de luxe instrument had a maximum resistance of 40 megohms between grid and ground. This is unnecessarily high for most work so that the more conventional input resist-

ance of 11 megohms is used, with a consequent decrease in grid current effects.

A further improvement is effected by reducing the cathode temperature of the bridge tubes by a reduction in heater voltage to approx. 4.5v. This allows the plate voltage to be increased to a point where sufficient plate current change is available to operate a microammeter. The use of a 0-100 microamp. meter is no particular disadvantage as the extra cost is more than saved by the reduction in components brought about by omitting the meter actuating tube. Meter manufacturers advise that down to 100 microamps. f.s.d. the ruggedness and reliability of a meter does not materially deteriorate.

It may be seen then that the only disadvantage shown by this design is the very slight one of reduced input resistance, and as already pointed out, this is not at all serious for general work. If, however, the need should ever arise for a very high input resistance, it may be readily achieved by adding multiplier resistances to the probe. Thus a x5 multiplier gives a total input resistance of 55 megohms for a f.s.d. of 7.5v. For most work, the 11 megohm input resistance is ample.

In the interests of simplicity, the d.c. current ranges were dropped from the present design, the standard multimeter being the most useful for measurement of current. Also the multiplier

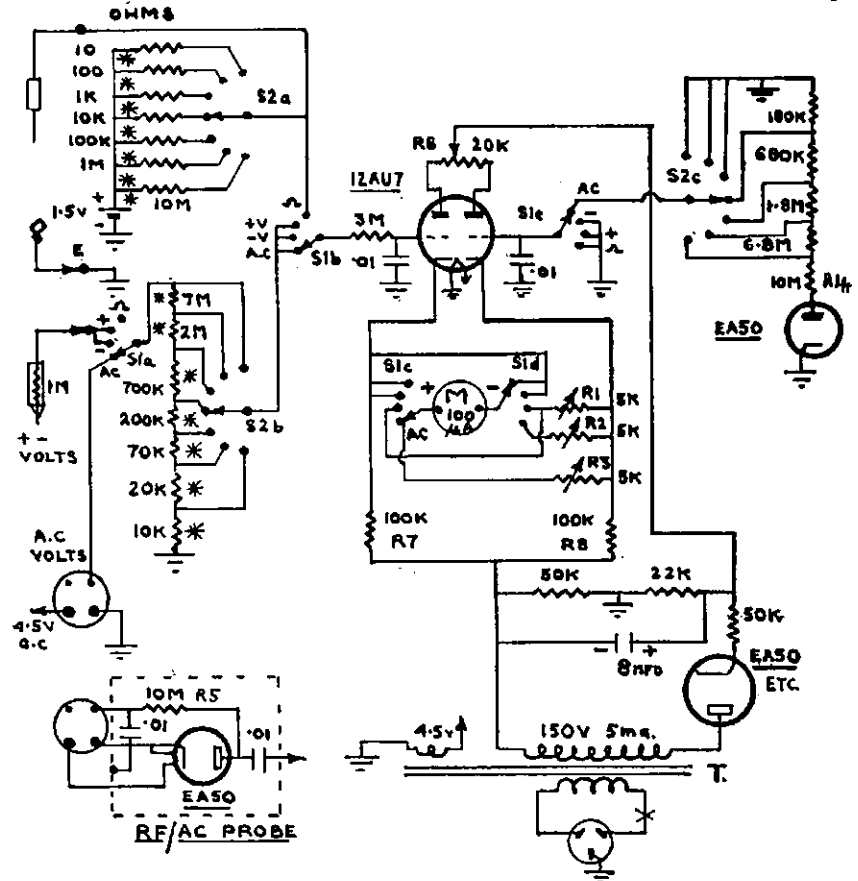


Fig. 1.—Schematic of V.T.V.M.

All resistors marked * are of low tolerance (1% or better).

R7 and R8 need not be 1% types, but should be equal in value to maintain a balance in the meter circuit.

R4 should be adjusted in value to give a balance (zero) on the a.c. volts range, 1.5v.

R5 may need to be smaller in order to obtain sufficient deflection of the meter when measuring a.c. voltage. It should, however, be kept as high as possible. Changes in the value of R5 will require a change in the value of R4 to maintain balance.

The potentiometers R1, R2, and R3 are the calibration controls. Only one, R2, should be brought to the front panel. R1 is "d.c. volts" calibration, R2 is the "ohms zero" set, R3 is the "a.c. volts" calibration.

R8 is used to balance the bridge, i.e. zero the meter, and is mounted on the front panel.

S1a-e is the function switch, 3 pole 4 position 3 bank.

S2a-c is the range switch, single pole 7 position (or 12 position) 3 bank.

S1 and S2 may be of the ordinary Oak type bakelite wafer switches.

T is the power transformer, shown as 150v. at 5 Ma. This will probably have to be a 150v./150v. 30 Ma. type, using only one half of the secondary. The 4.5v. required will therefore require a dropping resistor from 6.3v. as explained in the text.

The meter M should be as large as possible and scaled 0-15 and 0-5 with the added ohms scale according to Table 1.

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terminals and resistances were omitted, the existing ranges covering all voltages liable to be encountered.

No special switches are required. In the larger instrument, the use of a very high resistance stick in the voltage divider dictated the use of low loss ceramic switches, however with only a total of 11 megohms in the resistance stick, ordinary bakelite wafer switches are quite in order.

Further simplification results from the use of single 1/2 watt resistors in the voltage dividers. These may be high stability 1% tolerance types or they may be selected for low tolerance. The size of the constructor's pocket will probably decide the issue!

CIRCUIT DETAILS

The circuit diagram of the V.T.V.M. is shown in Fig. 1. The 12AU7 acts as the balanced bridge tube, the voltages to be measured being applied to the grid of the left hand triode. D.c. voltage ranges are provided by switching up and down the voltage divider, which has a total resistance of 10 megohms. A 1 megohm resistor is housed in the probe to act as an isolating resistance so that circuit constants are not upset by application of the probe.

Switching the function switch to "Ohms" provides a very convenient set of resistance ranges in decade fashion with centre scale readings ranging from 10 ohms to 10 megohms. A.c. and r.f. voltages require the use of the external probe. Here again a change was made in the design compared to the original instrument.

By the use of a ceramic coupling condenser of 0.01 uF., the probe becomes suitable for both low frequency a.c. measurements and r.f. measurements. The inductance of these condensers is

low so that error on r.f. measurement is kept low, whilst the capacity is sufficiently high to prevent any error due to capacitive reactance at low frequencies. It is possible that the single condenser may be running close to the wind on very high voltages, but no trouble has been experienced to date. The use of germanium diodes in the probe was considered but discarded due to the low inverse peak voltage permitted with such rectifiers. However, for measurement of fairly small voltages (25v. or so) the germanium diodes would probably give more accurate readings at fairly high radio frequencies.

No "A.c. Zero" control is fitted as it was found quite in order to adjust the series resistance in the balancing diode and leave it set. In any case, due to the high resistances in use, an a.c. zero control would require a fairly high resistance potentiometer which might be hard to obtain.

The power supply is simple as there are no voltages to be obtained for a meter actuating tube. The rectifier may be a half wave selenium type, or as shown, some small diode such as another EA50 or 6H6, etc. The 150 volt 30 Ma. transformer may be replaced by something smaller if facilities for making transformers are available. The secondary, which is not centre tapped, is only called on to supply about 5 Ma., so the 30 Ma. winding is much larger than required. The heater voltage may be obtained from a 5v. winding if the transformer has one, or a series resistor may be used to drop the voltage to somewhere between 4 and 5 volts. The exact voltage is not at all critical.

value, however, will only be correct when measuring pure sine waves. Peak to peak values will be 2.8 times the r.m.s. reading as shown by the meter, and will be correct. To illustrate this, assume the voltage shows 10v. on the meter, this is the r.m.s. voltage of a pure sine wave, but the same reading on a short duration pulse waveform is not the true r.m.s. value. However, in each case, the peak to peak value of 28 volts is correct.

No calibration is required on the ohm ranges, setting the "Ohms Adj." to full scale accomplishes this. Note that the meter is forward reading for ohms. The meter scale may be graduated in ohms by the use of Table 1. Alternatively, it may be possible to obtain a scale suitably calibrated, as at least one popular commercial instrument uses the same scaling. Other scalings may be used by suitable alteration of the voltage divider stick, but the ones shown are very convenient. Table 2 shows the full set of ranges available.

CONSTRUCTION

The instrument may be housed in quite a small space, which is a decided advantage not possessed by the McMurdo Silver V.T.V.M. This allows moving the meter to the job rather than bringing the job to the meter! The prototype was housed in a case 6" x 6" x 6"; a commercially made case and panel is available in this size.

No actual layout is suggested as this is not critical, the only points to be watched being the mounting of the resistors for the various ranges and the location of the grid by-pass condensers.

OHMS CALIBRATION

| Ohms Volts | Ohms | Volts | Ohms | Volts | |
|------------|-------|-------|-------|-------|-----|
| 0.5 | 24 | 8.5 | 230 | 35 | 389 |
| 1.0 | 45.5 | 9.0 | 237 | 40 | 400 |
| 1.5 | 65 | 9.5 | 243.5 | 45 | 408 |
| 2.0 | 83.5 | 10 | 250 | 50 | 417 |
| 2.5 | 100 | 11 | 262 | 60 | 428 |
| 3.0 | 115.5 | 12 | 272.5 | 70 | 438 |
| 3.5 | 130 | 13 | 282.5 | 80 | 444 |
| 4.0 | 143 | 14 | 291.5 | 90 | 450 |
| 4.5 | 155 | 15 | 300 | 100 | 455 |
| 5.0 | 166.5 | 16 | 309 | 200 | 476 |
| 5.5 | 177.5 | 17 | 315 | 300 | 484 |
| 6.0 | 187.5 | 18 | 321 | 400 | 488 |
| 6.5 | 197 | 19 | 327.5 | 500 | 490 |
| 7.0 | 206 | 20 | 333.5 | 1000 | 495 |
| 7.5 | 214 | 25 | 356 | Inf. | 500 |
| 8.0 | 222 | 30 | 375 | | |

Table 1.

The figures in the OHMS column are marked above the appropriate points on the voltage scale, as given by the VOLTS column. The resultant scale of ohms represents the OHMS x1 range. Any convenient full scale voltage figure may be chosen to work out the ohms scale, the one above being 500. The formula from which the above table was prepared is—

$$M = \frac{FSD \times R}{r + R}$$

Where

M is the meter reading in volts.

FSD is the chosen scale deflection (e.g. 500 as in above Table).

R is unknown or external resistance being calibrated.

r is internal resistance selected by range selector (e.g. for ohms x1 the internal resistance is 10 ohms).

TABLE OF RANGES

| Function Switch | Range Switch Positions | | | | | | |
|--------------------------|------------------------|-----|------|------|-------|--------|---------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | Full Scale Readings | | | | | | |
| Volts A.C. | 1.5 | 5 | 15 | 50 | 150 | 500 | 1,500 |
| Volts D.C. — | | | | | | | |
| Volts D.C. + | | | | | | | |
| Ohms | x1 | x10 | x100 | x1k | x10k | x100k | x1meg |
| Full Scale Reading | 1k | 10k | 100k | 1meg | 10meg | 100meg | 1000meg |
| Half Scale Reading | 10 | 100 | 1k | 10k | 100k | 1meg | 10meg |

Table 2.

* Switch Labels.

CALIBRATION

Once having got the instrument ready for action, first switch the function switch to d.c. volts, either positive or negative. Now apply a fresh 1.5v. torch cell between the probe and earth and adjust the d.c.v. calibration potentiometer so that the meter just reads full scale on the 1.5v. scale. The whole set of d.c. volt ranges should now be correct.

Calibration of the a.c. volt ranges is accomplished in the same manner except that a source of a.c. voltage of known value is applied to the a.c. probe. The lowest range of a.c. volts (0-1.5v.) will not be quite linear, but it was not thought worthwhile to include a special scale. For this reason the a.c. ranges should be calibrated using a voltage source of something larger than 1.5v.

It should be pointed out that the instrument reading is proportional to the peak value of the applied a.c. voltage, though the calibration is most useful in terms of r.m.s. voltage. The r.m.s.

All resistors in the divider sticks, and also the ohms ranges, should be mounted on low-leakage material—mounting them on the switch banks is recommended, whilst the grid by-pass condensers should be mounted right at the grid pins to keep r.f. away from the grids during measurements around a transmitter.

Panel layout is conventional and the only controls brought to the front panel are the two switches, meter zero and ohms adjustment potentiometer. All other controls are of the screw-driver adjust type and may be located inside the case. It is not necessary to use shielded leads for the probes, but it is important that the components of the a.c. probe be shielded and the shield earthed. For convenience and safety in measuring high voltages, the d.c. probe may use small section co-axial cable with the shielding braid earthed. The case of the instrument should be earthed via the usual three core flex.

(Continued on Page 11)

AN INTRODUCTION TO TWO METRES

BY ROBERT H. BLACK,* VK2QZ

DESPITE the belief of the low frequency Amateur that there could not possibly be so few metres, there really is a two-metre band. It is hoped that this introduction will acquaint future denizens of the band with some of the inner mysteries of this microcosm.

Before we proceed further we must define two metres: Two metres is 2 mx and a little rough calculation will show that it is 144 megacycles per second (i.e. 144,000 Kc.). In earlier times the calculation was rougher and two metres was 166 megacycles. As the transmitters were modulated oscillators the slight inaccuracy did not matter. Nowadays, when you have your crystal controlled transmitter operating in the band, you are much more aware of your exact frequency than are those who operate on the lower frequencies.

The types you will meet on two metres are diverse. Some are browned-off old-timers who want to get away from it all, others are serving their time with "Z" calls, perhaps still trying to learn morse, whilst another group regard two metres in the same way as a small boy dismembering his first alarm clock. These last are addicts. Others, again, are experimenters who write technical articles.

Before you can get going on two metres you must first of all find the band. This is an ordeal which must be endured by all who build their own equipment. It applies to both receivers and transmitters. The best receiver for two metres is a crystal controlled converter with a cascade in Sydney and a neutralised 6J6 in Melbourne as the front end. The views on the comparative excellence of these front ends are just as fixed as the opinions on the Melbourne climate and the Yarra River. Perhaps there are frequent meteor showers in Victoria, perhaps "QST" is read in one State and "CQ" in the other, perhaps no comparison has been made between the best gear in both States.

You will hear noise figures quoted; these are of academic interest unless you live in such seclusion that you see only one car a fortnight. Most Amateurs live in locations where noise (unfigured) is going to limit their reception rather than the nice distinction of 1 db. improvement in the noise figure. Noise will drive you or the XYL silly if you live in the city, where you will have to try all the noise limiters in the books and the magazines before you settle on your favourite. By the time you have tried all the various circuits you will have become accustomed to the noise anyhow and your wife will have left you.

In a crystal controlled converter you will use an overtone crystal oscillator and here there are three circuits, at least, to try before you find that your crystal is inactive on the particular overtone you want to use. If you have an active crystal, the circuit doesn't matter.

Well, you will eventually find the two metre band with your receiver after coming across the national f.m. broadcast transmitter and odd service signals including the N.R.M.A. These last signals may intrigue you so much that you won't persevere with the quest for two metres. But don't be waylaid; you will probably hear them again when you have found the band. It is handy to feed the converter into the receiver near your favourite short wave station so that you can listen to it during the periodic depressions when you want to hear a new voice for a change.

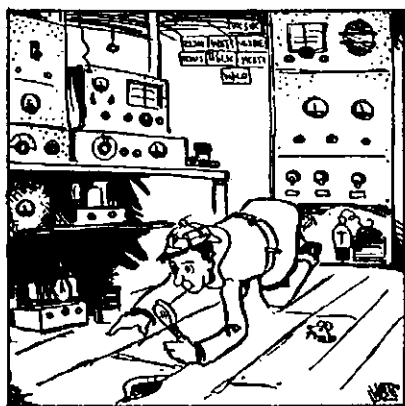
The two metre transmitter is quite different from the usual set-up on the

lower frequencies. Instead of using tubes which will deliver adequate output to drive the next frequency multiplier, you must use small tubes, triodes at that, and squeeze and squeeze them in the effort to obtain enough grid drive to the final amplifier, and when the grid current reaches the right value it will mostly be due to oscillation. This is a matter of honour; the fellow who designs a transmitter with drive to spare is a cad. The caddish approach is advised.

Finding the band with the transmitter can be attempted in one of two ways. The cognoscenti use a grid dip oscillator, whereas the others obtain output from the final and call CQ. These innocents find themselves tangled up with aircraft, taxi cabs or fire brigades and, even if they don't cause trouble, will certainly call their heads off and receive no answer on two metres as they are on ninety-six megacycles or thereabouts.

If you want to have any contacts on two metres you will have to use telephony. The "Z" calls are on two metres because they did not sit for a morse examination, and the ex-low frequency phone stations haven't a key in the shack and forgot morse years ago! When you graduate to working two metre DX, you may use a morse key, but this will only be when you have a big signal.

F.m. is much cheaper to put in the transmitter than a.m. Strangely enough, these characters who spend weeks hunting for grid drive won't spend an hour or two putting a discriminator in their receivers so you will have to put up



"... Two Metres—You must first of all find the band."

RADIO HAMS!

TUNE INTO HI-FI

Revamp your Modulator and thrill to the wonder of amazingly improved sound by installing the new, sensational 8" High Fidelity Loudspeaker with a frequency range of 40-5,000 c.p.s.—the remarkable . . .

GOODMANS AXIETTE 101

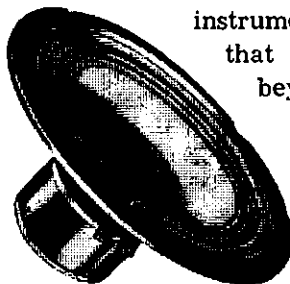
Here's a five watt Loudspeaker that's a precision instrument of the finest standard . . . a Loudspeaker that will improve any Receiver or Amplifier beyond recognition.

Ask U.R.D. for a price on the minimum HI-FI Kit.

UNITED RADIO DISTRIBUTORS PTY. LTD.

175 Phillip St., Sydney.

Phone: BL 3954



* "The Chalet," 2 Yerton Ave., Hunter's Hill, N.S.W.

with excruciatingly funny comments about your type of modulation.

Another approach is to use your 100 watt modulator from the low frequency transmitter and bore it into the 25 watt two metre rig. When you have fixed the radio frequency feedback you will have a nice wide signal with a few extra ones on each side. This helps to occupy the band.

For an aerial you will have a beam. It is conventional to use horizontal polarisation to stop your signals going over hills and down the other side. This diminishes the amount of interference. Horizontal polarisation also necessitates more ingenuity and trouble in mobile work and is therefore highly desirable. A simple beam is advisable at first; many complicated ones have been found to be only as effective as a dipole. If you are building a tower make sure that you have adequate space to accommodate it when it falls down in the wind.

You should really have some form of frequency measuring device—the minimum requirement is a set of lecher lines (the "h" is pronounced as a "k"), but between contacts you will have plenty of time to build a complicated heterodyne frequency meter. A phone monitor would be regarded with some suspicion and any tendency for this sort of thing to appear might start an evacuation to the one metre band. You will find that distortion, hum, splatter, parasitics, frequency drift and the like don't seem to cause much trouble on two metres.



"... Fox Hunts are designed to encourage driving at high speed."

All is now ready. You call CQ and your first Sunday night on the band will bring a host of contacts—there is a new signal on the band. Please don't expect it to last; but your popularity will recur periodically during Scrambles, which are contests arranged so that you have an excuse to finish the contact quickly and get on with the next. This gets all your duty calls over in one night and you can then go back to nightly contacts with your personal friends.

Frequencies are subject to personal ownership on two metres and only the lowest megacycle is used. If your crystal lands on someone else's frequency and he has a big signal, you will need another eight megacycle crystal. If you have the big signal and he doesn't, then he will be looking for a new crystal. This is very convenient as you don't have to listen on your own frequency before you transmit.

Before long you will become entangled in a technical discussion type of contact. This consists of designing a new portable transmitter with fewer and smaller tubes to give greater output with less battery drain, or a new beam with an impossible number of elements. You must keep yourself well amused during the other fellow's over or you will go to sleep. To obviate this, a technique was invented called cross band operation. Here it is good manners to answer questions occasionally, even if you are busy with some intricate bit of soldering.

Field days using portable and mobile equipment were introduced by those living in noisy locations with no domestic responsibilities. A variety of this type of activity is the fox hunt, designed to encourage car driving at high speed; being booked is the equivalent of being thrown at a jump.

After you have made all your over-the-back-fence contacts you will be looking for two metre DX. This is the big test, but not of your equipment. Despite the permissible 100 watts, a beam of unbelievable gain, and a receiver with a fractional noise figure, you will not work DX if you have a bad location except once in a pink aurora. So you build an eighty metre transmitter and talk to the two metre DX stations on that band, or you learn Morse, drop the "Z" (if you have one) from your call sign, and go hunting the real thing on twenty metres.

This is not, of course, the whole story. It would be absurd to suppose that anyone would build expensive and complicated equipment merely to have two or three contacts a week. When I have finished reading this book by Dale Carnegie I may have an odd moment in the social whirl of two metres to tell you more about this band.

PRACTICAL VACUUM TUBE VOLTMETER

(Continued from Page 9)

This offers the convenience of single probe operation where equipment is already earthed.

PUTTING THE V.T.V.M. TO USE

The uses of the V.T.V.M. are too numerous to list in detail, but the reader is assured that the time and effort put into the construction of such an instrument is well worth while. Typical jobs made easy are: Receiver alignment, using the d.c.v. ranges to read a.v.c. or diode load voltages; transmitter setting up, using the d.c.v. ranges to check grid voltage, thus checking grid drive without having to break the earth return of the grid leak and insert a meter; checking voltages in resistance coupled amplifiers; measuring the gain of amplifier stages by checking a.c. volts in against a.c. volts out.

These are just a few of the multitude of uses to which this instrument may be put. In fact, having built a V.T.V.M., the usual thing is that the constructor begins to wonder how he ever got along without one!

In conclusion, it must be mentioned that the instrument just described is not claimed to be superior to the de luxe V.T.V.M. described in the references, except in size and convenience. The large instrument has more ranges

covering also d.c. milliamps. as well as having a very high input resistance. It is, as its name implies, a de luxe instrument. The present instrument is a practical every-day tool, easy to build, easy to get going and easy to use, designed to fill the same place as the well known multimeter, but with all the advantages possessed by a V.T.V.M.

For those wanting the very best in V.T.V.M.'s. and not worried by size or complexity, then the McMurdo Silver job would be the logical choice; the smaller version will, however, probably appeal to the majority of Amateurs.

REFERENCES

- 1 "Taming the Vacuum Tube Voltmeter," McMurdo Silver, Part 1, July, 1945, "QST"; Part 2, August, 1945, "QST".
- 2 "A De Luxe Vacuum Tube Voltmeter," J. C. Duncan, "Amateur Radio," January, March, 1950.

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AMATEUR
BANDS

ACCURACY 0.02% OF
STATED FREQUENCY

3.5 Mc. and 7 Mc.

Unmounted £2 0 0

Mounted £2 10 0

12.5 and 14 Mc. Fundamental
Crystals, "Low Drift,"
Mounted only, £5.

Spot Frequency Crystals
Prices on Application.

Regrinds £1 0 0

THESE PRICES DO NOT
INCLUDE SALES TAX.

MAXWELL HOWDEN
15 CLAREMONT CRES.,
CANTERBURY, E.7,
VICTORIA

6146 Beam Power Amplifier Data

Cathode: Oxide coated. Indirectly heated.
Heater: Voltage (AC or DC) 6.3 volts \pm 10%.
 Current 1.25 amps \pm 0.075 amp.
 Maximum voltage between heater and cathode: 135 volts (DC).
Capacitances (without external shield; base pin No. 8 earthed):
 Grid to Plate = 0.22 pF.
 Grid to Cathode = 13.5 ± 2.4 pF.
 Output = 8.5 ± 2.1 pF.

Useful Power Output: Minimum 47.5 watts.
Maximum Circuit Values (C.C.S. or I.C.A.S. conditions*)
 Grid resistance equals maximum of 30,000 ohms.

When grid is driven positive and the 6146 is operated at maximum ratings, the total grid DC circuit resistance should not exceed the specified value of 30,000 ohms. If this value is insufficient to provide adequate bias, the additional required bias must be supplied by a cathode resistor or fixed supply. For operation at less than maximum ratings, the grid DC circuit resistance may be as high as 100,000 ohms.

* C.C.S.—Continuous Commercial Service.
 I.C.A.S.—Intermittent Commercial and Amateur Service.

AF POWER AMPLIFIER AND MODULATOR CLASS AB1 AND AB2

MAXIMUM RATINGS, absolute values.

| | Class AB1 Triode | | Class AB1 | | Class AB2 | |
|------------------------------|---------------------|----------|-----------|----------|-----------|-----------|
| | C.C.S. | I.C.A.S. | C.C.S. | I.C.A.S. | C.C.S. | I.C.A.S. |
| Anode voltage | 400 | 400 | 600 | 750 | 600 | 750 volts |
| Screen voltage | connected to anode | | 250 | 250 | 250 | 250 volts |
| Anode current, max. signal | 90 | 90 | 125 | 135 | 125 | 135 Ma. |
| Max. signal anode input (3) | 35 | 35 | 60 | 85 | 62.5 | 90 watts |
| Max. signal screen input (3) | — | — | 3 | 3 | 3 | 3 watts |
| Anode dissipation (3) | 20 | 25 | 20 | 25 | 20 | 25 watts |

TYPICAL OPERATION (Values are for two tubes)

Class AB1—Triode Connection

| | C.C.S. | | I.C.A.S. | |
|---|--------|----------|----------|------------|
| | C.C.S. | I.C.A.S. | C.C.S. | I.C.A.S. |
| Anode voltage | 250 | 400 | 400 | 400 volts |
| Grid No. 1 voltage | —50 | —100 | —100 | —100 volts |
| Peak input between grids | 100 | 200 | 200 | 200 volts |
| Anode current, zero signal | 110 | 80 | 80 | 80 Ma. |
| Anode current, max. signal | 144 | 136 | 136 | 136 Ma. |
| Effective load resistance, anode to anode | 5000 | 8000 | 8000 | 8000 ohms |
| Max. signal driving power | 0 | 0 | 0 | 0 watts |
| Harmonic distortion | 5 | 4.6 | 4.6 | 4.6 % |
| Output power (max. signal) | 8 | 19 | 19 | 19 watts |

Class AB1—Tetrode Connection

| | C.C.S. | | I.C.A.S. | | |
|--|--------|----------|----------|----------|-----------|
| | C.C.S. | I.C.A.S. | C.C.S. | I.C.A.S. | |
| Anode voltage | 400 | 500 | 600 | 600 | 750 volts |
| Screen voltage (1) | 190 | 180 | 190 | 200 | 200 volts |
| Grid No. 1 bias (2) | —40 | —40 | —45 | —50 | —50 volts |
| Peak input between grids | 80 | 80 | 90 | 100 | 100 volts |
| Anode current, zero sig. | 86 | 70 | 60 | 52 | 57 Ma. |
| Anode current, max. sig. | 228 | 220 | 200 | 239 | 227 Ma. |
| Screen current, zero sig. | 2 | 1.4 | 1 | 1.2 | 1 Ma. |
| Screen current, max. sig. | 30 | 19.5 | 30.5 | 25.2 | 27.5 Ma. |
| Effective load resistance anode to anode | 4000 | 5000 | 7500 | 5500 | 8000 ohms |
| Max. sig. driving power | 0 | 0 | 0 | 0 | 0 watts |
| Harmonic distortion | 8 | 8 | 8 | 7.5 | 5.7 % |
| Output power (max. signal) | 55 | 70 | 82 | 94 | 120 watts |

Maximum Circuit Values for above conditions (see note 6):
 Grid No. 1 circuit resistance, with fixed bias 0.1 megohm max.
 With cathode bias (triode connection only): 0.5 megohm.
 Cathode bias not recommended for tetrode connection.

- (1) Preferably obtained from a separate source or from the anode voltage supply with a voltage divider.
 (2) From fixed bias source.

Cap 3/8" dia.
 Socket 5903/12/C
 Bulb temperature, maximum of 220°C.
 Mounting position any
 Overall length, 3-11/16" \pm 1/8"
 Seated length 3-1/8" \pm 1/8"
 Maximum diameter 1-23/32"
 Shipping weight 4 oz.
 Net weight 3 oz.

Base Octal
 Pin 1 } Cathode, Suppressor, and Internal Shield.
 Pin 4 }
 Pin 6 }
 Pin 2 } Heater
 Pin 7 }
 Pin 3—Screen grid.
 Pin 5—Grid.
 Pin 8—Base sleeve.
 Cap —Anode.

AF POWER AMPLIFIER AND MODULATOR CLASS AB2

MAXIMUM RATINGS, absolute values

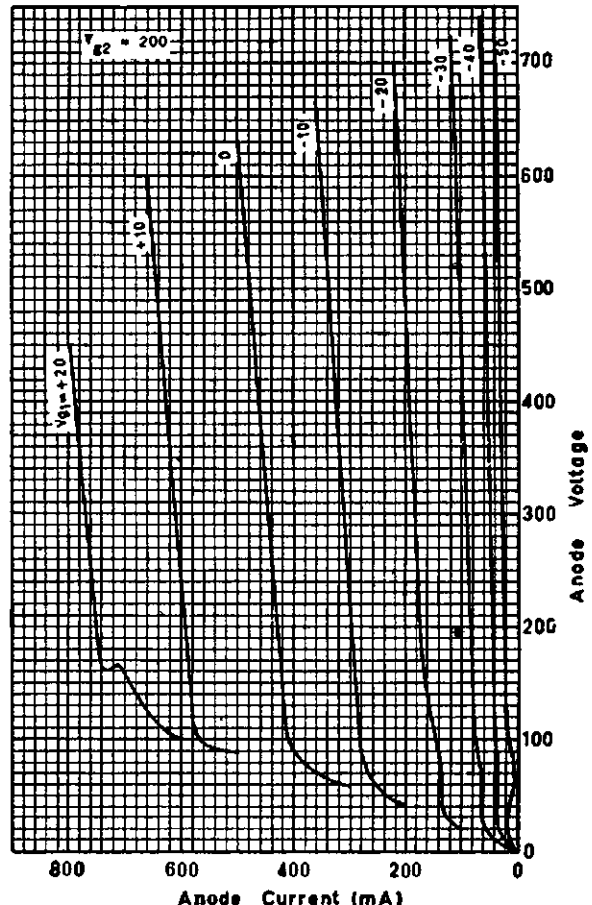
| | C.C.S. | | I.C.A.S. | |
|--------------------------------|--------|----------|----------|-----------|
| | C.C.S. | I.C.A.S. | C.C.S. | I.C.A.S. |
| Anode voltage, maximum | 600 | 750 | 750 | 750 volts |
| Screen voltage, maximum | 250 | 250 | 250 | 250 volts |
| Anode current, max. signal (3) | 125 | 135 | 135 | 135 Ma. |
| Max. signal anode input (3) | 62.5 | 90 | 90 | 90 watts |
| Max. signal screen input (3) | 3 | 3 | 3 | 3 watts |
| Anode dissipation (3) max. | 20 | 25 | 25 | 25 watts |

6146

Page 6



AVERAGE CHARACTERISTICS (V_{g1} as variable)



11-11-1954

AF Power Amplifier and Modulator, Class AB2 (continued)

TYPICAL OPERATION (values are for two tubes)

| | C.C.S. | C.C.S. | C.C.S. | I.C.A.S. | I.C.A.S. |
|--|--------|--------|--------|----------|------------|
| Anode voltage | 400 | 500 | 600 | 600 | 750 volts |
| Screen voltage (1) | 175 | 175 | 165 | 185 | 165 volts |
| Grid No. 1 bias (4) | -40 | -40 | -45 | -50 | -45 volts |
| Peak input between grids | 86 | 87 | 99 | 113 | 101 volts |
| Anode current, zero sig. | 63 | 64 | 31 | 41 | 35 Ma. |
| Anode current, max. sig. | 232 | 242 | 207 | 270 | 240 Ma. |
| Screen current, zero sig. | 1.5 | 1.2 | 0.7 | 0.9 | 0.6 Ma. |
| Screen current, max. sig. | 28 | 26 | 31 | 29 | 21 Ma. |
| Max. grid current for max. signal | 0.3 | 0.3 | 0.5 | 0.8 | 0.7 Ma. |
| Effective load resistance anode to anode | 4000 | 5000 | 7500 | 5500 | 8000 ohms |
| Driving power on grids (5) | 0.01 | 0.01 | 0.02 | 0.04 | 0.03 watts |
| Harmonic distortion | 9.7 | 9.7 | 9.7 | 11 | 10 % |
| Maximum power output | 60 | 81 | 90 | 115 | 130 watts |

Maximum Circuit Values (see note 5):
 Grid resistance with fixed bias: 30,000 ohms max. (cathode bias not recommended).

- (3) Averaged over any audio frequency cycle of sine wave form.
- (4) From fixed bias source.
- (5) Driver stage should be capable of supplying the specified driving power at low distortion to the control grids of the AB2 stage. To minimise distortion, the effective resistance per control grid circuit of the AB2 stage should be held at a low value. For this purpose, the use of transformer coupling is recommended. In no case, however, should the total control grid DC circuit resistance exceed 30,000 ohms when the 6146 is operated at maximum ratings. For operation at less than maximum ratings, the DC circuit resistance may be as high as 100,000 ohms.

(6) The type of input coupling network used should not introduce too much control grid circuit resistance. Transformer or impedance coupling devices are recommended. When control grid is operated in the negative region with fixed bias, the control grid circuit resistance should not exceed 0.1 megohm. For higher values of this resistance, cathode bias is required. Under no circumstances should the total control grid circuit resistance, exceed 0.5 megohm.

ANODE MODULATED RF POWER AMPLIFIER

Class C Telephony

Carrier conditions per tube for use with maximum modulation factor 1.0

MAXIMUM RATINGS, absolute values

| | C.C.S. | I.C.A.S. |
|--------------------|--------|------------|
| Anode voltage | 480 | 600 volts |
| Screen voltage | 250 | 250 volts |
| Grid bias | -150 | -150 volts |
| Anode current | 117 | 125 Ma. |
| Grid current | 3.5 | 4.0 Ma. |
| Anode input power | 45 | 67.5 watts |
| Screen input power | 2 | 2 watts |
| Anode dissipation | 13.3 | 16.7 watts |

TYPICAL OPERATION

| | C.C.S. | C.C.S. | I.C.A.S. |
|----------------------------|--------|--------|------------|
| Anode voltage | 400 | 475 | 600 volts |
| Screen voltage (7) | 150 | 135 | 150 volts |
| Screen series resistor (7) | 21500 | 26500 | 37500 ohms |
| Grid bias (8) | -85 | -85 | -85 volts |
| Grid resistor (8) | 28300 | 28300 | 28300 ohms |
| Peak RF input | 100 | 99 | 100 volts |
| Anode current | 112 | 94 | 113 Ma. |
| Screen current | 11.6 | 12.8 | 12 Ma. |
| Grid current (approx.) | 3 | 3 | 3 Ma. |
| Driving power | 0.3 | 0.3 | 0.3 watts |
| Output power | 34 | 33 | 52 watts |

Maximum Circuit Values: Maximum grid resistance: 30,000 ohms.

- (7) Obtained preferably from a separate source modulated with the anode supply, or from the modulated anode supply through a series resistor.
- (8) Obtained from grid resistance or from a combination of grid resistance and either fixed supply or cathode resistor.

RF POWER AMPLIFIER AND OSCILLATOR

Class C Telephony

Key down conditions per tube without amplitude modulation. Amplitude modulation essentially negative may be used if the positive peak of the AF envelope does not exceed 115% of the carrier conditions.

Class C, FM Telephony

MAXIMUM RATINGS, absolute values

| | C.C.S. | I.C.A.S. |
|-------------------|--------|-----------------|
| Anode voltage | max. | 600 750 volts |
| Screen voltage | max. | 250 250 volts |
| Grid bias | max. | -150 -150 volts |
| Anode current | max. | 140 150 Ma. |
| Grid current | max. | 3.5 4.0 Ma. |
| Anode input | max. | 67.5 90 watts |
| Screen input | max. | 3 3 watts |
| Anode dissipation | max. | 20 25 watts |

TYPICAL OPERATION AS AMPLIFIER (at given maximum frequencies)

| | Maximum Frequency up to 60 Mc. | | | | Max. Freq. up to 175 Mc. | |
|----------------------------|--------------------------------|-------|-------|-------|--------------------------|------------|
| Anode voltage | 500 | 600 | 600 | 750 | 320 | 400 volts |
| Screen volt. (9) | 170 | 150 | 180 | 160 | 180 | 200 volts |
| Screen series resistor (9) | 29200 | 40200 | 28000 | 40100 | 15500 | 22200 ohms |
| Grid bias (10) | -85 | -85 | -85 | -85 | -54 | -54 volts |
| Grid resistor (10) | 28300 | 28300 | 28300 | 28300 | 30000 | 30000 ohms |
| Cathode res. (10) | 570 | 670 | 510 | 620 | 360 | 335 ohms |
| Peak RF input | 99 | 100 | 102 | 100 | 70 | 70 volts |
| Anode current | 135 | 113 | 150 | 120 | 140 | 150 Ma. |
| Screen current | 11.3 | 11.2 | 15 | 14.7 | 9 | 9 Ma. |
| Grid current | 3 | 3 | 3 | 3 | 1.8 | 1.8 Ma. |
| Driving power | 0.3 | 0.3 | 0.3 | 0.3 | 2 | 3 watts |
| Output power | 50 | 52 | 69 | 69 | 25 | 35 watts |

(9) Obtained preferably from a separate source, or from the anode supply voltage with a voltage divider, or through a series resistor. A series resistor in the screen grid circuit should be used only when the 6146 is used in a circuit which is not keyed. The screen voltage must not exceed 400 volts under key-down conditions.

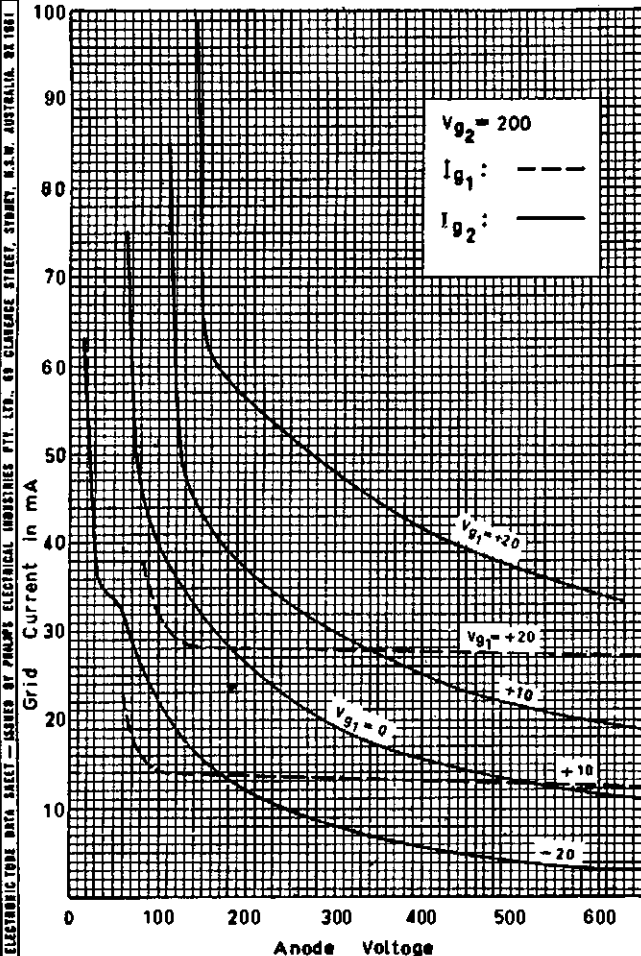
(10) Obtained from fixed supply, by control grid resistor, by cathode resistor or by combination methods.



6146

Page 7

AVERAGE CHARACTERISTICS



ELECTRONIC TUBE DATA SHEET - ISSUED BY PHILIPS ELECTRICAL INDUSTRIES PTY. LTD., 50 CLARENCE STREET, SYDNEY, N.S.W., AUSTRALIA. 91 1951

VICTORIAN ALL MODELS EXHIBITION

The All Models Exhibition and International Trade Fair will take place from **25th August to 10th September** at the Exhibition Buildings, Melbourne. The exhibition on this occasion has been enlarged to take in the international side of things and it is anticipated that 250,000 people will pass through the turnstiles.

The Victorian Division of the Wireless Institute of Australia will again be taking the main stage as their exhibiting space and the organiser, 3LN, is most anxious to have the co-operation of Interstate Amateurs to maintain contacts during this exhibition.

VK3WI will be on the air simultaneously for the duration of the show on 2, 20, 40 and 80 metres and any contacts would be greatly appreciated.

Please remember that your side of the transmission will be relayed into the hall and please do not use abbreviations, but endeavour to make the transmission suitable in nature for audience participation.

VK3WI will be on the air each day excepting the Sundays from approximately 12 midday until 10 p.m. each night. Please make a note in the log of these times and dates, when your contacts with VK3WI will be greatly appreciated by the gang operating at the exhibition.

REMEMBRANCE DAY CONTEST

13th and 14th August

With the coming of August, members will recall that this month holds a date of particular significance to Australian Amateurs. Our Remembrance Day Contest is designed to honour the memory of our gallant comrades. By our participation, we render personal homage.

*"At the going down of the sun
and in the morning,
We will remember them."*

VARIATION OF AWARDS

The following variation of awards under Rule 17 will operate in the coming Remembrance Day Contest.

Instead of the three awards being given to first, second and third, in each State, these three awards will be given to the winners of the Phone, C.w. and Open Sections respectively.

It is felt that c.w. operators are at a disadvantage compared to those working phone or both phone and c.w. as they are so much in the minority and the change will encourage c.w. operators who would otherwise have little chance of gaining a certificate.

The full rules appeared in the July issue of "A.R."

120W. OF AUDIO WITHOUT DRIVING POWER

(Continued from Page 4)

cause of the heavier drain on the power supply, and appears practically entirely in the modulator output and not in the earlier stages. At this level the signal-to-hum ratio is over 30 db. With voice input and gain adjusted for full output on peaks, the drain on the supply is considerably less and hum is not observable.

With sine-wave input, the plate current at full output is 240 Ma. when the load is adjusted to the appropriate value for the plate voltage in use, as listed earlier. This maximum current is practically the same at all plate voltages listed, since the plate dissipation rating of the 6146 does not permit using a bias value that gives a very large value of no-signal plate current. The grid bias should be adjusted for a total plate current that represents a no-signal input of slightly under 50 watts at the particular plate voltage used.

The voltage gain from the microphone input to the modulator grids is such that full output can be secured with an input voltage of about 3 millivolts, r.m.s. This is of the order of one-tenth the voltage available from a crystal microphone with close talking.

LET'S BUILD A TOWER

(Continued from Page 5)

the four legs, temporary cross braces of 2" x 1" x 10' karri nailed to the legs on the ground and up the tower to their opposite partners above, and the gang

who had now completely exhausted their excuses, assembled for the big day.

Eight Amateurs, one block and tackle, one cement mixer (the man next door) and one XYL, whose tea and cakes may have been an offering of gratitude for the removal of the obstruction to domestic traffic, congregated.

The cement mixer mixed cement, the boys heaved, pushed, pulled and swore; the XYL cheered and the tower was erected. Now, in place of a monster 42 ft. wide and 4 ft. high, was a landmark 42 ft. high and 4 ft. wide at the bottom, making a great difference in a backyard 45 ft. wide.

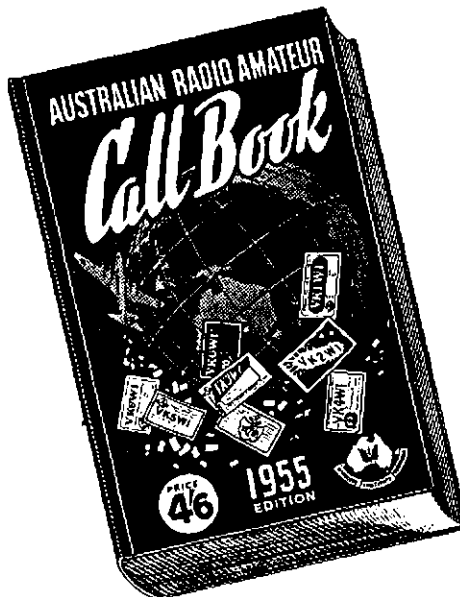
A catwalk was prefabricated from scrounged bedsteads and fitted near the top. The top bearing plate, six inches square by $\frac{3}{8}$ " thick, with convenient length of pipe welded through centre and iron legs 8 inches long of 1" x $\frac{3}{4}$ " welded to each corner at the correct angle, is bolted to the top of the tower legs.

The beams used are a two element "ZL Special" for 14 Mc., two element "ZL Special" for 21 Mc., and a 4 element parasitic for 50 Mc.

Four stays were attached to the 30 ft. level as a safety measure and so far the tower, 200 yards from and overlooking the ocean, has withstood gales of up to 80 m.p.h.

Further details of construction, etc., can be supplied on request to anyone interested in the erection of a similar structure.

If someone else builds it and then has a change of QTH, the writer would like to know how it was taken down. Hi!!



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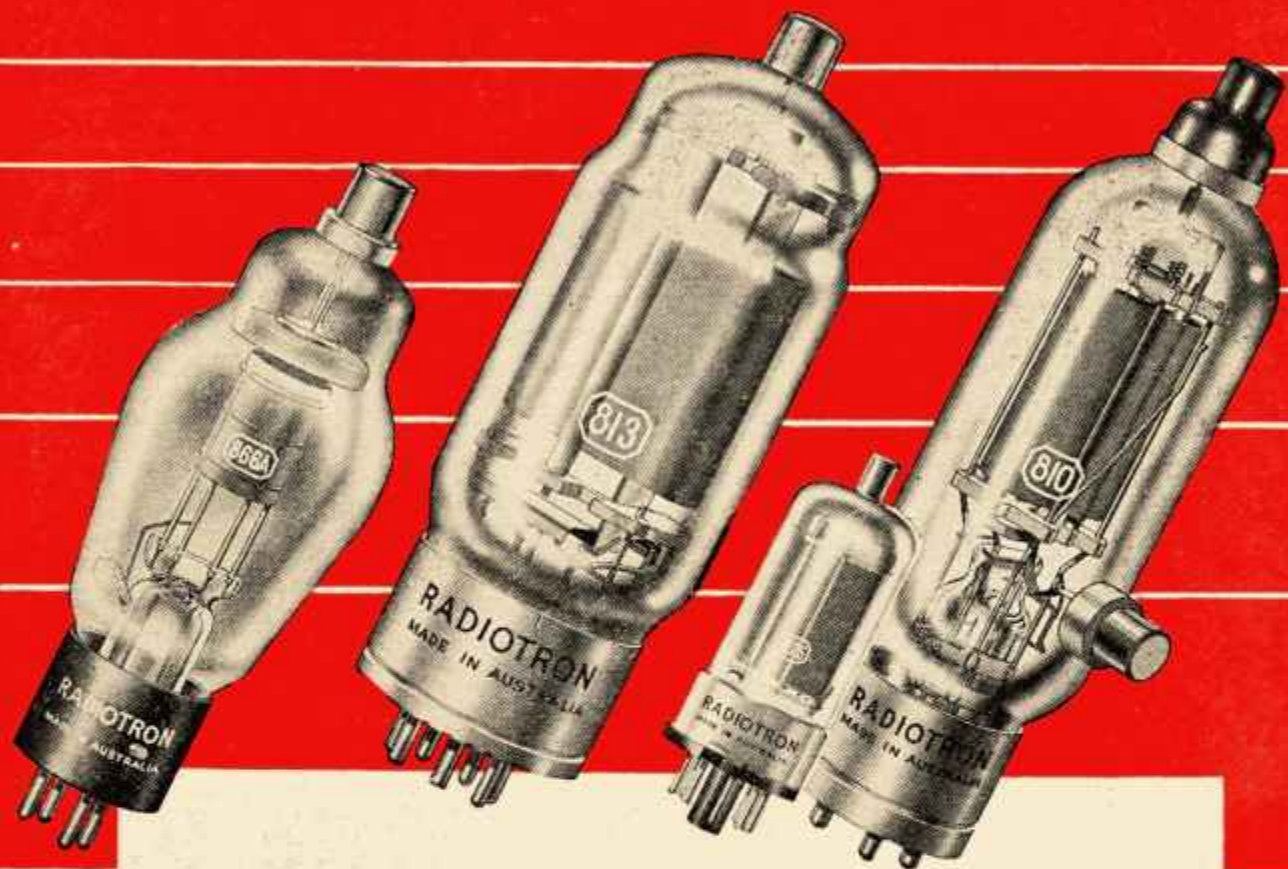
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"HAM" RADIO SUPPLIERS

(KEN MILLBOURN, PROP.)

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Bargains Galore - - Compare These Reduced Prices

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Look at these Bargain Priced NEW VALVES—

| | | | |
|---------------|-----------------|-----------------|----------------|
| 1A5 ... 2/6 | 6N7 ... 10/- | 12SJ7 ... 10/- | VR21 ... 2/6 |
| 1B5 ... 2/6 | 6N8 ... 15/- | 12SK7 ... 10/- | VR22 ... 2/6 |
| 1K4 ... 5/- | 6Q7G ... 5/- | 12SQ7 ... 2/6 | VR32 ... 2/6 |
| 3Q5 ... 5/- | 6R7G ... 10/- | 12SQ7GT ... 2/6 | VR35 ... 2/6 |
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Amateur Radioteletype

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Editor "A.R.,"
Dear Sir,

FOR some years I have been diligently scrutinising the various Amateur Radio journals of our overseas friends in the hope of some day finding that interest had been aroused in a form of Amateur Radio communication which has made considerable progress in the United States.

I am referring to Amateur Radioteletype operation; the use of mechanised telegraph printers to permit accurate and high-speed transmission of messages in the manner so nearly universally employed by the commercial radio companies.

Here in the U.S.A. the radio-printer group has grown from a single station in 1946 to well over 2,300 at the end of 1954. In addition, there are about 50 Canadian stations now transmitting via this means. A very few overseas stations have participated which means that little or no DX operation is occurring outside of continental North America. This is to be regretted inasmuch as Amateurs have always prided themselves on their ability to keep abreast of, if not outstrip, their commercial brothers.

R.t.t.y. offers real benefits to the Radio Amateur. In the emergencies wherein Radio Amateurs the world over have so often contributed to the security of life and property, teleprinter operation enables an extremely large volume of message traffic to be handled in a minimum of time, with a maximum of accuracy, and by relatively unskilled operators.

Since most wire-line communication companies and agencies have converted almost exclusively from morse hand-keyed transmission to code-operated printing telegraph equipment, it will be realised with what effectiveness an r.t.t.y. Amateur could provide a radio link for an emergency-breach wire line circuit.

I have had the good fortune of being the first Amateur to use radioteletype-writers via f.s.k. (frequency-shift-keying) on our bands. I was very shortly joined by several score of New York City Amateurs on the 2 mx v.h.f. band. Very shortly thereafter Amateurs pioneered the first transcontinental U.S.A. printing telegraph hook-up. Following that was the setting up of a circuit to Japan for the handling of free messages from the American soldiers stationed there to their families in the States.

After considerable campaigning Governmental regulations were altered to permit r.t.t.y. on all bands, hitherto only available to c.w.-keyed circuits. This relaxation of restrictions against the employment of f.s.k. on the DX bands is what prompted the writing of this letter. Similar action on the part of overseas governments would make International radioprinter communication a common occurrence.

Co-operation is had with our Civil Defence, Red Cross, Telegraph Companies and the Signal Divisions of our Military Forces for participation with them in the event of a National Emergency. The Army, Air Force and Navy have

provided radioprinters in the stations they permit to be operated, on Amateur bands, by Amateurs among their members.

Since 1946 the r.t.t.y. Amateurs throughout the U.S.A. and Canada have had as their National organisation the V.h.f. Teletype Society with headquarters at 38-06 61st Street, Woodside 77, N.Y., U.S.A. Despite the name, the Society is not restricted to v.h.f. but is the headquarters organisation for all r.t.t.y. Amateurs. The Society furnishes constructional blueprints, technical bulletin, maintains departments for aiding new members and publishes a National publication.

The most important service performed by the Society is the obtaining of very serviceable, although superseded, printing telegraph equipment for its members through contacts with all the major wire companies. This equipment, which new would cost over \$1,000 in most cases, is available to the Society's members for about the cost of bookkeeping to the telegraph companies. Equipment is secured as inexpensively as \$15 and not over about \$100 as a maximum. Originally many new machines were obtained from Military surplus disposals although this source has practically disappeared at the present time.

It should be mentioned at this point that advantage is taken of the unique ability of f.s.k. receiving converters to eliminate or minimise radio noise, fading and QRM, to set up automatic "repeater" networks (most have been on v.h.f.). A repeater picks up an incoming signal, "washes" out the QRN, QRM, QSB, etc., and operates a polarised telegraph relay. The contacts of this relay now provides an "ideal" signal, not only for keying the local teleprinter, but for keying a "brand-new" outgoing f.s.k. signal.

Copy is faultless and errorless on signals so weak and full of noise that, were it hand-keyed, using make-break c.w. instead of f.s.k., copy would be impossible. F.s.k. is startling in this respect. Frequency shift has the added advantage that, like f.m., interference with television and radio is minimised or eliminated since the carrier amplitude is unchanging. Key clicks are non-existent.

Most attempts to get overseas Amateurs interested in r.t.t.y. have met with the stumbling block of the availability of equipment. While it is possible that the V.h.f. Teletype Society could arrange to get equipment shipped to foreign points, it would appear much better to attempt to tap sources of equipment closer to home. Communications agencies and companies, if properly approached, are generally pleased to have an outlet for their superseded machines at prices above that for scrap metal, when they have assurances that the equipment will not be utilised in competitive services.

Individuals stand little chance of obtaining the release of this sort of apparatus, but they will generally co-operate with duly authorised representatives of a National group. One of their objections to dealing with individuals is the large volume of correspondence involved in individual, piecemeal, sales. A National group can handle the

release of hundreds of machines with a single letter.

Surplus Military disposals may be a good source in which to secure printers.

In closing this lengthy, but earnest, communication, I would like to offer my assistance to any overseas Amateur having bona-fide interest in printing telegraph operation. I have been the Secretary of the V.h.f. Teletype Society National organisation for the past eight years and have seen it grow up to several thousand enthusiastic members through the spirit of co-operation that exists all over the world among Amateurs. It is my sincere hope that International r.t.t.y. operation will become as much a reality as our extensive operations in this country.

Fraternally,

JOHN EVANS WILLIAMS, W2BFD,
Technical Editor "CQ."



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FIFTY MEGACYCLES AND ABOVE

NEW SOUTH WALES

On Sunday evening, 12th June, at 7.30 p.m. the usual v.h.f. broadcast was given by 20A. At the conclusion he announced that a Surprise Scramble was to be held on 2 mx from the time the announcement finished until 9 p.m. The Scramble was on, and at 9 o'clock 25 stations were reported as having taken part. The honours went to John 2ANF who made 23 contacts, Adrian 2HE was second with 19 contacts, and 2CE, 2AJZ and 2YM shared third place, 18 contacts. The results and the idea were heartily commended by all.

The Group had planned a Fox Hunt for Sunday, 16th June, and although the day was not started or finished as planned, the Fox Hunt was held and enjoyed by all who took part. 2AJZ was to have been the fox, but owing to a break-down, he was unable to go on the air at the time scheduled. He made haste to the shack of 2XX and using Ted's gear informed the hounds what had happened. After a conference the hunt was reorganised with 2ANF as the fox, who was given a short time to get on his way and the hounds were soon in full chase, but was not caught until he had gone to earth in the Dural district. Points towards winning the chase were allotted for miles covered and for time taken; so, as 2HL was first in, and 20A covered the shortest distance, the score was a draw. John, "the fox," then decided the best thing to do was to hold a short run so as the two super sniffers could settle the argument. So they were off, and after a short but sharp run the fox was caught, and would you believe it, that the winner was 2LG who showed them both up! Unfortunately the feud continues.

The v.h.f. Sunday Broadcast is now being done on a roster system and the stations in order are: 2HO, 2APQ, 2AJZ, 20A, 2HL and 2QZ. We hope that there will be no split infinitives.

The monthly meeting of the Group took place on the first Friday of the month at the usual meeting place, the Leichardt-Petersham Technical College. Business for the evening was quickly dealt with, so that our lecturer, Norm Beard, 2ALJ, of the staff of the College, could continue his lecture of the previous month on "Television." Norm gave us a thorough run through of a commercial t.v. rx. The rx was on display with a pattern generator, also a signal generator with which to cause interference. Much knowledge was gained by all present and many members (50 present) counted the number of tubes in the rx with misgiving—22 plus the picture tube. At the conclusion of the lecture a vote of thanks was proposed by 2HE, and as usual was passed with acclamation. During the evening, Adrian informed the Group as to the action and the results obtained so far in his work as official keeper of N.S.W. v.h.f. long distance contacts records.

The management committee of the Group met at the home of 2APQ's on 5th July and apart from the business dealt with, a supper of no mean proportion, prepared by Mrs. and Miss Healey, was also very successfully dealt with. During the evening the committee arranged the following fixtures: 7th August—Field day, the actual form of same to be advised later. On 21st August a 2 mx Scramble will be held between the hours of 8 and 10 p.m., and on the 21st August a night Hidden Tx Hunt. Other subjects were discussed and will be reported at the next meeting of the Group on Friday, 5th August.—2AJZ.

VICTORIA

At the last Fox Hunt it was the hounds who played the tricks. While 3IE kept the fox crew entertained with light conversation, 3VZ and Jim Shaw put identifying "L" for Len marks in fluorescent tape on the front and back bumper bars and fluorescent point on the sides of the fox car. At the first hiding place in a sports oval in Hawthorn, the first to track the Fox down was 3KD, followed by 3VZ, 3ALY, 3ZAY, 3ZAA and 3YS. Then around the streets in Glen Iris 3ZAM, 3VZ, 3KD and 3ALY all caught the Fox while he was on the run. The next hiding spot was in a paddock near Alamein where 3ADU was first, followed by 3KD, 3ZAY, 3ALY and 3ZAM. After leaving this spot the Fox was again run down whilst on the run by 3VZ, 3KD, 3ALY, 3ZAA and 3ZAY. The final location was held at the home of Clem Wagg at Burwood. Thirty-three participated in supper and the post-mortem on the evening's run. We wish to thank Clem and Joy for their friendly hospitality in making their home available for the gang to finish off the evening. Bob 3OJ acted as control station and was ably assisted by Ron 3ZBH with cross bearings. Many thanks Bob and Ron.

We hope to have two new starters at the next Fox Hunt in Tom 3AOG and Roy 3ARY. Tom's tx has two 12AT7s, a 6J6 final, modulated by a 6C4 and a 6AQ5; intends building a xtal locked converter into his car radio with a 6 el. beam attached to his car. Roy 3ARY has a xtal locked converter into a Command rx and a three el. beam. Berry 3APB is building a new 2 mx mobile—12AT7, 5763 and 2E2B, also a new beam for the home location, a 5 over 5, approx. 15 feet high.

At the v.h.f. meeting, Max 3ZAW gave an interesting description of his 2 mx gear which he had brought along. It consisted of a converter placed in the generator space behind the 6 to 9 Mc. Command rx. Alf 3IE brought in an interesting set of figures and tables which he had compiled. It almost proved that within the metropolitan area, DX working ability was directly proportional to the elevation of the station.

Considerable time was spent in discussing the v.h.f. Group's exhibit at the forthcoming Models Exhibition and Bob 3OJ was appointed to act on the main committee for the v.h.f. Group. Laurie 3ALY has recently moved indoors to a new shack. The tx is a 6J8 xtal controlled and tripler to 24 Mc., 6J8 doubler and tripler, QV04/7 driving an 832; his beam is a 5 over 5, and the rx is a three tube 6J6 push pull converter into another 3-tube converter on 7 Mc., then into a BC433G at 1,500 Kc.

Max 3BQ has made contact with 2AJO at Coolamon on phone and has worked Bram 5ZAB at Naracorte since the erection of Bram's new 30 el. 2 mx beam, 100 ft. high. 3JX, of Hamilton, has worked 3PG cross-band 80 mx; hopes to have 2 mx converter going soon. 3TA, at Horsham, reports hearing a number of Melbourne stations on 2 mx; tx will be in operation shortly.

Don't forget to look for the chaps in Gippsland, active at present are 3ZD at Warragul, 3TH at Yinnar, 3TO at Yellourn and 3DI at Leongatha. A new one in Gippsland is 3ZAB at Traralgon with an SCR522 on 144.14 Mc. 3AKE is active on 2 mx from Geelong. Tony 3ZAZ at Glenenthompson is operating on 144.46 Mc. and using 8w. into a dipole; has worked 3AKR and 3AGD and is frequently on the band. Another new Z call, Glen 3ZBJ, is now active on the 2 mx band.

3ZBH and 3AHL have their gear ready to operate on 288 Mc. They will be on the air each evening from 1830 hours and will make contacts on 144 Mc. first.

50 Mc. news. Who requires Northern Territory for 6 mx W.A.S.? 5TL, of Alice Springs, is building gear for 6 mx and hopes to be on by the time it opens up again.—3LN.

SOUTH AUSTRALIA

50 Mc.: There is very little activity on this band, the only stations to be heard are Ken 5KC, Col 5RO and your scribe. The future of 50 Mc. and later 56 Mc. is very uncertain, the proposed change from 50 to 56 Mc., and secondly, t.v.i. being the main deterrents to any activity. This band is very prone to t.v.i. as many Ws have found out. However, one compensating factor is that during the summer months we will be able to watch the Interstate television, i.e. if the transmissions are around the 50 Mc. band.

144 Mc.: This band is undoubtedly "the v.h.f. band." The possibilities for experimenting and long distance ground wave communication are very great, there being much to do that hasn't been done before in the way of rx and antenna design. Stations operating on this band are 5AV, 5HD (Bill does not get on very much these days due to pressure of work), Ian 5ZAA, Neil 5ZAW with a much improved signal, Neil had a very unusual fault in his tx—too much grid drive of all things! Others operating include 5RO, 5KC, 5LE and 5RI.

Last month your scribe journeyed by car to Whyalla and Port Lincoln complete with 2 mx converter and 3 el. Yagi beam. At a pre-arranged time sigs were heard from Col 5RO, using 10w. input to a 522 and 3 el. beam. His sigs were R3-R5 with signal strength peaking on S4-S5. The use of c.w. would have made copy a solid R5. Signals were also heard from 5MT's tx using 100w. input and a 12 el. beam. Signal level at Whyalla varied from S6-S8 on peaks, the distance being approx. 150 miles.

On 18th of last month your scribe exchanged RST numbers on 144 Mc. with Trev 3ATR in Warracknabeal, sigs both ways S2-S5 with the usual QSB. On the same night your scribe also copied Ray 3ATN, but his signal was well down below Trev's in level. At 2150 hours S.A.S.T. the same night, Trev copied 5MT's phone on 144 Mc. for a period of 2 minutes.

The following night, Monday, 20th, 5MT's sigs were again heard by Ray and Trev, how-

BOOK REVIEW

NEW ZEALAND AMATEUR CALL BOOK

Published by N.Z. Association of Radio Transmitters.

The book contains a complete list of all New Zealand Amateur Stations and also lists overseas members and non-transmitting members. Further sections include Hints on Operating Procedure, Amateur Frequency Allocations, W.V.V. Schedule, N.Z.A.R.T. Standard Frequency Transmissions, Official DX C.C. Countries List, Country Prefixes and a list of N.Z.A.R.T. Contests and Overseas Awards not all of which are given in detail, it being necessary to refer to various issues of "Break In" for full particulars.

Copies are obtainable from the New Zealand Association of Radio Transmitters, Box 970, Dunedin, N.Z., and the price is 2/6 (New Zealand) plus 2d. (N.Z.) postage, approximately 3/4 Australian.

ever they were much weaker than the previous night. No more tests took place until Sunday, 27th, and once again Trev identified my 2 mx sigs, but they were extremely weak. It does appear from the above results that a signal can be heard just about every try over this difficult 270 odd mile path.—5MT.

WESTERN AUSTRALIA

Despite lack of publicity, the attendance at the newly formed v.h.f. Group has steadily risen and about 20 people attended the June meeting held at Rollo's home. Welcome visitors were Bill 6DX from Kalgoorlie and Don 6DW from Bruce Rock. Sid 6SJ was our lecturer and gave a very interesting talk on transistors and demonstrated a transistor set built by him. Ralph 6ZAD passed around his new converter which is very similar to the r.f. end of the D.M.E. rx. 6AK5/6J6 cascade, 6AK5 pentode, 6AK5 mixer. The thanks of members goes to Rollo and Mrs. 6BO for their hospitality.

144 Mc.: Quite a co-operative effort is being made to increase the mobile activity on this band. Len 6ZAT is building a tx using a QCC04-15 tripler in the final, Don 6ZAK is building the rx and Ron 6ZAR is providing the antenna and the car. Just whose call sign will you use boys?

The distances, being worked in the Eastern States should provide food for thought for any country Amateur who is thinking of coming on 2 mx. The present lack of any active country stations is not encouraging for anyone to improve their gear. Any country Amateur who would like information and even a portable expedition to his QTH should contact any of the v.h.f. gang in Perth!

Rollo 6BO has just completed his receiving station for Adelaide air radio on 133 Mc. approx. When he hears Adelaide then 2 mx may be open! Don't scoff! He has worked into Adelaide on two occasions!

The v.h.f. Scramble will have taken place when this appears in print and I wonder how many people will be building more selective rx's. Jim 6RU, always a contest man, has already sharpened up his 522 in preparation!

288 Mc.: This is the band of activity. 6ZAV's new converter mentioned in last month's notes has been working very well and Don has now commenced a xtal controlled tx using 832s as a tripler from 96 Mc. and as a final. Don was able to provide Stan 6ZAS with his first contact on this band. Stan is using a mod. osc. and a super-regen. rx. Denis 6AW has a xtal controlled 832 tripler-final using 2w. and was able to work Don 6ZAV. Tests with Wally 6ZAA were unsuccessful. The 6BO/6ZAA contact has still not taken place despite the addition of a grounded grid p.p. r.f. amplifier to the latter's converter.

8ZAA is building a xtal controlled tx using 12AT7s for mobile use and this should create additional interest. Murray 6ZAM, Lionel 6ZAE and Cecil 6ZAZ, who have promised activity on 288 Mc., have still to appear. Lionel and Murray, at the top of the Darling Scarp (1,000 ft. and overlooking Perth), should work some fine distances!—6ZAA.

AMATEUR CALL SIGNS

FOR MONTH OF MAY, 1955

NEW CALL SIGNS

- VK— New South Wales**
 2FG—J. H. Gore, 12 Pearl St., Newtown.
 2FY—K. A. Kimberley, 214 Wardell Rd., Dulwich Hill.
 2AOP—E. Pearce, 19 Meehan Gardens, Narrabundah, Canberra, A.C.T.
 2ATR—D. S. Robertson, 29 Carrington St., Deakin, Canberra, A.C.T.
 2AUD—K. E. McDonald, 5 Lombard St., Balgowlah.
 2ZBG—R. S. Graham, 764 Canterbury Rd., Belmore, Sydney.

Victoria

- 3FR—G. L. F. Smith, 43 Alexandra St., Montmorency.
 3MT—Royal Melbourne Technical College, 124 Latrobe St., Melbourne.
 3OH—A. Holst, 19 Flintoff Ave., Toorak.
 3AAR—L. H. Ross, Hughes St., Upwey.
 3AFC—F. Clark, 164 Middleborough Rd., Blackburn.
 3ANK—N. A. Town, "Weald Cottage," Leith Rd., Montrose.
 3AXW—V. G. Wyatt, 38 Queen St., Cobram.
 3ZAT—D. D. Tanner, C/o. A. J. Savage, Scoresby Rd., Bayswater.
 3ZBI—I. R. Woodman, 24 Fewster Rd., Hampton, S.7.
 3ZBQ—B. W. Heinze, Liverpool Rd., Kilsyth.

Queensland

- 4CY—H. R. Greber, Station: 6 Miles N.N.W. of Yeppoon; Postal: P.O. Box Yeppoon.
 4IA—B. F. Darragh, Willis Island.
 4ZAW—G. Whitehead, 4 Blarra St., Yeerongpilly, Brisbane.

South Australia

- 5DV—D. B. Vaughton, 149 Burbridge Rd., Brooklyn Park.
 5TM—R. D. Martin, House 20, Radium Hill.
 5TS—Metro Radio Club, Simpson's Buildings, Gawler Place.
 5ZAJ—J. A. Gibbs, 208 Hutt St., Adelaide.

Tasmania

- 7XD—K. W. Nutt, Station: Roseville Guest House, 11 Bedford St., New Town, Hobart; Postal: C/o. Hydro Electric Commission, P.O. Box 631B, Hobart.
 7ZAT—K. A. Thomson, 126 Bowen Rd., Lutana, Hobart.

CHANGES OF ADDRESS

- VK— New South Wales**
 2BV—Waverley Radio Club, 47 Meymott St., Randwick.
 2DM—D. W. McDonald, 5 Union St., Newcastle.
 2EA—L. Martin, 104 Dobie St., Grafton.
 2IY—T. H. Cahill, 11 Creedon St., Railwaytown, Broken Hill.
 2JH—J. V. Hutchison, 17 Lambert Rd., Bardwell Park.
 2LI—M. P. Moore, 35 Towner Gardens, Page-wood.
 2LK—B. T. Turner, 46 Hassell St., Westmead.
 2ON—R. L. Douglas (Dr.), 5 Mason's Pde., Gosford.
 2SQ—W. J. Weller, 56 Buckingham St., Canley Vale.
 2WQ—R. T. Wilkins, 11 Thomas St., S. Grafton.
 2AEQ—N. S. King, 43 Bent St., Nth. Sydney.
 2ARH—R. R. Howe, 13 Arana Rd., Mona Vale.
 2AYG—P. Gresser, Lot 30, Maxwell St., Balgownie.

Victoria

- 3LU—M. Muller, St. Leonards Rd., Healesville.
 3MP—S. V. Hosken, 69 Mason St., Hawthorn, E.2.
 3OY—W. D. Iliffe, 85 Warrigal Rd., Oakleigh, S.E.12.
 3QM—B. I. Learmonth, C/o. Mrs. Hiscok, Frederick's Lane, Portland.
 3SN—G. P. Lee, Station: 139 Madden Ave., Mildura; Postal: Box 539, Mildura.
 3AAM—A. H. Sengotta, 16 Hawthorn Ave., Caulfield, S.E.7.
 3AFF—L. B. Fisher, 11 Erskine Ave., Cheltenham, S.22.
 3AGE—M. G. Esam, 7 Nankivell St., Colac.
 3ALJ—G. L. Moore, 3 Wheatland Rd., Malvern, S.E.4.
 3AMO—M. S. Lang, 69 Bayview Cres., Black Rock.
 3AWQ—W. Reilly, 39 White St., Wangaratta.
Queensland
 4GD—L. H. Dodds, 24 Townsville St., West End, Townsville.
 4GL—J. F. Langford, Gundiah, N.C. Line.

ROSS HULL V.H.F. CONTEST

Owing to an oversight, VK5JO was omitted from the list of VK5s in the official results published last month. Herewith are the South Australian scores:

| | |
|-------|-----------|
| VK5MK | 1620 Pts. |
| VK5QR | 1205 Pts. |
| VK5JO | 729 Pts. |
| VK5AX | 307 Pts. |
| VK5ZL | 264 Pts. |

- 4LM—L. E. H. Mallinson, 14 Hill St., Valley, Brisbane.
 4RJ—R. J. R. Delbridge (Rev.), 16 Grove St., Toowong, Brisbane.

South Australia

- 5DZ—J. A. Casey, C/o. Station 5CK, Crystal Brook.
 5FN—R. J. Poole, 37 Stanley Ave., Blair Athol, Prospect.
Tasmania
 7AB—D. H. Fisher, 17 Pickard St., Lenah Valley, Hobart.
 7RY—F. E. Nicholls, 22 Haig St., New Town.

Territories

- 9EB—K. S. Mullan, C/o. Crowley Airways, Lae, N.G.

CANCELLED CALL SIGNS

- VK—**
 2ND—K. W. Nutt. Now VK7XD*.
 2AXZ—K. A. Kimberley. Now VK2PY*.
 2ZAP—E. Pearce. Now VK2AOF*.
 3MT—Melbourne Technical College. Change of Name*.
 3AQJ—K. E. McDonald. Now VK2AUD*.
 3ZAF—F. Clark. Now VK3AFC*.
 3ZAT—N. A. Town. Now VK3ANK*.
 5FL—R. C. Harris.
 5HO—C. L. R. Bullock.
 5TS—Dept. of Civil Aviation. Change of Name*.
 5XO—A. W. Kelly.
 5ZAM—R. D. Martin. Now VK5TM*.
 7MR—D. M. Richardson.
 1PG—J. H. Gore. Now VK2PG*.
 * See New Call Signs.

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DX ACTIVITY BY VK3AHH*

PROPAGATION REPORT

8.5 Mc.: Break-throughs to North and South America and the Far East occurred around 0700-1400z when stations there were active.

7 Mc.: Fair to good conditions existed during the month. Long-path (0500-0800z) and short-path conditions (1900-2300z) to Europe were noticed. The American continents, the Pacific Islands and the Far East were workable between 0800z and 1300z, with long-path conditions to the North American East Coast around 2100-0000z.

14 Mc.: A marked improvement of conditions on this band can now be reported. No definite times can be mentioned for Europe and North America as both continents were workable from about 1800z to 1200z. Central America and Africa appeared around 0200-1100z.

21 Mc.: Here more or less steady conditions to North America and break-throughs from Africa have been reported.

27/28 Mc.: North American signals continued to appear around 0200-0300z.

NEWS AND NOTES

The best news for a long time: Well known DXer Bob Ford, ex-AC4RF, has been released and is now back in the free part of this planet, anticipating operation as VS6. (From W6YY and ZL1CI).

ZC2PJ (Cocos Island) will return to Ceylon in August, but hopes to arrange for another ZC2 to come on thereafter. (from W6YY.)

VS4CT should now be active from Sarawak and remain there until September-October. (From 3YS and W6YY, S.C.DXC.)

The good, old 80 mx band has again been of major interest to DXers specialising in DX on that band. Recently, the appearance of CE4AD (3506 Kc.) and his contacts with VKs 2QL and 5KO caused a lot of excitement. Also, 4STDJ, ZD2DCP, EL2X, TI2PZ and ZC4JA have been or expect to be active, and KL7 stations are looking for VKs on 80 mx phone. (From 5RI, ZL1CI, N.C.DXC.)

A DXpedition to the Caribbean area —by Ws 6OXs and 6VUP—did not operate from PJ2-St. Martin Island, but is supposed to be active from British Virginia Island (Leeward Islands). (From 3HT, 4YP and W6YY.)

Operators at VS1GK come from VK land. (From 2AQJ.)

VR6AC is reported to be on 14,143 noon, VK time). (From W6YY and S.C.DXC.)

By courtesy of the Northern California DX Club, here are the times for this year's International DX Contest: Phone: 22nd Oct. 0200z to 24th Oct. 0200z; C.w.: 29th Oct. 0200z to 31st Oct. 0200z. Rules are the same as before although this year total all-band top scorers and top scorers on each single band in each VK licensing area are eligible for certificates. However, no certificates will be issued to any contestant operating less than five hours or having less than fifty contacts.

This year's Macquarie Island team recently showed up on 7 Mc. (From 3AJK, 3ALQ.)

VR3B is another Amateur on Fanning Island. (From 3CX.)

KT1EXO is ex-TI2EXO (from 2QL). XW8AB is active from Laos (from 3JA).

* Hans J. Albrecht, 10 Belgravia Ave., Box B111 North, E.12, Vic.

* Call signs and prefixes worked.

* —zero time—G.M.T.

This month the S.w.I. Group of the Vic. Div. W.I.A. can look back upon one year's existence. During the year the activities of the Group have been very successful. Also, W.I.A. L numbers are now being issued and a Victorian S.w.I. QSL Bureau has commenced operation (Manager: Ian J. Hunt, 9 Malua St., Ormond, S.E.14). Congrats boys and best wishes for the years to come!

DXers and Listeners everywhere! Please do not forget the list of b.c. stations in our exclusive band 7.0 to 7.1 Mc., published in "A.R." 7/55! Send your report and help to keep 7 Mc. clean!

QTHs OF INTEREST

(From 5WO, BERS185, N.C.DXC., S.C.DXC.)
AP2C—P.E.M.E., Cannought Lines, Quetta, Pakistan.

VQ3FN—Louis Staalberg, C/o. Williamson Diamonds Ltd., P.O. Mwadui, Tanganyika.

XZ2SY—P.O. Box 833, Rangoon, Burma.

ST2DB—P. O. Box 518, Khartoum.

EA6AR—Dr. Miguel Bordoy, Pont-y-Vich 14, Ralma, Balearic Islands.

HR3HH—Hal Holler, C/o. Standard Fruit Co., Coyotes, Honduras.

BV1US—M.A.A.G. Formosa, A.P.O. 63, P.M., San Francisco, Calif., U.S.A.

VS4CT—Via VS2 Bureau.

JZ0PS—Box 52, Hollaradio, Dutch New Guinea.

VR6AC—Floyd H. McCoy, Pitcairn Island, South Pacific Ocean.

Ex-VF5LH—VR2AM, Les Hammett, Suva, Fiji.

KG1AA—931 Squadron, A.P.O. 23, C/o. P.M., New York City, N.Y., U.S.A.

KG1FR—2004th A.A.C.S. Squadron, A.P.O. 121, C/o. P.M., New York City, N.Y., U.S.A.

ACTIVITIES

8.5 Mc.: Frank 2QL heads the list with CE4AD, W6, W7, VE7, and JA1CR. Neville 2APL adds W3. Bud 2AQJ reports Ws, while Steve 3AB8 heard JAs and Ws on phone. Here at 3AHH the log shows W9* and W6, KL7HJ.

7 Mc.: 2QL heard HRIJZ, Laurie 2AMB reports HK3BY, VE7, KP4RE, FK8AB, G2HLP, YJJA on c.w. and HP3FL, Ws* on phone. 2AQJ QSOed FK8AQ* and heard JA, DU, Ivor 4XB adds HRIJZ* and CO7ANG*. Jack 8AJK worked VKIDJ* on phone. Don 8ALQ spoke to HP3FL*, Ws* and VK1ZM*. Roy 8AU also phoned with Ws*. Dave Jenkin heard HRIJZ, VE3, and DUTSV. Norman Clarke reports a number of Ws on phone.

14 Mc. C.w.: 2QL: KT1EXO*, K6JDU/VO6* and OX3AY, ZC2PJ, ZD6BX, EA8BP, 2AMB: VK9BW*, 2APL: YV5BJ*, FK8AJ*, 2AQJ: JA*, FK8AH*, KL7PI/KL7*, VS1GK*, VR2AA*, Alan 3CX: YN1AA*, VR3A*, VP9BM*, Neil 3HG: EA3*, EA9BC*, VE7*, ZS1*, XE1*, Gs*. Jack 3JA: ZS1CK*, ZS2BC*, DL*, YU*, EA3*, VP9CB*, ZC2PJ*, CR7CO*, KG1AA*, 4X4FQ*, I*, PJ2AR*, ZD6BX*, ZM6AG*, G15UR*, OH*, SM*, FK8AH*, FK8AC*, PA8BG*, KJ6KW*, VR2AR*, OE7FW*, OE13USA*, ON*, Gs* and XW8AB. Ken 3KR: EA3*, HB1PQ*, and VQ8CB, VQ6LQ, Bill 3TX: YJ1DL*, Europeans: 3XB: ZM6AB*, DL*, Bob 4RW: KZ5BR*, EA3*, YU*, YN1PM*, XE1MJ*. John 5HI: DL, Ray 6BK: JA*, VE7*, Austin 5WO: G*, ZS6UO*, ZSS1T, 8AU: KL7*, VS6*, FMTWQ*, VE6*, VE7*, VE8*, OH*, CO2SW*, G*, XE2MB*, KP4*, YN1AA*, YV5AE*, Dave Jenkins: JA, ZM6AS, VP6KL, YV5BZ, TI2AB, CTI, CR2BZ, KP4DH, HB9, VE7, FK8AC, CR2AR, EA3, I, VE6, JZ0AG, SM, KP4ZC, YJ1DL.

14 Mc. Phone: 2APL: ZS. SJA: ZS6QW*, ZSSJN*, ZS4GK*, ZS2DT*, ZS1CG*, ZS6AJC*, ZS6FN*, DL*, XE3L*, XE2KW*, XE2HZ*, XE1CM*, KL7AV*, KL7BDK*, KL7BDD*, KL7FAP*, W4BKS/KL7*, KL7ADR*, KL7ML*, 8TX: 5A4*, YV, CO2, Rex 8UR: VP9G*, 4RW: FMTWQ*, ZM6AT*, TG9A1*, TG9MB*, KZ5FA*, VE5*, YS1MS*, ZD3BPC*, KC6ZB*, KA0LJ*, 5HI: VE5*, TG9MB*, TG9KF*, TI7RAC*, I*, TIJH*, 4STYL*, VP9BN*, CO3JL*, CO2OS*, XE2FC*, DL*, TG9AC, YV5AB*, ZS6ABY*, ZS6CY*, ZC8ZK*, XE2HZ*, KL7AIZ*, KE1DU*, YS1MS*, HE1OP*, VR2CW*, 6WO: KG4AP*, TG9RV*, YV5FK*, TI2BX*, CO2BK*, CO2CY*, 5A4TK*, XE1MJ*, EA8AZ*, 5A4TK*, I*, TI2JS*, HC2RE*, XE1RE*, ZS6FP*, ZS1SW*, VQ6FK*, ZS6XL*, ZS5MP*, ZS6ADB*, ZS5JM*, EI2W*, BV1US*, 8AU: ZC5SS*, Jim Hunt: ET2AB, ET2US, ZS5, ZS6, CN8, YS1, CX2, LU6, LUT, LUI, CE2, PY4, PY1, TG9, CO2, CO1, CO3, XE2, XE1, XE3, TI2, VP9, YV5, HCl, EA3, PA0, Gs, ON, DL, SM, F, I, OD5, HZ1, 4X4, HB9, EI9, OES, 8S4, GW, SV0, VS6, VS4, VS2, ZM8, RV2, KV4, DU7, XZ2, C3, VU2, AC5FT, DU6, KC8, KL7, VE3, VE4, VE6, VE7, Dave Jenkin: CO2CY*, Norman Clarke: VR2, XE1, VE5, VE4, CO2.

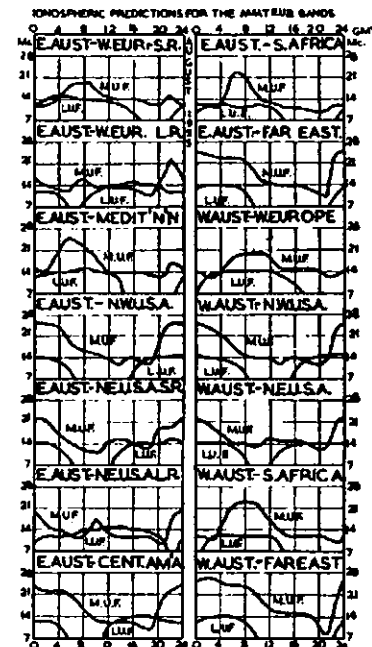
21 Mc.: 2QL: VQ4RF, Reg 3GX: Wa, Bert 8HE: Ws and ZSs, 8ZU: Ws, 3AEP: Ws, Jim Hunt: Ws, W/MMS, KA2, KA8, KG6, KH6s, VK9, VS6, DU7, 4S7, VS2, TI2, KZ5, XE1, HCl, G3, DL6, HB9.

27/28 Mc.: Frank 8ZU heard W6, WO, KH6, and Jim Hunt adds VK9BS.

Rare QSLs were received by: 2QL: PJ2AQ, KC4AB, PJ2AA, CR7LU, LU0DEL, LU1BZ, KP4CB (3.5 Mc.), VQ4EG, 2AMB (all for 7 Mc. contacts): KZ5BE, KZ5MN, VS2CR, LU6WD, DL1FF, 8JA, ZC2PJ, 5HI, VQ8CB, PJ2AJ, GC6PQ, VQ4EG, 5RK: VQ4BNU, 5WO: HRSHH, XE, IMJ, BV1US, 4S7S, VK1EG, ST2DB, 4X4FV, ET2MZ, XZ2SY, LU3FAQ, BERS185, AP2C, EA6AW, FASOA, I1BNU/Trieste, TI2PZ, VQ3FN, ZC4P, KZ5FA. SAHH: PJ2AQ, VQ4EG (7 Mc.), CT3AB.

Thanks to W6YY, ZL1CI, the Northern and Southern California DX Clubs, and VKs 2QL, 2AMB, 2APL, 2AQJ, 3CY, 3GX, 3HE, 3HG, 3HT, 3JA, 3KR, 3TK, 3UR, 3VB, 3VE, 3ZU, 3AEP, 3AJK, 3ALQ, 3ASS, 4RW, 4YP, 5HI, 5RI, 5RJK, 5WO, 8AU, and a.w.l.'s BERS185, Jim Hunt, Dave Jenkins and Norman Clarke.

PREDICTION CHART FOR AUG., 1955



STATE ELECTRICITY COMMISSION OF VICTORIA CARRIER TELEPHONE & ELECTRONICS SECTION

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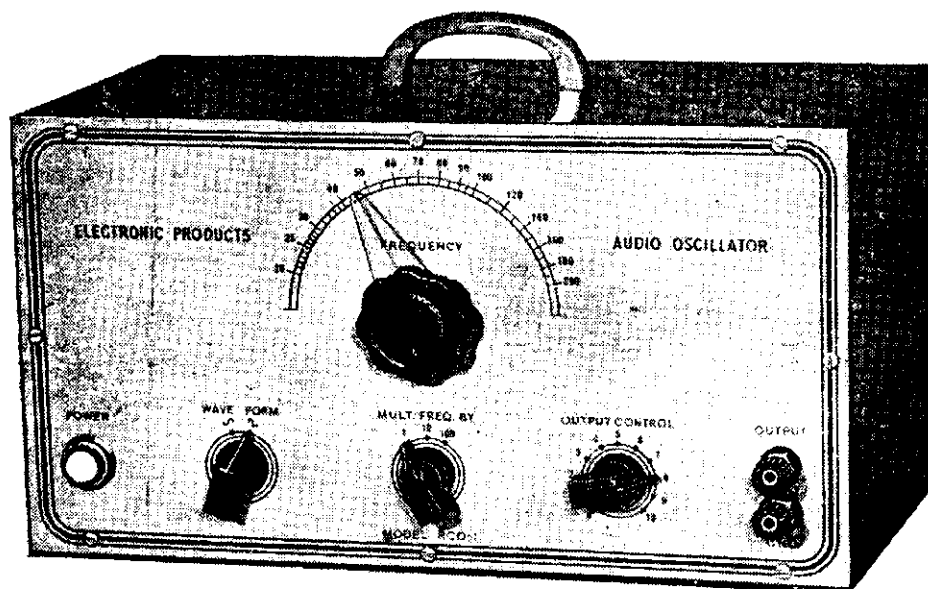
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FEDERAL, QSL, and DIVISIONAL NOTES



FEDERAL

FREQUENCY CHANGE

In view of the change from 50-54 Mc. to 56-60 Mc. (the first of the v.h.f. bands) at the beginning of 1956, it has been felt a period of time for adjustment would be very advantageous for operators as well as allowing an uninterrupted period for the Ross Hull Contest.

Following approaches to the Amateur Administration, permission has been granted by the Authorities for—

The 56-60 Mc. band to become available as from the 1st November, 1955, and operation to cease on the 50-54 Mc. frequency on 31st January, 1956.

This concession will allow Amateurs some chance of comparing the bands and yet maintain continuity of operation while signals can be heard.

FEDERAL COUNCILLOR FOR VK3

Federal Executive notes with regret that Jim Corbin, VK2YC, has found it necessary to relinquish the post of Federal Councillor in VK2. In spite of his many and varied duties, Jim has given full attention to items on a Federal level and has kept Executive posted with matters relating to the New South Wales Division.

The important post of Federal Councillor has been assumed by Bill Lewis, VK2YB. Knowing Bill's enthusiasm and activities in the Institute, it can be said with confidence that, in him, VK2 has found a worthy successor.

RADIO CLUB BOLIVIANO

An applicant for membership of the I.A.R.U. is the Radio Club of Bolivia.

The Radio Club Boliviano is the national Amateur Society for that country. It has a total membership of 131, with 89 licensed. There is a total of 69 Amateur Stations in the country and the official address of the society is Plaza Venezuela No. 21, F.O.B. 2111, La Paz, Bolivia.

FED. CONTEST COMMITTEE

NOTES ON CONDUCT OF REMEMBRANCE DAY CONTEST, 1955

These notes and suggestions are published as an aid to the contestants and the checking committee and all entrants are requested to follow them as far as possible.

The rules for 1955 are unchanged, but a rule specifying calling and logging procedure for contestants using a station other than their own has been added. The calling procedure specified has the approval of the P.M.G. Dept. and should indicate to all stations that a different operator is on the job and that a further contact with that call sign is valid.

Interpretation of rules. The committee has authorised the following interpretation of specific rules for the purpose of checking logs:

Rule 16: Logs not received by the Contest Committee by the due date will be disallowed except those from VK9 posted before the due date and logs from VK1 transmitted by radio.

Rule 19: Scoring Logs will be those having a minimum of five valid contacts according to rule 11, etc.

Rules 11 and 14: A valid contact will have the call sign and cipher sent by the station worked, completely correct. It will be assumed for checking purposes that the station sending the cipher will have it correctly recorded.

Rule 11: Logs with serial numbers commencing at over 100 or numbers not in sequence will be disallowed, except where it appears that a genuine error has been made in the sequence.

General: Where doubt exists, the contact will be allowed. All checking will be done in the spirit of the contest.

Operating. Checking last year showed that there were a considerable number of what appears to be clerical errors in the logs submitted. As an aid to reducing these errors, the following suggestions are made.

If you use a rough log for the contest, use sheets ruled up in a similar manner to the proper log; it is easier to transcribe if all columns are in the same order. If there are 30 lines to the page, omissions or duplications should become apparent.

Write legibly and ensure that the cipher you give is correctly recorded on your log. The figures you show as having given are used to check what the other fellow shows as having received.

Acknowledge cipher received and wait for an acknowledgment of cipher given, because if a cipher is missing from either log a complete exchange of numbers has not been made and both contestants lose that contact. Ensure that the band of operation is correctly recorded each time you change bands.

Logs. Where possible use the standard log sheet, if this is not possible, use quarto paper ruled in a similar manner to the standard log and with 30 lines.

Have 30 contacts on each sheet with the serial numbers in correct sequence. It is a distinct help in checking if it is known that contact No. 167 appears two-thirds the way down on the sixth sheet—all contacts for checking are located by the serial number sent.

Make your log legible; checking is done at night and after several hours "hard to read" letters and figures are hard to read. If typed use double spacing; if written use ink not pencil. Do not use faulty ball point pens. Do not submit a separate log for phone and c.w.

Awards. Logs will be eligible for awards as follows: OPEN—Logs of contestants showing scoring contacts by both phone and c.w.; PHONE—Logs of contestants showing scoring contacts by only phone; C.W.—Logs of contestants showing scoring contacts by only c.w.

General. In the 1954 Contest, 19 logs were disallowed for breaches of rules 11, 16 and 19, so—

1. Ensure that your serial numbers are correct.
2. Ensure that your log is sent to your Divisional Secretary for membership certification in time to be forwarded to the committee before the due date.
3. If you are getting only the minimum number of contacts to qualify get two or three extra to ensure that you have five valid contacts.

Good hunting fellows, and may the R.D. Contest 1955 be the best ever.

CALL SIGNS

Attention of members is again drawn to the habit of omitting the prefix "VK" when announcing call signs. This is particularly noticeable in the case of phone operation.

Such practice is not in accordance with International requirements and contravenes the Wireless Telegraphy Act. Operators should be careful that they use the full call sign allotted to the station concerned.

FEDERAL AWARDS

W.A.V.K.C.A.

One application received during the month from Mr. C. H. Jackson, 541 Thorn Ave., Palm City, California. Mr. Jackson gained the certificate under the call sign KH6PY where he was stationed during 1948-9 on active duty with the U.S. Navy. His current call sign is W6WBG and he is now trying to earn another W.A.V.K.C.A. Award from his present location. Certificate number three is being issued to Mr. Jackson.

DIVISIONAL AWARDS

From correspondence received during the month I have gleaned information to the effect that there are what appears to be Divisional Awards in existence, i.e. other than the Ross Hull, Contest Committee Awards, etc. Since questions are being asked and cards are coming to hand, it would be appreciated if Divisions would advise me of any awards in existence in their areas. Advice of this nature will place me in the picture and I can then answer the queries which come to hand.

—Gordon Weynton, VK3XU, Manager.

VICTORIA

This month I've decided that there will be no notes in the usual sense of the word. Other interests kept me away from the June meeting, and as nobody supplied any gen on the meeting there will be no write up. The Tx Hunt and country areas will be covered in the usual manner. Anyhow, in my humble opinion, too much space is devoted to notes! (Pause here and wipe away the tears shed by the VK5 scribe.)

For this month I propose a new line of attack. The Federal QSL Bureau, the Contest Committee and sundry other departments are getting space each month to report on their activities, but the Mag Committee never seems to get a say. Well, the VK3 Division supplies the manpower for this committee, so the VK3 notes space is, for this month, given free, gratis and for nicks to them. Heaven help the compilation department if THESE notes are blue pencilled.

There should be no need to list the members of this committee as their names appear on page 1 for everybody to see, but the actual work they do may not be appreciated. One night each month, generally the coldest or wettest, the committee meets to discuss all matters pertaining to the mag. Anybody leaving the meeting before midnight is a piker, and runs the risk of not being wished a Merry Xmas by the Editor. The main thought behind all meetings is to give the readers of "A.R." as much as is humanly possible for their money without sending the magazine bankrupt. At the same time we have to endeavour to obtain the largest circulation possible and cater for all tastes, be they v.h.f., h.f., constructional or theory, s.w.'s. or active Amateurs.

Your committee feels that more often than not, the balance of technical articles to notes and advertising has not been the best, but we have done our best with the limited number of articles available. The remedy is in our readers' hands. We rely on them for material to publish. Don't think because your article takes four or five months to see print that we have more than we can publish. If an article is straight forward, does not require any drawings, or only one or two that are small and simple, there is every chance of it being published within two months. If, on the other hand, a large number of drawings or a complicated circuit diagram is required, the understaffed technical department, all of whom work in their own time, and are forever tracing the clock in an endeavour to make the deadline, must take longer to prepare your article for publishing.

Talking of deadlines, there is a growing tendency for various scribes to be late with their material. The deadline is the 8th of each month, and unless this date is adhered to it is impossible to have the type set, the printer's proofs checked, and the mag. out on time. The alternative—late notes not published. What can you do to help?

No doubt we ourselves are open to criticism, so let me have a say first. We have big plans to improve the magazine. We want to see more pages and a better class paper. Above all, we desire to publish a few photographs.

This programme is more ambitious than it looks in cold print, and will take quite some time to fulfill, but with your support we will do it.

We particularly appeal to the s.w.'s. for articles of interest to their groups—and we mean articles, not notes. We look to them to supply the Amateurs of the future, and in their ranks there must be many with the ability to describe equipment they have built which could have a wide appeal not only to their groups, but to active Amateurs as well.

I started out with the intention of outlining some of the activities of the Magazine Committee, but so far have only touched on a few matters we have discussed and which, I felt, should be aired publicly. Now space has caught up with me and the original intention will have to be shelved till another scarcity of notes eventuates, or the Editor comes and humbly asks that this matter be continued. In the meantime, if there is anybody with drawing ability prepared to help us, even if only for a few months, please come forward. The salary? Same as we pay SPS!!

September Meeting.—At the meeting to be held on 3rd August an announcement will be made concerning the September meeting. The position is that the Radio Theatre will not be

"ACOS" CRYSTAL MICROPHONES and MICROPHONE INSERTS

A Complete Range For Every Purpose

DESK OR HAND MICROPHONE

MIC 36

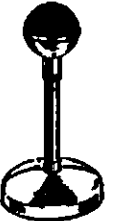


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Housed in attractive plastic case, this Microphone is ideal for home recording and public address, etc. Response unexcelled for its size and price. The performance is not affected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s. Recommended load resistance not less than 1 megohm dependent on low frequency response. Can be supplied complete with switch and floor stand adaptor as required at a small extra cost.

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MIC 22



This omni-directional Microphone is robust in construction, with a pleasing appearance. Vibration, shock or low frequency wind noise will not affect the performance. The low frequency cut-off is dependent on the load resistance. The cut-off is given by the quotation, $F = 80 \div R$, where $F =$ c.p.s., $R =$ megohms. An adaptor (floor mounting) is available at low extra cost.

SPECIFICATION

Output level = -50 db ref. 1 volt/dyne/cm².
Output impedance—equivalent to approximately 0.002 uF. (0.8 megohm at 100 cycles).
Frequency response—substantially flat from 40 to 6000 c.p.s.

Recommended load resistance—not less than 1 £9/18/6 megohm, dependent on low frequency response.

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Designed to meet even the most exacting requirements, this Microphone incorporates the world famous floating crystal sound cell construction. Its special characteristics are that its fine performance is not affected by vibration or shock. The fidelity is not impaired by low frequency wind noise.

SPECIFICATION

Recommended load resistance—not less than 1 megohm.
Output level -65 db ref. 1 volt/dyne/cm².
Frequency response—substantially flat from 30 c.p.s. to 10,000 c.p.s.
Directivity—non-directional.
Size—2½" spherical diameter.
Connector—Standard international 3-pin.

MIC 16



£24/19/6

LAPEL MICROPHONE

MIC 28



£5/19/6

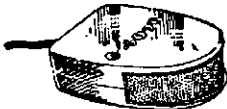
Designed to give freedom of movement, this Microphone is small and non-directional. Housed in a soft moulded rubber case, which gives protection against shock, it is provided with a pin at the rear of the case for pinning to the lapel.

SPECIFICATION

Output level—approx. -55 db ref. 1 volt/dyne/cm².
Recommended load resistance—5 megohms.
Frequency response—level throughout the whole of the audible spectrum.
Capacity—0.0015 uF. at 1000 c.p.s.
Impedance—100,000 ohms at 1000 c.p.s.
Cord—6 ft. shielded cable.
Size—1-9/16" wide x 2¼" long x ½" thick.

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MIC 35



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substantially flat response from 50 to 5000 c.p.s.

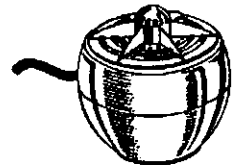
SPECIFICATION

Output level: -55 db ref. 1 volt/dyne/cm².
Cable—approx. 4 ft. of co-axial supplied.
Weight—6 ozs. unpacked, 7 ozs. packed.
Dimensions—microphone only 2¼" x 2½" x ¾"

The MIC 35, undoubtedly the best value ever offered, is ideal for amateur transmitters, public address, etc. Housed in an attractive die-cast case, it features a high sensitivity and substantially flat characteristics. Provided with a built-in shunt resistance of 2 megohms, it will, when connected to the grid of the input valve, give a

HAND OR DESK MICROPHONE

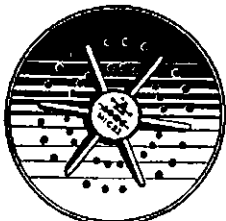
MIC 33



£6/18/6

This Microphone has been designed for the high quality public address and home recording field. High sensitivity and flat characteristics are obtained by a specially designed acoustic filter. Housed in an attractive plastic case with an unexcelled response for its size and price. Unaffected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s.

MICROPHONE INSERTS



(MIC 32 illustrated)

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These inserts are available in varying sizes ranging from as small as 15/16" square to 1-13/16" round, with various thicknesses from 7/32" to 9/16". Suitable for every purpose such as hearing aids, public address, tape recording, amateur broadcasting, etc., they have responses from 2250 c.p.s. to 3500 c.p.s. at 5 db to 30 db. Insert can be supplied with or without 10 meg. resistor as required.

MIC 32 insert, £2/15/6; all others, £1/19/6.

MICROPHONE INSERTS



(MIC 23 illustrated)

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available for the meeting scheduled for 31st August. This may be an opportunity for a visit of inspection and further information will be broadcast by VK3WL.

80 METRE TRANSMITTER BUNT

Although the weather was rather chilly, 29 of the gang attended the hunt. Reg 3ZAD, who hid the tx, was assisted by Barry 3JB. The signal received at the start was so strong that the competitors felt that the tx must be hidden in one of the gum trees on the plantation at the assembly point, however the reason for the excellent signal was soon realised when the competitors arrived on the location.

Reg and Barry had hidden it at the foot of the partly constructed new vertical radiator of one of the commercial installations at Rosanna. They used the tower, which is 150 ft. high mounted on huge insulators, as a vertical antenna. The location was a dream one, way up on top of a very high hill overlooking very picturesque country in all directions. Len 3LN was the winner.

EASTERN ZONE CONVENTION AT MAFFRA

The gang gathered at Keith Scott's (3SS) on Saturday, 11th June, and later 25 st down to a nice three course dinner at R.S.L. Club Rooms. After the usual toasts, the tables were cleared and the Convention gathered near one of the fires to proceed with plans for the next twelve months. YLs and XYLs gathered at another fire and held a knitting convention.

We missed the pleasure of the company of several regulars this year who just couldn't make it. Bill 3WE couldn't get away from Omeo, Lindsay 3IO, with a new daughter, had to stay and help at home, and we missed the 2 mx boys from Leongatha also Ron 3PR, who had to drop out through sickness of his parent; likewise Alan Jacka with a son unwell.

State President, Gordon Dennis, and his XYL were welcomed heartily, likewise Keith 3HK and Jeff 3YJ. David Tanner, whose home is near Maffra, was welcomed as a visitor from Melbourne and as another new Amateur. Gilbert McFarlane, living near Sale and awaiting his call sign, was welcomed, and this year we welcomed 3AAV and 3AJK as new members in the zone.

Zone officers are—President: Bert Budge; Vice-Presidents: Alan Jacka and Jack Sparks; Secretary, David Scott; Treas. and Zone Organiser: Graham Colley; Official Zone Stations: Ian Dunicliffe, assisted by 3PR, 3QZ, and 3TH; Notes Correspondent: Keith Scott, assistants Ron Jardine and Jack Sparks; Emergency Liaison Officer: Keith Scott.

The usual good resolutions were passed, namely, more activity on 2 mx ("look out Leongatha, here we come") and more portable activity. We feel inclined to adopt a spot frequency for the zone, possibly 144.18 Mc., which several zone stations are already using. It is proposed to start a radio club in the Latrobe Valley, so all those interested in this worthy project are urged to keep in touch with 3BB, 3AAV and 3AJK and lend their support to the movement. Pay up your dues boys, because Gordon Dennis showed us a long list of lovely disposals that will be announced very soon. After the business session, we screened some Kodachrome pictures taken by Keith Heitsch in Tasmania, and a few by Keith Scott of past Conventions, etc. Then a good supper was served and at 12.30 a.m. the gathering broke. Some of the more enthusiastic members went home with Ossie Kellas to Timbana where it seems he was assisted to evacuate some 807s, said function lasting till 4 a.m.

On Sunday a group inspected the Maffra Milk Products Factory, then had a poultry dinner at the local and afterwards Journey to Glenmaggie Wier where photography and ear bashing were the order of the day. After a good typical Eastern Zone feed, the boys broke off about 5 p.m., voting the Convention a "good show." Next Convention is to be held at Morwell in June, 1956.

Leo 3ALS is on 6 months' long service leave. Have a good time Leo, but let's hear more from you when you return. The zone congratulates Col Gibson on his engagement. Best of luck Col! Zone members, we want to hear you on the zone net, 2,000 hours 3650 Kc. every Sunday. We are after the Klunneer Trophy this year, so let's get more active.

SOUTH WESTERN ZONE

John 3AGD, at Dunkeld, is keeping his regular 2 mx contacts with 3AKR, 3ATR, 3ATN, 3ANQ, 3ACE, and Bram 3ZAB, of Hynam. The hook-up on Sunday mornings is not as good as it should be. Come on at 10 o'clock and make it a worthwhile effort. The zone congratulates Neil 3HG on his being on the air 25 years, and from what I heard of the little get-together at Nell's QTH, it seemed to be very good. What is wrong with the Ballarat

gang, or is it my rx? Haven't heard many on from up that neck of the woods for a while. I think Bill 3AMH must have DF'd himself a nice YL.

5ZAB visited me whilst on holidays in Warrnambool; he had an f.b. time whilst here and his XYL seemed to be having an enjoyable time. Haven't seen or heard of 3ARJ for some time, what's the matter John? Harry 3XL is always on 20 mx on Sundays and seems to work a lot of DX. Also heard on 20 mx was Eric 3ANQ, who seems to be getting his share although he likes 2 mx better. Bill Wines has erected a folded dipole for 14 Mc. and is working out quite well; hears a lot of DX, and the XYL complains of holding the meals up. Hopes to be on 2 mx soon.

CENTRAL WESTERN ZONE

Ran across George 3GN the other day and he informed me that he expected to be on the air again soon as he had acquired the necessary space to erect a decent sized antenna. We will all be pleased to hear you again George. Work on the 2 mx band seems to be increasing in this zone and if the disposals hand-out turns out as expected, guess there will be another couple of signals on this band. Dick 3RR has almost completed a new antenna of the slotted type and he is expecting good results from same. Byron 3TA is replacing his beam array which he lost in a recent storm, so Interstate chaps, you will be hearing some extra signals from Horsham in the near future.

NORTH EASTERN ZONE

Tom 3TS has been heard about, but George 3GD has not been traced lately. Chas 3ACW is to move to Sydney. Vern 3AXW is now taking part regularly in the zone hook-ups, and our Associate Clarry is thinking about the L.A.O. C.P. Syd 3CI and Alan 3UI are "working over" 2 mx with 32 el. beams. Alan uses an 828B final. Frank 3ZU has been listening to 10 and 15 mx. Murray 3HZ has been listening on 40 mx a little, while Brian 3ASF and Ted 3AOB use that band for mobile work, and 3AGG has also been heard there. Kevin 3IR has not been reported on the air from Yarrowonga yet.

Les 3ALE comes on to take the zone hook-up quite often, but Alex 3AT is kept busy in other directions. Peter 3APF is frequently seen about in Shepparton. Johnny 3ACK is heard on 80 mc. Our Secretary, Earle Scoones, now has a BC348 to get into going order. Des 3CO has worked some of the DX on 20 mx. A reference to Les Cusack in Numurkah was noticed recently. It would appear that 3SM returned to Melbourne from Alexandria recently before we knew he was in the zone. Jack 3AKC now on from his new home, but has trouble with noise from h.t. transmission lines in a neighbouring street.

Jim 3JK has been seriously ill lately, but it is pleasing to know that he is on the way to recovery. Ron 3AQQ was in to see Howard 3YV recently. Ken 3KR has been away on holidays. Hugh 3AHF has been heard of, but there is nothing, at the moment, on Jack 3PF and his v.h.f. experiments. Henry 3HP and his "off-sider" Des 3BP have been written up a bit in another monthly journal. Lex 3AIL is very happy with his move from Benalla to Oakleigh, but we are sorry to lose him from the zone. Vic 3ABX has been experimenting with 2 mx converters. This leaves Keith 3JC and Stan 3AGT still unaccounted for, also, for that matter, our Associates Jim Harrington and Jim Muntz, however Ken Mercer keeps in touch with radio, and Col 3WQ is as active as ever.

BALLARAT & DISTRICT RADIO SOCIETY

About 45 were present for the July meeting at which Mr. Jack Ibbott gave a talk and practical demonstration on "Binaural" recording, the latest in Hi-Fi audio. Amongst this number were five from Geelong including 3IC and 3ZER, also 3AGD, 3AKR, 3ZAZ and Tom Kinnerley from way down in the bush between Dunkeld and Westmere. Although your scribe is a communications man, he, like all others, was astounded to say the least at the quality and type of audio which issues forth from the collection of tape decks, amplifiers, speakers, tweeters and woofers. To quote the classics, it stood out like a shag on a rock when compared to what most people would assume was Hi-Fi. The most enjoyable evening for some decades now concluded with supper.

Another signal should be emanating from the realms of 2 mx shortly when a call sign is allotted to Ken Hore, one of the local R.A.A.F. personnel. Activity in this town of about 30 licensed Amateurs is still like 10 mx—very dead. 3HW-3AMH occasionally take great delight in blasting a hole in 20 mx, complete with rock crusher action to the annoyance of 30 s.w. rx's and all b.c. rx's within the shock wave. Nevertheless, it delights the Ws from the East to the West coast.

GEELONG AMATEUR RADIO CLUB

Members have at last completed the new syllabus for 1955-56 and a great variety of new features has been included. Each Wednesday night at the club rooms this year will be an official evening. Ron 3AYB gave an interesting talk on the development of semi-conductors and transistors. At the conclusion of his exposition club members had to be told to go home so great was the discussion and question time which followed.

Ted 3AEH has constructed a number of small 2 mx transceivers which work very well. Bill 3AWZ has his test equipment up to date with the addition of a new monitor and a 100 Kc. crystal oscillator secondary standard. Fred 3ALG has a super rx and can hear all the DX round the place. Bob 3IC (old faithful) is as usual conducting the Morse evenings for interested members.

We will all be pleased to see Melbourne friends at our QTH throughout the year, especially on Wednesday evenings.

QUEENSLAND

TOWNSVILLE

The usual monthly meeting was held at the residence of 4BX on Thursday, 2nd June. The chairman received many apologies from members and the meeting soon got under way, and after disposal of usual business, the crowd adjourned to the top of Castle Hill in company of Mr. W. Parker to hear and see all about the D.M.E. This was really enjoyed and due to the lateness of the hour only a few returned to dispose of the ample refreshments. 4BJ has only the driven element on the tower so far and is putting out hefty signals on c.w. 4RW's modulation sounds a lot better and comes on the air at all weird times when people should be in bed. 4LR chasing DX and getting a few with his low power of 10w. and 3 el. beam. 4BE, who has not been heard for a long time, was heard in QSO with 4LR while writing these notes. 4LK, 4JW and 4WT all worked on 7 Mc., but this band very poor due to QRN, etc. 4RW hopes to see many of the boys in Brisbane in August during the Exhibition and hopes to attend the monthly meeting.—4RW.

ROCKHAMPTON

As the date set down for the last meeting clashed with the Rockhampton Show, the meeting was cancelled as it was realised that at this time at least Amateur Radio would take second place to family and business interests. Following the departure from the zone of John 4FU, last heard operating under 3AFU/VK2 at Woy Woy, it is pleasing to note that a new licensee, 4CY, is operating 20 mx phone in the district. Noel 4ZR is contemplating matrimony and also pounding brass. Recent advice to Bob 4NG indicates that the Ross Hull Memorial Trophy is his for a period. Bill 4WD and Charlie 4MT also assisted in placing Rocky on the 6 mx map. "Grand Dad" Eric 4EC is on the market with a nice line of polystyrene beads ex-war surplus co-ax which only lasted seven years. Let's hope your new transmission line lasts as long and works as well, Eric. Following recent events in the Dodd household, Bill 4WD (wild dog) is expected to produce a new QSL card carrying a picture of the newly arrived four pups. Des 4TL is expected to make a comeback soon, but is being delayed by his interest in light aircraft and a YL.

Intending visitors to Sunny Queensland are advised that Rocky Zone meetings are held on the 15th of each month, and Interstate visitors are really welcome. We recently had the pleasure of entertaining Lance 3AHL and trust that as he has demonstrated that it can be done, others will follow his tyre tracks.—4NG.

MARYBOROUGH

Old-timer Gordon 4GH came up on 40 and 80 mx after a two-year break. 4AI also broke a long silence by re-appearing on 20 mx with a new rig and 40 ft. high double-extended Zepp; Alan is knocking over some new countries on phone. Arch 4CB is getting a 50 ft. steel tower together which will later hold a 14 Mc. 4 el. beam. Meantime Arch is getting started on 2 mx in company with 4AI. Other locals look like following suit and before long will be looking for inter-town contacts.

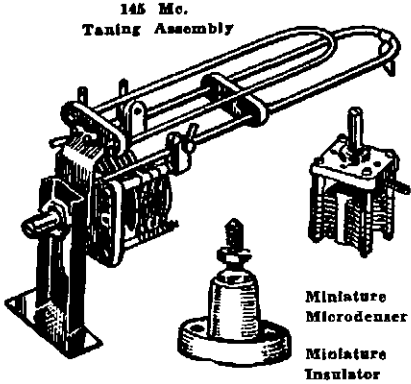
4BG has his ZL special beam working, or partially so, on 14 Mc.—with a rotating pipe mast. Ron is heard every Sunday keeping his 20-year-old sked on 40 or 20 mx with cousin 2BG. New-comer Graham Pooley sitting for A.O.C.P. in July. Good luck Graham.

BUNDABERG

4XJ and 4BJ have both acquired commercially built v.f.o. units. Les works c.w. and phone on 14 and 28 Mc. and snares some rare ones. 4BJ is in a pre-breakfast 7 Mc. hook-up. When are you going to put that tower up, Vic?

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KT66, etc.
See "Radio and Hobbies" of Feb-
ruary, 1955, 17 watts U.L.
Amplifier.

20 WATTS: 20-30,000 c.p.s.
Primary: 4,500 ohms.
SCREEN TAPS: 10% of Plate Z.
F.R.: Plus or minus 1 db 10-80,000
c.p.s.
Leakage Inductance:
1/4P/1/4P: 16 mH. maximum.
Prim./Sec.: 16 mH. maximum.

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SOUTH AUSTRALIA

The monthly general meeting of the VK5 Division took the form of a visit of inspection to the Osborne power house, which, for the benefit of the scribe for the Headquarters Division and any others who may not be aware of it, is the main power house of the Electricity Trust, of South Australia. About 60 or 70 members left the club rooms at about 7.15 p.m. and journeyed the twelve or so miles to Osborne, in motor cars of all shapes and vintage, and arrived at the gates of the power station to be met by Gilbert SZAT and John 5KX, who escorted the party up to the main doors. Gilbert gave a short description of the mechanical side of the power house and then John did the same for the electrical side. The party then broke up into six separate parties under guides and commenced their tour of inspection.

Unfortunately, I was not present at the inspection, due to being otherwise engaged. To tell the truth, at dinner that night I happened to say to my XYL that I was going out to have a look over the power station, and she very sweetly said to me that instead of going to see where the electricity was made, it might possibly be better if I fixed up a few of the electrical pieces of equipment laying around the house, such as the iron, toaster, jug, etc. Naturally being a perfect husband (the words are mine!), it gave me much pleasure to stay home and oblige, and therefore I missed out on the trip. To be frank, I detected in the tone of the voice of the XYL, that certain something which is distinctly audible to the trained ears of a married man, which says "look out, this is it, duck for cover!" Need I say any more?

The visit of inspection was thoroughly enjoyed by all present and in the few short words of thanks which Gordon 5KU very ably said at the conclusion of the visit, he managed to convey just how much the boys had enjoyed the night. I have it on the best of authority that although I was not present, my name haunted the members all night because practically all of the equipment at the power house was labelled "Parsons," which naturally was the cause of much merriment and insulting remarks at various times during the visit. It goes without saying that as the meeting night took the form of a visit, no general business, etc., etc., took place, and as I have never been guilty of padding my notes just to get space in the magazine, then this brief reference to the meeting must suffice.

Country members now receive with their tapes a gasettured sheet of a survey of the tape lecture, circuit diagrams where possible, anything of special interest from overseas magazines, in fact anything that the Division feels is of any help to the country member. If any member from the country is not availing himself of this service, then he should get in touch with Gordon 5KU who is handling this service, and he will do the rest. Now it is up to you, help us to help you. That's what we want to do, but if we don't know what you want, it makes it a bit hard.

Incidentally, don't forget that the August meeting night will take the form of a members' display night and it is up to all to see that we have a display of all those little bits and pieces which usually adorn the average shack. I presume that Council will endeavour to offer some incentive to members to bring along samples of their ingenuity, although this is only an assumption on my part, but whichever way it goes, all members should try and make the evening a success. No matter how big or how small, if you made it yourself, bring it along and let the other fellow see it. Surely the idea appeals to you?

Frank 5BU at the time of writing is an inmate of the Repatriation General Hospital at Springbank. From all information to hand he is doing as well as can be expected and we all hope that he will soon be on his feet again. Alan 5VO is now out from the Royal Adelaide Hospital and slowly on the way to his usual good health. I understand that one or two minor bits of patching up have still to be done, but Alan has relegated them to the future. The distant future we all hope. OM. Frank 5MZ has returned to work again although he has to look after his leg still. Judging by his cheery voice that I hear on 40 mx quite frequently (suggest you transmit instead of only listening, "Pansy,"—Ed.), he is almost back to normal. Nice work, OM.

The Brompton Methodist Mission Youth Club as part of its activities is running a radio club under the guidance of Howard 5XA and Joe 5JO. I have it on good information that a transmitting license is part of the plans for the not-too-distant future. A worthy effort OM.

SOUTH EAST AREAS

The monthly meeting of the S.E. boys consisted of a general ragchew, which for some reason or other always seems to go over well whenever Amateurs get together. Three of the boys were absent, Claude 5CH, Tom 5TW and John 5JA, which meant that Col 5CJ and Stuart 5MS did not have to fight over the last piece of sponge cake. 5KU has been heard pounding the key on several occasions this month although conditions did not promise Erg much reward. 5CJ has been on 40 and 2 mx with his usual skeds, but business is holding up Col's own building programme. 5TW has been reported as missing this month, but the reason, or the supposed reason for his absence, is the fact that it has been on the cold side. If I might be so rude as to offer a comment Tom, that is a decided under-statement.

5CH has been seen in the City of Churches—Adelaide to you, Pincott!! Claude called in to see me at the b.b.s.s. (best broadcasting station in the State to the uninformed—SDN to wit) and gave me a detailed report on his activities, both personal, Amateur and commercial. 5FD has not been heard on the air, but attended the monthly meeting. 5ZAG is still working on his beam and expects to have it working ere long. Leo has been spending quite a deal of time re-building an AR3 type rx. From information received I can hazard a guess that it won't be long now before Leo removes that Z from his prefix. Keep up the good work OM.

No news from Narracorte this month, but this means that it is good news. Understand that Bram 5ZAB is on holidays in VK3, and the good news part of it is that he managed a contact on 2 mx from Narracorte with Max 3BQ. The ex-VK5 v.h.f. scribe, Gordon 5KU, in the course of chiding me for attempting to poach on the new v.h.f. scribe's territory, informed me that the QTH of Bram is Hynam, not Narracorte. My apologies to both gentlemen. 5MS seems to be the only one of the boys that has been really active this month. He has been keeping skeds on 40 and 20 mx, to say nothing of 80 mx. Stuart is building a xtal converter for 2 mx.

There are two things in Amateur Radio that I never do. One is never to read the VK3 notes more than six times (just in case I can secure grounds for libel, plague—plague—plagialaw—stealing my thunder, in fact anything that would give me grounds to sue), and the second is never to read the notes of Pro-5PS. However, one night last week I came home a little bit late and the XYL said that my punishment would be to sit in the corner and read the last notes that Pro-5PS wrote in "Amateur Badlo." I screamed for mercy and swore that I would never do it again, but to no avail. Imagine my feelings when I read in the first line of the South East notes that Stuart 5MS had been given by Pro-5PS the credit for organising the monthly meetings in that area. Knowing Stuart as I do, I could imagine just how embarrassed he would be at this honour being thrust upon him, especially as I had credited two others for the organising of the meetings in one of my earlier notes. I thought to myself, if I say anything to Pro-5PS, he will only tell me just what I can do with my notes each time I go on my annual holidays, and if I keep quiet nobody will know anything about it. Therefore I decided to say nothing about the matter to Pro-5PS, and as I know he never reads my notes for the same reason that I don't read his, then all will be well. Diplomatic am I not, fellows?

Once upon a time I used to receive a monthly letter from Tom 5TL giving me an up to the minute story of the doings of the boys at Renmark, Berri, etc. Since he shifted to Alice Springs he has been strangely silent. He still sends an occasional letter to the operator of 5WI, and I find by looking over the shoulder of the said operator of 5WI that Alice Springs is slowly but surely accumulating quite a number of licensed Amateurs. Should this catch the eye of my one time palsy-walsy Tommy, it might spur him into once again dropping me a letter occasionally.

With regard to the Upper Murray gang, I can only assume that I am in their bad books. Actually I am in most people's bad books and am by now case-hardened to being one of the untouchables, but quite a number of Amateurs that I have contacted ask me just what has become of the Upper Murray boys? This possibly applies to any of the country areas and naturally the only way that we can get any information about them into the magazine is for someone to drop me a short line and give me a lead. I have said before and I say it again, I don't need much to make a lot of it, but I must have a lead. What about it fellows?

Well, believe it or not, this is the end of the notes for VK5 for this month. I have tried as hard as hard can be to stretch them out longer, but even I must confess myself as beaten.

TASMANIA

The July general meeting was held in the club rooms in Liverpool Street on Wednesday, 6th July. There was a most satisfying roll-up of members and friends, and seating accommodation was really at a premium. With President 7FJ in the chair, general business was rapidly disposed of in order to make way for the highlight of the evening—a lecture on Radio Astronomy by Doctor Reiber, of the Research Corporation of America.

Doctor Reiber traced the development of Radio Astronomy through past years up to present day methods, and used lantern slides to illustrate equipment in current use. At the conclusion of his lecture, he answered various questions, and then 7CH tendered the thanks of the Institute for his efforts on our behalf.

Doctor Reiber's lecture proved extremely interesting and thought-provoking, and was greatly appreciated by all present. It is hoped that he may be able to favour us again before he returns to the States in three months' time.

Bert 7BC has not been idle since his transfer to Stanley and has a complete rig functioning on 50 Mc. You should be in the running for some cross-Strait 2 mx work Bert, so I trust you have not abandoned 144 Mc. altogether. Bob 7AF is testing his new antenna. Hope the good work going into that caravan produces satisfying results. Paddy's (7PM) signal should jump quite a few db. when that new h.t. transformer goes into service.

A meeting of those interested in the elimination of noise interference was recently held at the 7RX QTH, and was attended by 7OM, 7LE, 7RX, Associate Don Porthouse, and Harry Mell, of the Wireless Branch. It was decided to investigate the noise in the Moonah area first, using the 2 mx band and the Wireless Branch is co-operating with equipment and transport. Good hunting, chaps.

Another point of interest is that it has been decided, in future, to record lectures for replay in other parts of the Division and this should prove most beneficial to those members who, for various reasons, cannot be present when the lecture is given. As a start in this direction, Doctor Reiber's lecture was taken on tape by Barney Watson.

7AL advises that some good 80 mx hook-ups are now being achieved on the Sunday morning 7WJ broadcasts, so if some of you more distant members are having strife on 7 Mc., it will probably be well worth while investigating the merits of the 80 mx band. Tom also tells me that I got a bit ahead of the builders in last month's notes so, for the record, now move Tom back to his old QTH at Thirza St. At the time of writing, 7RY and 7BJ are enjoying a spot of recreation leave and both are actively engaged in interior decoration work.

While this particular para. need not necessarily be taken as a "for sale" notice, I have it on good authority that Associate Don Porthouse has acquired a healthy collection of Halcrafters Rx's so go to it, chaps, and remember, if you must burgle, don't bungle.

Hearty congrats are due to Ken 7KM on winning an Atomic Energy Commission Scholarship for Research. Ken's present research activities are centred on Wilson Cloud Chambers and Neutron Counters. Only one thing has me worried Ken, don't forget to leave a few minutes out of that schedule for 7KM. Heard 7CT's name mentioned as a participant in recent car trials. 7SW enjoying the luxury of a new car with vacuum wipers. Saw 7AX looking most prosperous at the last meeting. Secretary Bill Tait seems to be enjoying life with a vim that has to be seen to be believed. 7FM has a new rx on the production line and well under way. Barney Watson locked up the workshop as usual and retired—leaving 7FM on the wrong side of the door. 7RM active on 40 mx and pulling 'em in.

In closing, may I remind you that the R.D. Contest commences at 1800 hours E.A.S.T. on 13th August, so you have only a few days left to make sure all is well with the rig. Inactive members are urged to make an effort for the Contest—if your equipment is right on the ice, or, as yet, non-existent, contest rule number 5 may provide the answer.

NORTHERN ZONE

Our June meeting at the VK5 library was well attended and the hand of welcome was extended to Morrie Taylor, who has joined us as an associate. We certainly had the scoop of scoops at this meeting as the I.R.E. made available to us Prof. Baxter's magnificent Convention lecture on "Atomic Energy." If this talk should go to VK5, we hope 5PS doesn't squirm too much when he hears the news that S.A. may be the first to get a power reactor. (S.A. has to import its coal for power generation.) 7GM has solved the problem of

making a pi network operate into a dipole and is very happy about it. TLZ has been very busy touting the State, whilst TEF and TLK with lots of work on hand have little time for Amateur Radio. TLE said a visit recently to Northern parts and told with great glee of a bidden tx hunt down South. That visitor from the wide open spaces, TFM, was noticed in town recently, quite a stranger up here, Pat.

PAPUA—NEW GUINEA

Roy 9AU tells of being active on 7 and 14 Mc. phone and c.w. working Ws, FM7, TL, XE, CO, etc. Roy has set himself the task of trying for W.A.S.—has 32 States up and 16 to go. Peter 9RM also bent in that direction, in fact got quite a hump they say, what with his car glued to the speaker. 9AU has solved the problem of working Ws with no input to the final. Happened to glance at his final meter one night which showed no mills. Checked voltage and had 50 volts on plates of final tubes, asked the W to stand by while new 888s were plugged in. W replied that only 1 or 2 S points difference when on 100w. Trevor 9TC on relieving duty in Kavieng reported to have gone through 9AU's junk box before leaving, and rumour has it that Roy will be having some local QRM when Trevor returns from Kavieng. Trevor had a very few words to say over a recent Sunday morning hook-up from Harry's QTH, 9HO. Hope to be hearing you from your own QTH soon—in Wewak.

The Madang gang seem to have gone into smoke. 9CR, one time very active, conspicuous by his silence. 9CS not heard at all. Madang must have something to keep all the gang so silent. However, there is a likely starter in George de la Harpe, of D.C.A., who has expressed keen interest on his frequent visits to Amateur shacks in Wewak. The grape vine tells that 9CR is holidaying in Melbourne and meeting some of the VK3 gang. Doug 9DT at present in Moresby. Most likely he is adding to the QRM emanating from that region on occasions. Frank 9FN tells of a terrific power leak which seems to be most active at present with an S8 signal. Hope you chaps get rid of it before the R.D. Contest. Affected are Doug 9DB and our worthy Secretary, 9OQ. They have gone into a huddle about it in an effort to eradicate the pest. Hope they run it to earth.

At last the Kavieng gang have made a move to overcome the silence from that island. Harry 9HO then on the last couple of Sunday mornings on the net. Harry has been cooking transformers quite consistently; hope your worries will soon be over Harry. Harry also tells that Carl 9YT has a great pile of gear. Incidentally, Carl is still on furlough somewhere in the States.

Peter 9PF always busy seeing the planes come in safely. On the air occasionally when time and circumstances permit. Peter 9RM working DX and teaching the younger generation the mysteries of Amateur Radio, likewise Ron 9RC. Ron 9RG has some influential friends we hear. A 36 ft. tower is being erected; need we say more. How do you get on to these things, Ron? Bill 9BW trying to get on to 144 Mc., but pretty busy. Bill 9WP scheming to make an impression in the R.D. Contest.

CORRESPONDENCE

The opinions expressed in these letters are the individual opinions of the writer, and do not necessarily coincide with those of the publishers.

RE VK6MK'S LETTER

Editor "A.R.," Dear Sir,

I was pleased to read the replies of VK3XU and VK3ZAG to VK6MK's letter. I agree with all they have said except that I do not agree that VK6 is disloyal. The discrimination to which VK3XU takes exception was caused by the proposed amendment to the VK6 Constitution (to allow Limited Licensees full membership) being lost, mainly, in my opinion, through the efforts of VK6MK. Tom, at his own expense, sent to all members in W.A. copies of the letter published in June "A.R." At the bottom of the letter was a vote by proxy form. The number of "no" forms received was greater than the number of members attending the meeting. In other words, the proxy voters, not being present, heard only one side of the argument—Tom Mulder's. (Whether, in our friendly society, the independent action of canvassing votes to support one's own point of view is sporting or in the best interests of the W.I.A. is another question.)

Tom, in effect, says if a bloke does not work on a set of bands he cannot understand the problems, etc., there and cannot properly repre-

sent members if he doesn't know the troubles. Well, if that is so, that wipes me out from taking office again, as I have never been above 144 Mc.

In the 1920s and 30s Hams were experimenting on the 40, 20, 10 and 5 metre bands. We refer to the real "Ham Spirit" of those days. That same spirit is apparent today, and particularly among those full members and limited licensees who are breaking new Ham ground on the v.h.f., with the equipment the average Ham can afford. Most of those who are content to remain on the old bands are there mainly for the pleasure of DX contacts and ragchews. We are inclined to rest on our experimenting efforts of years gone by. Experimenting of course still goes on in these bands, but I maintain that the most valuable bands for the true Ham experimenter now lies from 144 Mc. and higher. Should any of these Limited Licensees ever be elected to Council, Federal or local, I with 25 years' Ham life behind me would be quite willing to leave the W.I.A. interests and my own, in their hands.

—JACK HOAR, VK6OR.

Editor "A.R.," Dear Sir,

I would like to draw the attention of members of the Wireless Institute to the position of the Limited Licensees in Western Australia.

At the last annual general meeting of the W.A. Division, a motion to admit L.L.'s to full membership was defeated. W.A. was the only State to exclude these licensees from full membership.

Criticism of W.A.'s action has now extended beyond this State and the two letters published in last month's issue of "A.R." show how strong is the feeling in some quarters. In particular I would like to comment on Gordon Weynton's (VK3XU) letter. His forecast that there would be unrest and schism within the Institute has already occurred. No L.L. who has not already joined the Institute is prepared to join. Even when the position is altered, the treatment received by them will not encourage them to join the W.I.A. (W.A. Division). Most of them do desire to join the W.I.A. but not as Associate members.

I wonder what VK3XU's comments would have been if he had known that under the present Constitution and By-Laws of the W.A. Division, Limited Licensees cannot even be admitted to Associate membership! I quote from the By-Laws:—

"1. Associate Members. Article 28b: In order to satisfy the Council as per Article 28 (b) qualifications for an Associate Member will be accepted only as follows: (i.) Those who have attained a degree of Technical Proficiency in any branch of Radio or Electronics greater than that than that required for the A.O.C.P. (ii.) Those who are undertaking a regular course of study leading to the A.O.C.P. by either class attendance, correspondence or who are under personal guidance of a full member who shall vouch for him annually. The Contract of Membership shall be for the current financial year and subject to renewal by Council who shall ensure that the above course of instruction is being maintained."

[Article 28 (b) provides that there shall be an Associate Grade of membership.]

No one would be prepared to argue that the Limited Licensee is a higher qualification than the A.O.C.P. Also not all L.A.O.C.P. holders are, or even want to, study for the full license. Even if they do their membership is temporary and subject to renewal at the end of a year.

If the W.A. Division is to remain truly representative of Amateur Radio and the W.I.A. in this State, then it must get the L.L.'s into its membership, i.e. full membership.

It will be argued that the Constitution cannot be amended at any meeting other than the annual general meeting next year. However, the way is open for the Council to decide to admit L.L.'s to full membership under the provisions for equivalent qualifications. The Constitution can then be suitably amended at the meeting next year.

If the W.A. Division does not take this step, then the other State Divisions should consider giving VK6 Limited Licensees the opportunity of joining their Divisions. Whether they can still recognise the W.A. Division as representing the W.I.A. is then up to them.

—WALLY HOWSE, VK6ZAA.

AWARDS FOR LISTENERS

Editor "A.R.," Dear Sir,

I read with some interest in "A.R." for May, '53, that any Amateur in the world may apply for a W.A.V.K.C.A. award. I also read that there are other cards to be had for working DX, etc., by the Ham.

Now what about the humble Listener, some of whom take their listening very seriously?

I would suggest a Heard C.C. I suppose for those DX fans and would also suggest most

positively a Heard All VK Card for each band. How many bands can any listener say he has verified for all VK? From VK1 to VK9 I have no band verified for all States. It's quite a job I can tell you and a negative result is not for want of trying.

The card could be a small one, about the size of the ordinary QSL, and could show the Heard All VK for a heading with the particular band written in an appropriate space. Thus one printing would suffice for all bands. The usual signatures would be shown and the W.I.A. badge. A small token for a large effort, but it would give s.w.l.'ing quite a lift and give Associate members an aim to show publicly how well their bomb receiver works.

—NORMAN G. CLARKE, VK2 Associate.

[The 1953 Edition of the Australian Radio Amateur Call Book lists, on page 133, some overseas awards which are available to s.w.l.'s.—Ed.]

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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.

FOR SALE: Eddystone S680/2, best offer over £70, see advertisement in July "A.R." everything from 3" C.R.O., two thirds of listed price. P. J. Grigg, 3 Philpott St., East Geelong, Vic.

FOR SALE: SCR522 Xmitter with valves, £6/10/-. Three 812A valves, new, 25/- each. Two Bud neut. condx., new, 15/- each. G. Wilson, 31 Glenview St., Greenwich, N.S.W. (JF 2427).

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FOR SALE: 10 watt Mobile Tx, modulated, £8. Command Tx, 3-4 Mc., £5. R1082 T.R.F. Rx, £3. Beacon Rx Q5'er, £5. Sundry gear. Gilder, 11 Gleeson Ave., Burwood, Vic. BX 7609.

SELL: BC348 Rx, built-in 85 Kc. Q5'er, N.L. and illuminated National S meter, matching spkr., pwr. supply, and handbook, £50 or exchange for good 35 mm. camera. Eddystone Wavemeter, 1.5 to 160 Mc., with coils and calibration chart, £10. Modified Command Tx, 7-9 Mc., £6 (spare set of tubes). Modified AT5 with all-band final, and built-in xformer and rectifier for 24v. relays, £8. Modulator for Class B 807s, zero bias, £10. Pwr. xformer, A & R 1,000v. a side at 300 Ma. tapped, two 866 rectifiers, fl. xformer for 866s, two filter chokes at 300 Ma., three oil filled 4 uF, 1,500v. condensers, and 400v. a side at 100 Ma. xformer, £20 the lot or will separate. 813 and socket (ceramic), £2. 830B, £1. Four 6J6s, £2. 6BQ7A, £1. 6BE7, £1. Eddystone condensers: 25 x 25 tx split stator, £2; two 8 x 8 butterfly, £1; two 60 pF., £1. V.F.O. Dial and two switches from T.U. tuning unit, £3. P. D. Williams, High School, Maryborough, Vic.

SELLING: CNY-1 Tx-Rx 1.5 to 9 Mc., xtal or v.f.o., mains or 12v. d.c. supply, £15. ASB-8 Indicator Unit less valves, 25/- Power Trans.: Pri. 230v. 50 c.p.s., Sec. 620-550-375-0-375-550-620v., rated at 275 v/a., plus 2.5v. 3 amp., £6. Vitavox Hi-Fi 12" 15w. Speaker, £2. Multi-ratio output transformer, £2. 10 Saint James Ave., Springvale, Vic.

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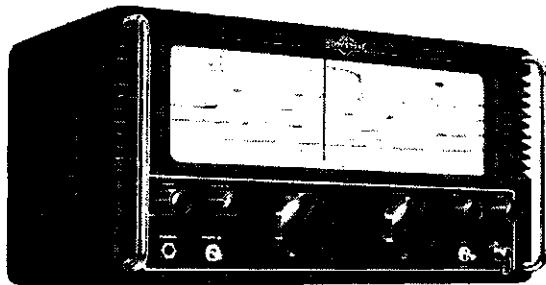
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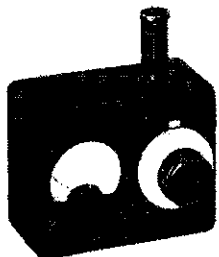
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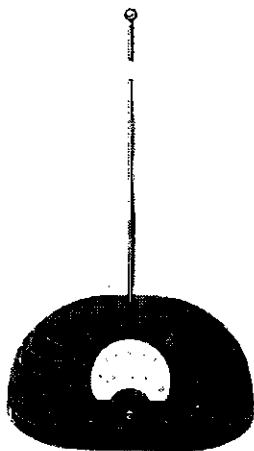


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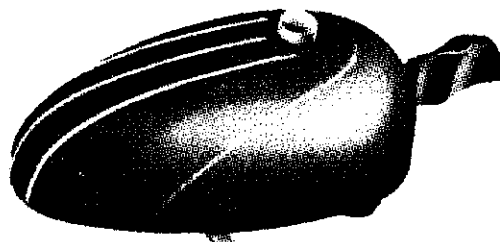


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SEPTEMBER
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AMATEUR RADIO

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THE CONTENTS

| | |
|--|----|
| Who will be on the Air when TV and TVI is on? | 2 |
| Frequency Channels for Television Stations | 5 |
| W.E.A. Certificate Cancelled | 5 |
| 7 Mc. Mobile Converter | 7 |
| A Circuit to Measure Capacity and Inductance | 7 |
| A Triple Conversion Amateur Band Receiver | 8 |
| Book Review—"The Radio Amateur Operator's Handbook" .. | 10 |
| Amateur Call Signs | 11 |
| Transistor QRM | 11 |
| National Field Day, 1955, Results .. | 12 |
| Bi-Monthly Victorian Scramble .. | 12 |
| DX Activity by VK3AHH | 14 |
| Prediction Chart for Sept., 1955 .. | 14 |
| 50 Megacycles and Above | 15 |
| All Models Exhibition | 15 |
| S.w.I. Section | 16 |
| Federal, QSL and Divisional Notes | 17 |
| Correspondence | 24 |

EDITORIAL



"Who are the Authorities Fooling on Amateur TV?"

Over nine years ago the Wireless Institute of Australia, through its Federal Executive, made its initial application to the Postmaster-General's Department for the introduction of licenses for the Australian Amateur Service to participate in experimental Television (A5) transmissions. Since that date exactly thirty-five letters appropos of this matter have passed between the W.I.A. and various Authorities and still there are no Amateur Television licenses.

Why such a license could not have been introduced under Section 103 of the Australian Broadcasting Act at that time when frequencies were being released by the Armed Forces and the respective bands reallocated to the Amateur Service is a mystery. But the then Parliamentary Standing Committee on Broadcasting (later replaced by the Australian Broadcasting Control Board) and the Postmaster-General's Department, Wireless Branch, both in vacillating mood, informed the Institute "... that the matter would receive consideration."

The matter is still receiving consideration in 1955!

In 1949 the then Postmaster-General, Senator D. Cameron, said, "... that the Government is awaiting reports from the Post Office and the Australian Broadcasting Control Board before reaching a decision concerning the introduction of a Television system in accordance with standards best suited to Australian conditions ..." and went on to say "Until the Government policy has been determined, the matter of granting permits for aurally radiated Television or experimental Television transmissions will be deferred ..."

Despite the Institute's pleas that this concerned Commercial Television Services and should not debar the Amateur Service from its purely experimental approach to this field, no licenses were forthcoming. Today the country is faced with an acute shortage of technicians to conduct the imminent Television Services, yet the Postmaster-General's Department and the Australian Broadcasting Control Board did not appreciate that fact when the Institute told them years ago that the introduction of Amateur Television licenses would provide a ready pool of men with valuable experimental and theoretical knowledge of Television.

And so the unhappy story goes on! Year after year the Institute advanced reasons for the introduction of licenses, only to be put off by officialdom with one excuse after another, but always ending with "... the Institute's request will receive consideration ..."

In 1950 the Australian Broadcasting Control Board said that "... when the Australian Broadcasting Act is being amended to give effect to the recent decision of the Government in respect to Television, the views of your Institute will receive careful consideration ..." Later the Institute was informed that the introduction of Television had nothing to do with the Australian Broadcasting Act but came under the Television Act. Perusal of this indicated nothing relating to Amateur Television—only Commercial Television.

Then came more negotiations and correspondence; the Institute was notified that a Royal Commission on Television would be held, after which the Government would determine its policy! And so the Institute represented itself before the Royal Commission and was promptly told that the matter it desired to discuss "did not come within the terms of reference of the Commission ..." The Royal Commission tabled its findings before the Government, the Government decided its policy, licenses have now been issued to the Commercial and Government networks and the stage is set for the introduction of Television Services next year. And what of the Amateur? Exactly the same as pertained in 1949! Postmaster-General, Hon. H. L. Anthony, M.H.R., is at present discussing the matter—for the third time—with the Director-General of Posts and Telegraphs. He has said that "certain investigations" have been made but it is necessary to make further investigations, after which the Institute can expect a reply to its representations.

Who is fooling who? Why can't the Amateur of Australia experiment with Television (A5) transmissions as all other large Amateur-populated countries have permitted their Amateurs to do for years past? What is the real reason behind all these years of "begging the issue"? Can we now say that the introduction of Amateur Television licenses is imminent?

FEDERAL EXECUTIVE.

WHO WILL BE ON THE AIR WHEN TV AND TVI IS ON?

BY H. F. RUCKERT, VK2AOU

WHAT TV MEANS TO THE RADIO AMATEUR

T.v. means not only a new and modern method of entertainment or application of electronics for us in this country, but also problems to overcome. Those of us who have read "QST" or other foreign Short Wave Amateur magazines during the past ten years may know that t.v. has been the greatest and most dangerous threat to Amateur Radio the OM ever had to face. The one-eyed monster in the lounge room of our neighbour and in our own house will force us off the air as long as our transmission is causing interference to the t.v. reception—we can be absolutely sure about this fact. Our spare time entertainment and private studies, sometimes called hobby, are a matter of modern technique.

The t.v.i. problem is a technical one and therefore we Amateurs should be able to solve it using modern electronic methods. We would soon lose every right, privilege and chance to continue as Radio Amateurs if we put the head into the sand. If we go into retreat, not transmitting when t.v. programmes are on, we soon will see that the t.v. show is always on the air when we have time for QSOs or the DX is coming through.

Other frequency hungry institutions are only waiting for this to happen, hoping we are not keen enough to improve our transmitters and to fight for what generations of Amateurs preserved or gained for us. Some people may hope that we might prefer the lazy way of sitting in front of the t.v. set watching the advertisements, not having the knowledge or technical experience of tackling modern electronic problems.

We have already been accused of not using the short wave bands to such a degree that these bands cannot be reserved for Amateurs much longer. The same official voices have apparently forgotten to say also that commercial stations have not been using the higher frequency bands because even their kw's. and big aerials need sun activity to get to the other side of oceans. But this shows only that any weapon may be used one day to silence Amateurs, and t.v. and t.v.i. will hit us hard. It most definitely will silence all those transmitters which are not up to the t.v.-age-standard as far as circuitry and construction is concerned.

To save Amateur Radio in this country it is of national importance to be able to offer the government our services as emergency or civil defence operators, as trained self educated radio operators and as experienced radio technicians the electronic industry can use without having to pay for our training or home studies.

It will not be easy for them to find the technicians to install and service the t.v. sets they will sell. Many Amateurs with their experience will be

engaged soon in this field, so we should co-operate with our greatest counterpart! Actually we only have to build and operate our radio station up to modern standards, which is not too much to ask. We should have done this much earlier anyhow, shouldn't we? The P.M.G.'s Department, which is judging our work, would appreciate this.

It is time to start now, before DX gets better, so making it heart-breaking to pull the old tx to pieces. Having done this, we will see that t.v. is not a hazard to Amateur Radio, but it will be very beneficial for us. There will be far less interference on our receivers.

Neither the Government nor electrical appliance manufacturers have been very concerned about the interference we have on short waves from motor car ignition, from fluorescent lights, trams, from dozens of automatic switches and temperature control systems, from faulty power lines and insulators, and many other man-made sparks, not forgetting the lawn mowers, drills and saws in back yards and workshops. Of course there will be a tough law to protect the t.v. set owner soon because t.v. advertising is a big business affair unlike Amateur Radio.

Will the electronic industry and the retailers co-operate with us as is the practice in U.S.A. where they install a filter in the t.v. set in those cases where the fundamental of an Amateur transmitter is blocking the t.v. mixer due to bad t.v. set design and insufficient front-end selectivity? It is not the job of the Amateur to re-build or improve the t.v. set, he has enough to do with his own gear.

The Amateur on the other hand should not think that the efforts of the President of his W.I.A. Division, the Council, or the T.v.i.-B.c.i. Committee of his town can do the job alone. We also should not rely on t.v.i. filters we may try when we are getting into trouble. It is still the individual Amateur who has to do the job of modernising his transmitter. The T.v.i. Committee may advise if the standard methods we describe now have failed.

CHECKING HARMONIC RADIATION FROM AMATEUR TRANSMITTERS

Many with receivers able to receive on frequencies where they may radiate harmonics, will get a big surprise if they try it out. It is correct that there was not much DX on Amateur bands higher than 14 Mc. in recent years, but it is unfortunately wrong that no Amateur signals have been on 21, 28, 42 Mc. and higher harmonics.

If you hear a strong local station on 14 Mc. with S9 plus signal, make it a habit to tune for his harmonics and send him a QSL. At first he may be embarrassed, and send you one too, but you both should be grateful for the information. It is much better a fellow Amateur makes you wake up than the Wireless Inspector with the patrol car

at your front gate, or a neighbour knocking at your door. You may prefer this QSL to a P.M.G. report.

Ask your local Amateur neighbours, especially those not more than a mile away, to check on your possible harmonics. This would be also a very gratifying job for the s.w.l.'s. who are getting organised in several States. There would be an excellent chance for co-operation between you, the 14 Mc. DX hunter, and the v.h.f. Amateur who may have been worried about your harmonics on 6 and 2 mx for so long. He has the receiver you may not have.

You will hear stations half to two miles away which still have an S9 plus 30 db. signal on 28 and 42 Mc., the second and third harmonic of their 14 Mc. transmission. There is no doubt that they will put a very nice signal in on many t.v. channels. They may not believe this until you can demonstrate this to them.

A very extraordinary case was a VK2 station working on 7.1 Mc. whose second harmonic was S6 on 14.2 Mc. at ten miles distance. The fundamental signal was only 100 times stronger. It is evident that such a station is wasting a lot of the precious 100 watts he can use. We actually could make use of this position because there is often bad local QRM on 7 Mc. during the VK2WI broadcast from lawn mowers, whilst we may receive a strong and clean signal on a harmonic.

Let's all go v.h.f. and chase our harmonics! You will be shocked how few stations are OK and fit for the t.v.i. battle. As many as possible must be ready before the first t.v. transmitter gets on the air, so we can't be blamed for all the t.v. reception trouble and it will not be forgotten that we are still interested in all our Amateur band frequencies.

SIGNAL AND NOISE LEVEL

It is usually agreed upon that the noise level in a densely populated community will not be less than 10 microvolts. We can only expect a good t.v. picture if the picture signal is 100 times stronger than the local noise level, that is 1 millivolt. For satisfactory sound reception, the ratio could be smaller (10:1).

If we are at a location where all t.v. transmitters are delivering a stronger signal to the t.v. receiver aerial we may be allowed to generate stronger harmonics than 10 microvolts, which is about a S6 signal.

We will use for our following discussion the values published in the A.R.R.L. Handbook, or as they are used by the well known Collins Radio Co. for S meter calibrations. S9 is equal to 100 microvolts at the 70 ohm terminated signal generator cable. 6 db. or a voltage ratio of 1:2 is used to get the smaller S unit values. It may be mentioned that 20 db. is equal to a 1:10 voltage ratio.

* 25 Berrille Road, Beverly Hills, N.S.W.

TESTS IN THE BACK YARD

We should find out how much trouble we cause to our neighbours and vice-versa if we do not already know about the b.c.i. Set up a short wave receiver in the back yard about 60 feet away from the shack and connect the receiver to the lawn mower cable if you don't have a battery operated set.

The first surprise will be that you can hear quite well the harmonics the oscillator of our neighbour's radio set is radiating if you move with the test aerial close to his house. This proves that his receiver causes most of the b.c.i. even our harmonic radiation free transmitter will get blamed for.

What about the radiation of his v.h.f. oscillator and the electronic high tension power supply his t.v. set will produce? You will need this test to defend you later.

The next discovery will be that you can hear at S3 to S4 the second harmonic of the oscillator of a second short wave receiver which is in the shack despite the good shielding and by-passing. The frequency meter you used to check the accuracy of the transmitter emission could be so strong that this may cause t.v.i. too. Disconnecting the test aerial used on the receiver in the back yard with the transmitter on will show how much of the r.f. is getting through the mains. Your neighbour will get interference via the same channel unless you stop the r.f. from going this wrong way.

NOW LET US TEST OUR TRANSMITTER

Connect a shielded dummy load to the antenna terminals. A 75 watt globe should be enough if you use 100 watt input. Switch the oscillator on. Use full receiver sensitivity and a short testing aerial about three feet long. So far in the back yard you should not hear much more than you got before from receiver oscillators or frequency meter. Now connect or plug in the isolator stage valves or frequency multiplier stages one by one and check the fundamental, second and third harmonic. You will soon find out which stage is not shielded enough and which stage is generating objectionably strong harmonics. You also will see that single ended stages, not push pull stages, are generating often a stronger third harmonic than second harmonic. So a push pull stage may not be of any advantage.

If now the switched on final makes it much worse, then you know that a low-pass antenna filter will not help you and a mains line filter will be just as useless, because your transmitter chassis is still r.f.-hot, making shielding uneffective, even if you don't burn your hands when you touch it.

The next test series can be made with the transmitter at full power, modulated by a watch, and any aerial available may be connected. Reduce the sensitivity of the receiver in the back yard by standard methods (r.f. stage cathode resistor) or use a still smaller test aerial. Set the receiver so that the S meter reads as high as S9 plus 40 db. (10 millivolts), if your S meter is able to follow such an input signal on the fundamental transmitter frequency. Check over the whole band for splatter—this will tell you how much trouble you cause to neighbouring Amateurs, and

how much energy is wasted and scattered. You may be surprised how low the average modulation percentage is if you work without splatter on peaks with 6-8 Kc. bandwidth, unless you use a clipper filter arrangement.

Now tune to harmonics at 28, 42 Mc. and higher if you are lucky enough to have a receiver which does so. If your S meter still reads a signal on harmonics or if you can copy these without using the b.f.o., you will be in t.v.i. trouble. With full receiver sensitivity and a higher antenna which is tuned to v.h.f. you will still have harmonics of S9 or more.

Without mains line and antenna filters you can get a ratio of harmonics to fundamental voltage of 1:100,000 (S1-S9 plus 40 db.). Only when this is achieved can you hope that a mains line filter and a good antenna low-pass filter will make your transmitter so free from harmonic radiation that you can't be blamed for t.v.i. If the same operators were given a 500 watt or one kw. licence, they would still cause far less b.c.i. or t.v.i. than a transmitter of the old fashioned design without shielding, using a 6L6 c.o., 807 doubler with capacitive coupling to the final 100TH, which is doubling also, using a windom antenna directly capacitive coupled to the tank circuit. Such a transmitter will not have a better suppression of harmonics than 100:1.

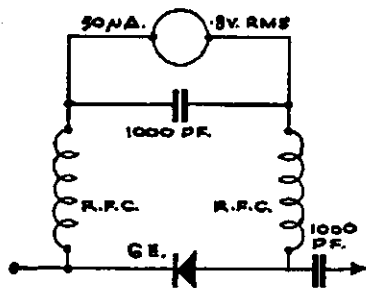


Fig. 1.—R.F. Sonde Circuit.

ANTENNAE AND TVI

You will soon see, making these tests, that flat line feeders radiate far less energy inside the shack to other gear and mains cables than single wire feeders. Far better again is co-ax cable. Quite successful was a piece of double co-ax 70 ohm inside the shack and outside 70 ohm twin lead cable, if you can't afford 60 ft. of co-ax or so for the whole feeder. The s.w.r. remained the same, but there was a marked improvement as far as harmonic radiation was concerned.

Antennae which are tuned and matched to a certain band will help reduce harmonics which may still get out from the final. The length and type of earth cable connected to the transmitter chassis also makes quite a big difference. A test may show the best spot on the transmitter chassis to connect it.

CHASING HARMONICS AROUND THE PLACE

The tests in the back yard have shown which stages generate too much harmonic energy. Most helpful is a g.d. meter to chase components and leads which may be tuned to the discovered

harmonic without being determined to act as tuned circuits for the particular frequency. You can make amazing discoveries in this way, and some cases reported in "QST" are almost fantastic.

Even more helpful in tracing insufficient shielding, wrong by-passing and wrongly placed chassis connections is a small r.f. indicator (sonde) made with a 50 microamp. meter, a G.E. diode and a few other components.

With the transmitter on, walking with the sonde through the shack and house, touching any metallic objects with the sonde, you will be amazed to learn where the energy from your transmitter goes. You soon realise why others get that rare DX station you call because your transmitter is warming up the kitchen sink as well as the gas stove.

The mains connections direct at the transmitter may be r.f. cold, but it may be different at a point three wave lengths away where your neighbour connects his b.c. or t.v. set. You can be sure to find the same trouble in your own place also. The mains and metallic objects in the house should be free of r.f. if a shielded dummy load is used, but with the aerial connected to the transmitter we always can expect some r.f. all over the place between ground and radiator.

What if your transmitter is finally free of harmonic radiation, but a gutter and down pipe, the steel kitchen sink and a copper pipe, installations with rusty connections to the gas stove or frig. are just half a wave length long on a harmonic which falls in a t.v. channel? The bad connections of different metals may be just near the middle of this dipole forming a non-linear device, causing distortion (rectification) to the received r.f. energy, and so generating harmonics which are re-radiated by the unusual dipole with more or less efficiency. With your sonde you can find out if certain parts of the house carry r.f. and the locating of trouble spots may be possible.

LOOKING INTO THE TRANSMITTER

With the same sonde we can check the different chassis our transmitter may have. We may find r.f. around the driver stage and on that part of the front panel. The reason being that it was wrong to connect the cathode of the valve, the coil of the tank and the tank capacitor to three different pieces and positions of the chassis so that the chassis was a part of the path for the r.f. plate current and a part of the tank coil inductance. Re-arranging of parts and wiring with copper foil strips, to reduce inductivity, fixed the trouble.

In a different chassis we find r.f. on the panel and shielding plates which should divide the chassis into different compartments. Covering the compartments with aluminium sheet or copper fly screen wire mesh helps in this case, because the coil in one of the open boxes, i.e. not closed on the top, acts as a secondary coil winding. Wire mesh is quite effective if connections are made every two inches to the chassis.

Slots or bad contacts along shields are also detected by the sonde. There may still be r.f. around a knob with which we operate the coupling capacitor which is in series with the link coupling coil coming from the co-ax output of the pi filter. R.f. is radiated from here by-

ZEPHYR MICROPHONES

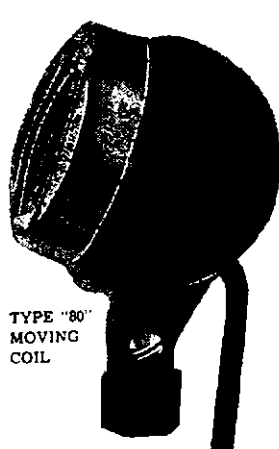


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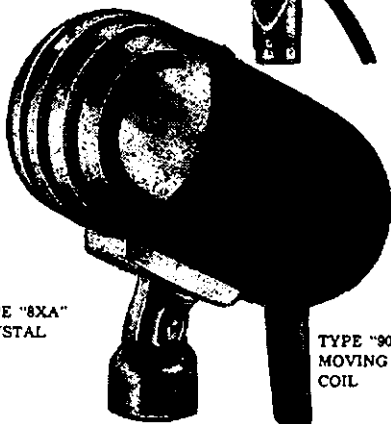
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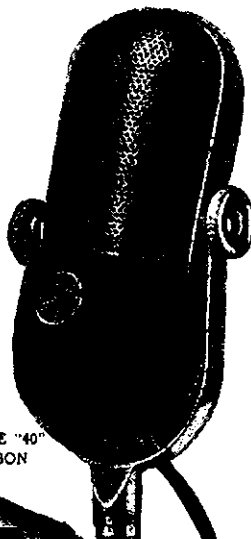


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Frequency Channels for Television Stations

The Postmaster-General (Hon. H. L. Anthony, M.P.) recently announced that the Australian Broadcasting Control Board had allocated frequency channels as indicated hereunder to the television stations which in accordance with the Government's approval, are to be established in Sydney and Melbourne:—

Channel No. 2, 63-70 Mc.: National television stations—Sydney and Melbourne.

Channel No. 7, 181-188 Mc.: Commercial television stations to be operated in Sydney by Amalgamated Television Services Pty. Ltd., and in Melbourne by a company to be formed by the Herald and Weekly Times Ltd.

Channel No. 9, 195-202 Mc.: Commercial television stations to be operated in Sydney by Television Corporation Ltd., and in Melbourne by General Television Corporation Pty. Ltd.

The Board has also determined that each of the stations will be authorised to use up to 100 kilowatts effective radiated power, that the Sydney transmitters should be located in the Gore Hill district, and the Melbourne transmitters on Mount Dandenong.

W.E.A. CERTIFICATE CANCELLED

The Radio Society of East Africa has announced that the issue of the Worked East Africa (W.E.A.) Certificate has been suspended indefinitely and no further applications can be considered. Outstanding claims will be dealt with in due course. The Society hopes to issue a new certificate shortly.

very excellent job in demonstrating to the W. Amateurs, industry and radio trade representatives how to t.v.i. proof transmitters—both home-built and commercial—putting 1,000's of Ws again back on the air.

"T.v.i. suppressed" is the most important sales feature the commercial built transmitter must have in U.S.A. now. Even the Halicrafters transmitters used for the Clipperton Island adventure had been t.v.i. suppressed.

This problem concerns also the v.h.f. Amateurs because they will not have, for very long, the chance to shift or escape to higher ground (frequencies). Colour t.v. will find us even at 290 Mc. or 580 Mc.

A further article will describe a transmitter with the above mentioned constructional features, a later still will describe the calculation and tuning of a low-pass filter.

REFERENCES

- "By-passing for Harmonic Reduction" (Grammer), "QST," April, 1951.
- "The Dallas Plan for TVI," "QST," June, 1951.
- "Letters from the TV Receiver Manufacturers," "QST," March, 1952.
- "TVI-Proofing the Viking I," (Phil. Rand), "QST," June, 1952.
- "Harmonic Radiation from External Non-linear Systems," "QST," January, 1953.

applies to by-pass capacitors which have a twice higher self resonance frequency if you replace the two $\frac{1}{2}$ " long wire leads by $\frac{1}{4}$ " wide copper foil strips.

The g.d. meter shows you where you are with your by-pass capacitors, and the sonde will tell you how effective they are. A $\frac{1}{2}$ " of wire is equal to 10 cm. inductivity or 0.010 uH. inductance.

A TRANSMITTER CIRCUIT OF LOW HARMONIC GENERATION

Having followed the description of tests so far it is easy to understand that we should start with a circuit which is unlikely to run into much trouble at all. The remaining radiation of harmonics may then be very much easier to cure or to confine to transmitter stages where they can't do much harm.

● Don't operate oscillator or frequency multiplier stages with more than 2-3 watts input, to keep the energy of generated harmonics as low as possible.

● Omit capacitive coupling between the stages, because that is the way harmonics escape.

● Use band-filters in between the frequency multiplier stages and inductive coupling with link and co-ax cable to the driver stage.

● Use a well screened pentode as driver stage, with good shielding between input and output circuit.

● Never use the driver or final stage as frequency multiplier, they should act as harmonic filter stages.

● Use pi tank circuits because they provide a by-passing of harmonics with the filter output capacitor being parallel to the co-ax which leads to the low-pass filter.

● The low power frequency multipliers make it a must to use modern tetrodes or pentodes for the driver and final. Their internal shielding is very helpful in isolating the transmitter from the aerial as far as undesired frequencies are concerned. Also neutralisation may then not be necessary.

● Use an antenna coupler following the tank and low-pass filter with inductive coupling.

● Cover the instrument holes in the chassis with tins (surplus from the XYL's kitchen) for screening.

● Use only co-ax cable and shielded hook-up wire for all wiring in the transmitter (at least in stages and chassis where r.f. or a.f. may be). It saves you the time-consuming tracing of r.f. in modulators and power supplies later.

● Use wire mesh for the back of the transmitter to get the required shielding and necessary ventilation.

● Use band switching throughout so that you don't have to unscrew the shielding to change coils, etc.

● It is advisable to use shielded cables for the key, mike, monitor, etc., and co-ax feed-through capacitors are often the only way to get effective by-passing.

You will find in "QST" and Phil. Rand's publication further important information about sources of t.v.i. and methods of curing it. The A.R.R.L., the T.v.i. Committees, especially in Dallas, Texas, and many single Amateurs did a

passing any low-pass filter in the aerial. The chassis is hot, not permitting effective shielding for a mains line filter, and r.f. is therefore by-passing this filter, too. Looking inside the chassis of the final shows immediately the trouble-causing component. This coupling capacitor has r.f. on stator and rotor, the spindle is not insulated from the capacitor but only from the chassis. The short piece of the $\frac{1}{4}$ " spindle goes insulated through a $\frac{1}{4}$ " hole in the panel. This spindle acts like an aerial around which we place a wire ring. Both parts form an r.f. transformer. It was very easy to mount the capacitor 2" further back and put a short piece of insulating material through the front panel.

After the author had fixed the above-mentioned design errors the reduction of harmonic radiation was 100 times better as a further test in the back yard showed.

EFFECTIVE BY-PASSING

The old school of thought was that the bigger the by-pass capacitor the better. A good lesson was the description of tests in "QST" and similar but more extensive measurements have been carried out by VK2AZB and the author.

Talking about short waves and t.v. frequencies we can say that the most effective by-passing is achieved if we tune the by-pass capacitor with attached leads to the frequency we wish to by-pass. It is useless to take a bigger capacity value with lead lengths which will resonate at a much lower frequency than we wish to by-pass, because the effective capacity is reduced by the inductance of the capacitor leads and the self inductance of the capacitor. These inductances make the capacitor act like a choke causing so much more trouble. If the self resonance is higher than the operating frequency the by-pass capacitor has a good chance of being most effective at or near an undesired harmonic and it will act as a capacitor for all lower frequencies.

The A.R.R.L. found the following t.v. harmonic trap most effective. Parallel to a bunch of pi filter output capacitors of 500-1500 pF. was a small capacitor and one lead was wound into a small coil tuned to a v.h.f. frequency. Also parallel to this series resonance wave trap was the antenna feeder co-ax cable.

Soldering our by-pass capacitors parallel to a piece of copper of a few square inches we can easily find the resonance frequencies with the grid dip meter. Using for example a ceramic HK disc type capacitor which can have for similar capacity values different types of dielectrics, depending on the chemical composition of the material, we can give this series tuned circuit just enough power factor to be broad enough tuned to cover one or the other Amateur bands. Mica or low loss capacitors are not so suitable in this particular case, whilst paper capacitors have too high a power factor. A $\frac{1}{4}$ " diameter ceramic HK disc type capacitor of 100-1000 pF. may do the by-pass job much better than the old 0.1 uF. paper tubular condenser with its 1 Mc. self resonance frequency, and even a 0.01 uF. ceramic disc with the resonance frequency of 20 to 8 Mc. may be the wrong thing.

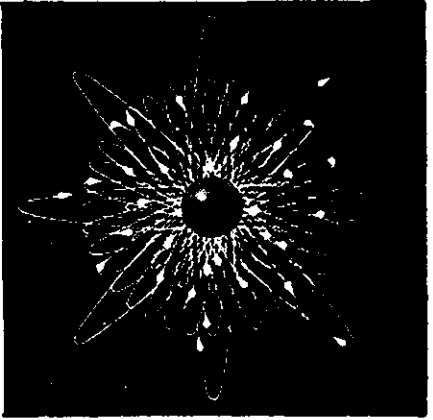
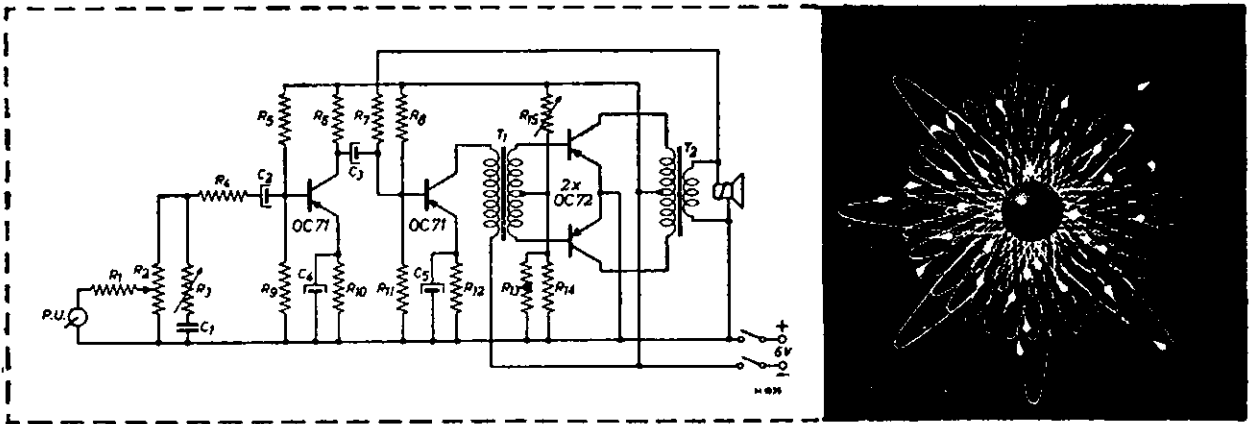
If you can't avoid long leads, use copper foil half an inch wide. The same



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7 Mc. MOBILE CONVERTER

BY R. S. FISHER,* VK30M

WITH mobile operation becoming more popular on the lower frequency bands, the author feels that the description of a sensitive and stable converter for use on the 40 metre band will be of considerable interest.

As it is crystal controlled, it offers many advantages over the usual tuned type. Firstly, the stability is determined by the broadcast receiver with which it is used. Secondly, all tuning is done on the broadcast receiver dial. This means that the converter can be placed in any convenient position in the car, such as under the dash or in the glove box.

The converter uses a crystal at 6.2 megacycles. This means that the 40 metre band is covered by tuning the broadcast receiver from 800 to 950 Kc. A crystal of another frequency can be used, providing the difference between it and the 7 megacycle band is within the tuning range of the broadcast receiver. The crystal used by the writer was obtained from a 5-7 megacycle Command transmitter.

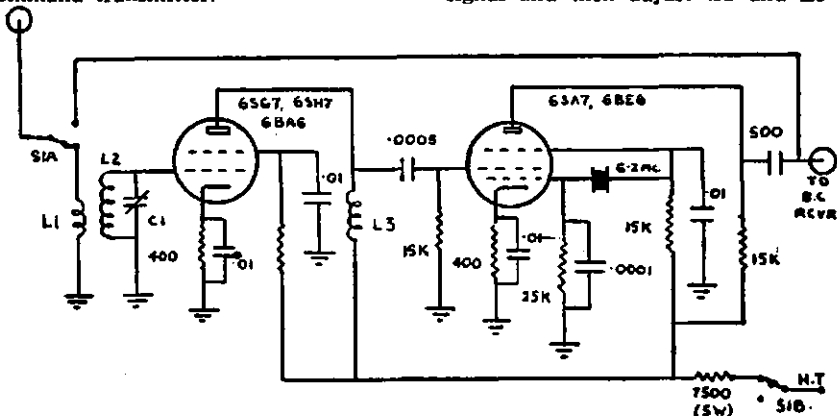
by one American commercially made converter. A tuned output was not considered necessary.

With the 7,500 ohm resistor in series with the high tension line, the current drain with a 200-250 volt supply will run about 10 milliamps., which should be well within the capabilities of any standard car radio.

The converter should be built into a small metal box that will fit into the space available. It is most important that the whole thing is well shielded and all leads running to the converter (including the power leads) should be completely shielded.

The actual construction is left to the reader. The whole thing can be made quite small and a size of about 3 x 4 x 5 inches is suggested. The writer constructed his unit in a small disposals beacon receiver box, of about this size.

Initial lining up of the converter should be done on a receiver with an S meter. Firstly, peak C1 on a strong signal and then adjust L2 and L3 on



A glance at the circuit diagram will show that it is of straight-forward design. The aerial coil is wound on a slug-tuned former 3/8ths inch in diameter. L1 is ten turns, L2 is 40 turns. All coils are wound with 30 gauge cotton covered wire, close wound. The grid condenser C1, which has a maximum capacity of 30 pF., can be brought out to the front panel if need be, but this is not really necessary as the tuning will hold across the band.

The r.f. stage uses a 6SG7, 6SH7, or a 6BA6. Any of these tubes will work with equal results. The r.f. stage is coupled to the mixer via L3 which is also wound on a 3/8ths inch slug-tuned former and consists of 45 turns. Make sure that the coil is well separated from the aerial coil.

The mixer uses a 6SA7 or a 6BE6. A hexode triode can be used with some slight modification to the circuit. The output of the mixer is resistance capacity coupled to the broadcast receiver via a short length of co-axial cable. This type of coupling is quite satisfactory in its operation and is, in fact, used

a steady signal, or use a signal generator. The next step is to connect the converter to the receiver with which it will be used. Connect the antenna, peak the aerial trimmer C1 again and then peak the aerial trimmer of the broadcaster receiver and the job is done.

With regard to the antenna, various types of loaded whips used for transmitting may be used with excellent results, however the standard broadcast whip can be used providing it is at least four feet long. The writer uses his converter in this method and results have been more than satisfactory.

Ignition interference may cause a prospective builder some worry, however in most cases it is very easy to clear up. Usually all that is needed is a suppressor in the lead from the coil to the distributor and perhaps a suppressor on each spark plug. If this does not bring it down to a low level, bond the bonnet and fire wall to the chassis, also a 0.5 uF. condenser from the battery terminal of coil to earth will help.

However, if any trouble is experienced in this matter the writer will be pleased to answer any queries.

A Circuit to Measure Capacity & Inductance

BY N. R. DILLEY,*

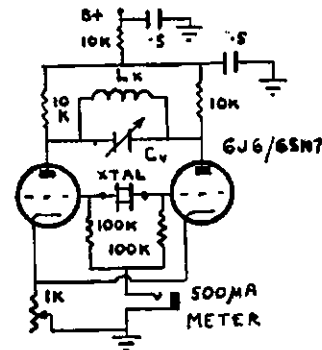
The writer has enjoyed reading the issues of "Amateur Radio" that he has received in the States. It is apparent that the boys "down under" are having a lot of fun from their hobby.

In order to help round out the measurements side of Amateur Radio, the following circuit is submitted to the readers of "Amateur Radio."

Those Amateurs who have a supply of crystals and some standard condensers can measure inductance with good accuracy with it. The circuit is shown in the following schematic.

The circuit is quiescent until the tank is tuned to the same frequency as the crystal when oscillation takes place. The grid current is adjusted for a maximum with the variable condenser (the range of which will determine the range of inductance that can be measured with one crystal). The inductance is found from the formula for the resonant frequency of a parallel tank circuit given the frequency and the capacity. A nomograph relating L, C and frequency will save computation.

For those Amateurs with surplus or able to get surplus gear, it will be stated that the GP-7 Aircraft Tuning Unit has a variable condenser in the range of 20-180 pF. that is quite linear. The dial divisions break down to about five divisions per 1 pF., which is handy for reading. The TU5B Tuning Unit of the BC191 (B24 Liaison Transmitter) has several calibrated fixed condensers handy for calibration of another variable condenser.



Operation of the circuit is quite instructive and one can easily note how the capacity changes on the high side of resonance changes the frequency much faster than on the low side of resonance. The tank response can be noted for it is the tank Q which determines the oscillation range as the crystal Q is much greater.

If two tube sockets are wired in the set one can determine the tube insertion capacity by tuning to a peak of grid current with both tubes inserted and then withdrawing one. The amount of capacity that needs to be added will be the capacity associated with one tube and would need to be added to condenser capacity for the true amount of capacity.

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A Triple Conversion Amateur Band Receiver

BY DON B. KNOCK* (VK2NO), M.I.R.E. Aust.

IT was an article in England's "Short Wave Magazine," by G2IQ, in the issue for August, 1947, on "Amateur Band Receiver Design" that really started this thing off—this quest for appropriate selectivity, plus stability. G2IQ's 110 Kc. i.f. assembly prompted a similar set-up, and this, with a 175 Kc. i.f. channel, was a revelation when used in this "built-up" Amateur area. The receiver then constructed turned out to be a massive affair, as ex-Navy coil turrets—those 7 or 8 inch diameter moulded bakelite affairs—were adapted for use in the front end. The final creation was a rack and panel arrangement about as large as the wartime Kingsley AR7, complete with power supply and that was a generously proportioned structure.

The line-up was EF50 r.f. stage, mix./osc., 6U7G 1st i.f. at 1980 Kc., ECH35 crystal osc. at 2155 Kc. (a disposals crystal I had on hand), two 6U7G i.f. stages at 175 Kc., 6Q7G second detector with 1N34 noise limiter, 6V6G audio output and 6J5G beat oscillator. The voltage regulated power supply used a 5Y3G rectifier with VR150/30 regulator.

This receiver, in completed form, satisfied a need long in evidence; that of more than average selectivity for 14 Mc. phone operation in particular. Despite the inherent stability of the second frequency changer, which used a Pierce type crystal oscillator, an irritating fault showed up in the front end—one of drift and frequency change. It was attributed to a number of causes, including the use of a combined frequency changer valve in the signal input. With due attention to obvious engineering practice in receiver construction, these faults could have been hunted down. The use of a separate oscillator valve with appropriate zero and negative temperature capacitors would have done the trick.

By this time, however, the writer's liking for trying anything at least once had resulted in being attracted to the use of a crystal-locked signal input circuit in conjunction with a tunable i.f. channel. The much-vaunted Collins 75A kind of receiver indicated the commercial trend and the idea was uppermost that some day something of the kind might be tackled, a sort of Chinese copy!

With the passage of time, and the inevitable acquisition of war surplus gear, came the urge to get on with the job. A further filip was provided by that excellent crystal converter article by WIDX in "QST" for December, 1948. With a lone but good 6J6 in the spare valve quota, plus a couple of 6AK5s, there seemed to be no further excuse for inaction.

THE SET-UP

Conventional chassis construction was the initial plan, but a light, yet very strong frame from a BC375E transmitter swung the vote again in favour of rack and panel assembly. Moreover, that frame only cost me 2/6 over a Sydney counter renowned for "lucky dip" bargains. So it was that the present triple

conversion receiver arrangement came into being, starting off some moons ago with a 14 Mc. crystal converter—an exact duplicate of the WIDX design. This, for the benefit of those who may not have seen it, uses a 6AK5 as a neutralised triode r.f. amplifier with a 6J6 crystal osc./tripler, a 6AK5 mixer, and 6C4 cathode coupling output valve. The latter was dispensed with as not being imperative and the injection frequency broad-banded out around 1900 Kc.

The crystal used in the writer's converter is 5450 Kc. Hitched to an average receiver tuning between 2350 and 1950 Kc. for the requisite coverage of 400 Kc., the result was at once impressive. A

extra shielding seemed to have much effect, and the prospect of those intruders in the middle of "twenty" was appalling. Reluctantly, that i.f. tuner was scrapped, although more patience might have decreed otherwise.

About this time, a Short Wave Listener friend came to light with a present in the form of one of those natty little American "Command" receivers—a CBY46104—normally of not much use to a VK, covering a non-Amateur part of the h.f.s., 1.5 to 3 Mc.

Having acquired this 1.5-3 Mc. box of tricks, the thought immediately surged uppermost, what now of the 14 Mc. crystal converter? In order to put

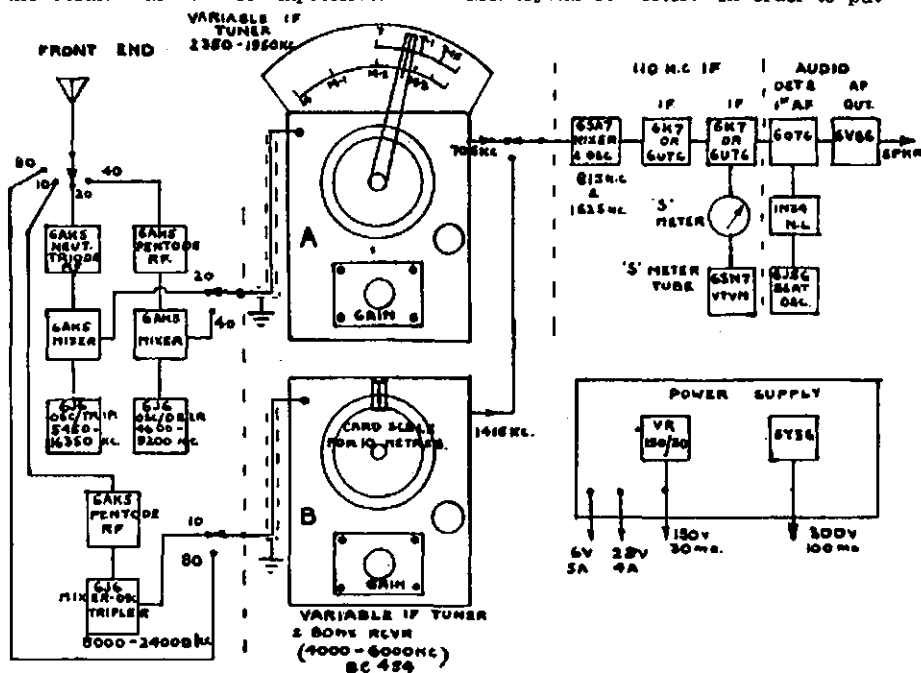


Fig. 1.—Block diagram of VK2NO's Triple Conversion Receiver.

A—Command Receiver Unit CBY46104 (1.5 to 3 Mc.)

B—Command Receiver Unit BC454 (3000 to 6000 Kc.)

few "joeys" occurred until the 6AK5 triode r.f. stage in the converter was tamed, but with that done, the spurious carriers vanished.

With the 14 Mc. converter tested and accepted as a worthy keystone to better things in receivers, a move was made in the matter of low frequency i.f. channel and input tunable over a range of 2 to 4 Mc. Simple enough? Yes, but with a penalty should shielding be only partial and not completely effective. The assembly was made up with a 6SK7 r.f. stage ahead of a 6SA7 mixer/osc., followed by two 6U7Gs at 110 Kc., 6Q7 detector, 6H6 noise limiter, 6V6G audio, and 6J5 beat oscillator. A reasonable amount of care was taken with the layout and the construction, but evidently not enough. Slap around 3 Mc. on the tuner dial appeared a cluster of strong unwanted oscillator sub-harmonics and hard-to-define beats. No amount of

this into action with the least toil, a 28 volt heater transformer was made up from an old power transformer assembly, a B supply hitched on, and the little receiver connected up to the crystal converter. Presto, a nice clear 400 Kc. for 20 metres; no joeys, just Amateur signals, and everything nice and stable in the c.w. world.

However, as things stood, the i.f. channel in the CBY46104 didn't help much, being at 705 Kc., so a simple way out was then tackled. The previously scrapped i.f. tuner structure was re-built with 6SA7 frequency changer from 705 Kc., picking off the i.f. from the Command receiver 12SR7 diode plate through a 50 pF. condenser and screened lead. The 12A6 is left in position because of heater supply considerations. Followed by two stages of 110 Kc. i.f. with 6U7Gs, 6Q7G second detector/a.v.c. with 1N34 series noise limiter, 6SN7

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v.t.v.m. bridge type S meter and 6J5 beat oscillator. The result is just what the doctor ordered.

CONVERTERS

Little elaboration is needed on the construction of WIDX's converter. Sufficient to say that it is employed just as described in "QST" except that the 6C4 cathode-coupled output valve is omitted, and a capacity output (50 pF.) taken from the resonant (1900 Kc.) anode circuit of the 6AK5 mixer. Another converter was made up for 40 metres; in this case using a 6AK5 r.f. stage as a pentode, 6J6 crystal osc./doubler with 4600 Kc. crystal, and a 6AK5 mixer. The anode circuit of this is fed through a 2.5 mH. r.f. choke with capacity output taken for the i.f. injection.

As the 4600 Kc. crystal provides the 150 Kc. in the (Australian) 40 metre band between 2000 and 2150 Kc., the advantage is that this is inside the Command unit tuning range already in use for 20 metres. It means that a simple modification to the dial gives a handsome amount of bandspread on 20 metres and plenty on 40 metres also, using the common scale and pointer.

COMMAND I.F. TUNER DIAL MODIFICATION

By marking with a pencil on the black metal dial the limits of the 20 metre band as checked by a frequency standard, the centre line is the position at which to fix a clear perspex or celluloid pointer, 3½" in length and about ¼" wide. This is cemented with an adhesive such as Pliobond to the dial and also pinned in position as a precaution by the use of small self-tapping screws. A piece of thick celluloid measuring 4½" by 3" is first frosted by rubbing with steel wool or fine grade sandpaper, and then fixed to the top edge of the Command unit panel by self-tapping screws. The calibration is done from established standards and marked in with a fine mapping pen and black drawing ink. When marking is completed, wash the surface over with artist's clear lacquer.

The effective spread on 20 metres is four inches, and on 40 metres, two inches. For illumination, two 12 volt lamps in series are fitted behind the scale.

Because a.v.c. is included in the 110 Kc. i.f. channel, no alteration was made in this respect to the Command unit.

To carry on the idea of the receiver further, a second Command unit, the BC454, which covers 3 to 6 Mc., can be obtained and this unit in itself will take care of 80 metre requirements. Crystal locking of a signal input tuner is not considered to be particularly advantageous for that band and so the little tuner unit can be applied in the way it was intended, but with the added advantage of "Q5'er" selectivity by the conversion to the 110 Kc. i.f. channel.

To cater for 10 metres, however, we have here an ideal combination by using a converter for that band, employing a mixer-crystal osc./trippler from 8,000 Kc., so that the Command unit is then functioning for the purpose between 4 and 6 Mc. The BC454 has a different i.f. channel to the CBY46104, and is at 1415 Kc., so that an alternative input circuit is needed for the 6SA7 frequency changer in the final i.f. unit.

Simple switching and the grid and oscillator sections covering the requirements takes care of this. Standard broadcast coils, tapped for cathode coupling, are padded to hit 815 and 1525 Kc. respectively, with adequate shielding against direct pick-up from local broadcasters.

S METER

Any of the usual signal strength meter applications can be used, but the one favoured by the writer is that diagrammed here. It has the following advantages:—

- You don't have to break into the i.f. anode circuit to insert the meter.
- The sensitivity is adjustable to suit the particular receiver to which it is adapted.
- Once the bridge is balanced, the meter seldom needs to be reset for zero or calibration.

A double triode valve is applied, and may be a 6SN7, 6SL7, 6C8G, 6F8G, or other suitable types.

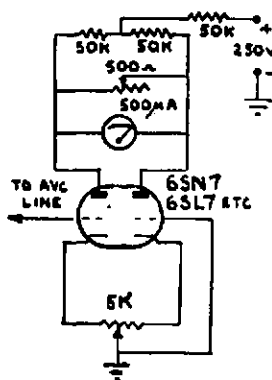


Fig. 2.—S Meter (v.t.v.m.) for Triple Conversion Receiver.

Each triode functions as a leg in the bridge in conjunction with the 50,000 ohm resistors. There is a 500 ohm variable shunt resistor across the meter, which should be of 500 microamps or less. Balance for a zero reading is adjusted by the 5,000 ohm potentiometer from cathodes to earth, and even with line voltage variation, there is rarely any need to reset this.

The grid of one triode section is earthed and the grid of the other connects to the a.v.c. line at a point where it is by-passed to earth by the a.v.c. filter condenser.

POWER SUPPLY

Power requirements call for a transformer giving h.t. at 300 volts per side at 100 Ma. or more, with 6.3 volt and 5 volt windings. If the procedure with the Command units is followed as in the original set-up, a heater transformer giving 24 to 28 volts at 3 or 4 amperes will be needed. This might just as well be the practice instead of rewiring the heaters for 12 volt operation. You would still need a 12 volt heater as an extra, and the idea of substituting 6 volt valves for the 12 volt types fitted is not a particularly good one. Why discard perfectly good 12 volt valves for 6 volt types that won't give any better performance?

Transformer manufacturers make a reasonable enough charge for making up a 28 volt filament transformer of modest current requirement. The writer has had a few made for special jobs at 28/- each, which is fair enough. Otherwise, the job is easy enough with an old transformer with a good primary thereon. Working on an average of 7 turns to the volt, it isn't much of a task to run on about 200 turns of 20 gauge enamelled copper wire.

The high voltage output from the h.t. section of the power supply unit delivers the requisite 250 volts for audio and anode feed and another output, regulated at 150 volts, by way of a VR150/30, is provided for screen and oscillator voltages.

OPERATIONAL POINTS

There is little more to be said about the receiver except to praise its functional features, it really has an excellent performance. Note that a beat oscillator is included in the 110 Kc. i.f. assembly instead of relying on earlier beat oscillator injection as provided in the Command units. It was found that the beat oscillator later in the circuit turned out to be a handy factor in the reception of single side band transmissions; it supplies the missing carrier just at an appropriate level, and with no measurable drift in the crystal-locked front end, a correction of a cycle or two is easily done by the adjustment of the 25 pF. midget variable condenser from the cathode tap on the beat oscillator grid coil to earth. The use of the beat oscillator sections in the Command units is ruled out for this purpose by the fact that where a small screwdriver adjustment hole at the side of the chassis is the *modus operandi*. It was not intended in these units that the beat note be touched once it is bench-adjusted.

The Command units are not provided with a.v.c. as they stand, and reliance was placed entirely on the a.v.c. provided in the 110 Kc. i.f. unit. This turned out to be adequate for the purpose and the gain control on the Command tuners can be more or less pre-adjusted to a requisite level and the required i.f. and audio gain taken care of in the i.f. section.

It is found that the Faraday shielded input to the r.f. stage in the converters on 20 and 40 metres is a real asset where a strong local station may be working in close proximity, physically and in frequency.

The band-pass provided by the two i.f. stages at 110 Kc. is as narrow as one can wish for unless one is a c.w. man exclusively, and not interested in phone. On the latter score, the effect of tuning over 20 or 40 metres with this receiver is to find sizeable gaps in between stations that definitely show overlapping and adjacent channel interference on a normal single 455 Kc. i.f. communications type receiver. Accurate measurements have not been made on the band-width of the 110 Kc. i.f., but it is between 1,500 and 2,000 cycles.

For c.w. operation the receiver is good enough to satisfy the most rabid DX contestant, with the knowledge that unless the station being received is at fault in that respect, signals don't drift even with varying line voltage. They stay put on the tuner dial. If one wishes

to go to the de luxe c.w. requirement, there is no need to include the complicated and not-altogether-satisfactory accessory of a crystal filter. Simplest way is to include an audio filter in the speaker (or headphone) leads. The Heterofil and other more recent schemes are something really worth while, when used in a receiver of this kind.

There is a great deal more that could be written about this triple conversion receiver, but anything missing, such as a circuit of the converters, can be found in the pages of "QST" as quoted. The general idea can be followed readily from the information given. It is indeed a pleasure to use and after a few months of so doing, on 20 metres in particular, the writer would not dream of reverting to the non-crystal controlled front end receiver for Amateur band working. It is admitted that the final contraption is

not very "commercial-looking" in appearance, but the original has been from the start a purely experimental consideration. It represents the culmination of an idea, in fact, a kind of "Paddy's market Collins outfit," if that august Corporation will pardon the liberty of reference. In any case we don't have dollars to consider otherwise!

A final word about the i.f. tuners. It is realised that in this country there have been virtually none of the Command receivers covering the 1.5 to 3 Mc. range (to say nothing of the broadcast model), but there have been quite a few of the 3 to 6 Mc. and 6 to 9 Mc. models sold through dealers, etc. A little figuring will show that various crystals can be applied with these higher frequency units, but the idea of the expanded dial may not be feasible. It is easy enough, however, to make a card scale that can be cemented to the front of the existing circular metal dial, and to calibrate this as required.

Note that the circuit includes a crystal diode noise limiter in series in the 110 Kc. second detector. This can be a 1N34 (if you are lucky to have one), or the equivalent British diode made by G.E.C. and now available around the Australian radio trade.

It will be obvious that the general principle of this receiver combination is applicable only to coverage limited to the narrow frequency needs of our popular Amateur bands. It would not be a simple matter for the receiver dabbler to try to incorporate the crystal front end idea in a general coverage (communication) receiver.

BOOK REVIEW

"The Radio Amateur Operator's Handbook"

This little handbook, compiled by the staff of "The Radio Constructor" in collaboration with the International Short Wave League is a very compact summary of those charts and tables which all Amateurs and Short Wave Listeners use at some time or other.

International Amateur prefixes are listed, both alphabetically and by country. Time conversion charts, accurate frequency transmissions, "Q" code, signal reporting systems and similar information, well presented in 48 pages, make this a useful reference for both the DX old-timer and the new "Z" operator.

Our copy was received direct from the publishers, "Data," Publications of London.

DX C.C. LISTING

PHONE

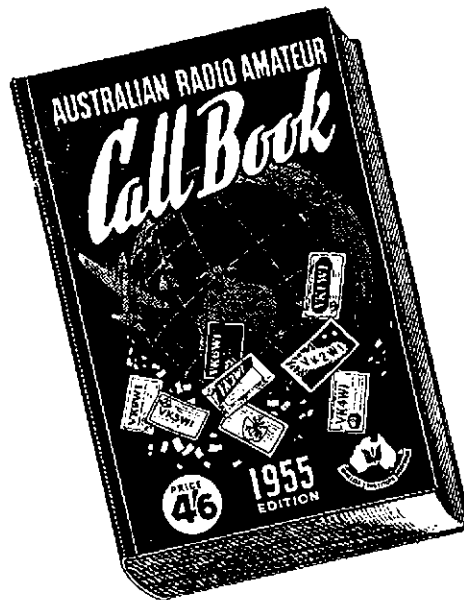
| Call | No. | Ctr. | Call | No. | Ctr. |
|--------|-----|------|--------|-----|------|
| VK3BZ | 3 | 176 | VK4RT | 22 | 124 |
| VK4HR | 12 | 176 | VK4WJ | 17 | 122 |
| VK6RU | 2 | 168 | VK4DO | 20 | 116 |
| VK4FJ | 21 | 164 | VK4JP | 8 | 114 |
| VK3EE | 10 | 163 | VK3MS | 24 | 109 |
| VK3JD | 1 | 155 | VK4CB | 28 | 109 |
| VK3ATN | 26 | 153 | VK3WM | 29 | 109 |
| VK4KS | 9 | 152 | VK3HO | 25 | 103 |
| VK6KW | 4 | 150 | VK2ADT | 13 | 102 |
| VK3LN | 11 | 141 | VK2AHA | 15 | 102 |
| VK4RW | 23 | 141 | VK6PJ | 19 | 101 |
| VK3AWW | 14 | 140 | VK3IG | 5 | 100 |
| VK3JE | 7 | 139 | VK3GG | 18 | 100 |
| VK4WF | 16 | 137 | VK5LC | 27 | 100 |
| VK6DD | 6 | 126 | VK3AUP | 30 | 100 |

C.W.

| Call | No. | Ctr. | Call | No. | Ctr. |
|-------|-----|------|--------|-----|------|
| VK3BZ | 6 | 222 | VK5FH | 31 | 134 |
| VK3FH | 15 | 205 | VK3JI | 25 | 131 |
| VK4HR | 8 | 200 | VK4RF | 11 | 125 |
| VK3KB | 10 | 200 | VK3HT | 37 | 124 |
| VK4FJ | 29 | 191 | VK3YD | 27 | 123 |
| VK4EL | 9 | 175 | VK3EK | 3 | 122 |
| VK3CX | 26 | 175 | VK3PL | 38 | 117 |
| VK5BY | 45 | 172 | VK3JM | 12 | 116 |
| VK2EO | 2 | 170 | VK2OY | 44 | 115 |
| VK5RX | 23 | 159 | VK7LJ | 24 | 114 |
| VK6RU | 13 | 158 | VK4DA | 7 | 113 |
| VK3BO | 33 | 157 | VK7LZ | 17 | 112 |
| VK3CN | 1 | 151 | VK4RW | 47 | 111 |
| VK2GW | 16 | 151 | VK3RJ | 42 | 109 |
| VK6SA | 28 | 150 | VK4RC | 13 | 107 |
| VK4QL | 36 | 146 | VK9XK | 41 | 107 |
| VK4DO | 20 | 144 | VK2AEZ | 35 | 105 |
| VK3XO | 43 | 144 | VK6KW | 40 | 104 |
| VK3VW | 4 | 143 | VK2YC | 34 | 103 |
| VK2QL | 5 | 142 | VK3PG | 46 | 102 |
| VK3XK | 30 | 138 | VK3APA | 14 | 101 |
| VK3JE | 21 | 137 | VK3NC | 19 | 101 |
| VK3YL | 39 | 135 | VK2OA | 32 | 101 |
| | | | VK7RK | 22 | 100 |

OPEN

| Call | No. | Ctr. | Call | No. | Ctr. |
|--------|-----|------|--------|-----|------|
| VK3BZ | 4 | 231 | VK5LC | 55 | 118 |
| VK2ACX | 6 | 223 | VK7LZ | 23 | 116 |
| VK4HR | 7 | 214 | VK3VQ | 46 | 116 |
| VK4FJ | 32 | 206 | VK2ASW | 53 | 116 |
| VK6RU | 8 | 203 | VK6PJ | 44 | 115 |
| VK3JE | 12 | 198 | VK3JA | 43 | 114 |
| VK2NS | 16 | 195 | VK2ADT | 14 | 113 |
| VK3HG | 3 | 181 | VK3HO | 38 | 111 |
| VK4EL | 10 | 175 | VK3MM | 49 | 111 |
| VK6KW | 13 | 171 | VK4RC | 21 | 110 |
| VK2DI | 2 | 170 | VK3ZB | 34 | 110 |
| VK4DO | 15 | 168 | VK9XK | 54 | 109 |
| VK3KX | 1 | 167 | VK2ZC | 25 | 108 |
| VK4KS | 24 | 167 | VK3KR | 56 | 107 |
| VK4RW | 52 | 155 | VK2YL | 11 | 106 |
| VK9GW | 48 | 153 | VK9DB | 59 | 106 |
| VK3AWW | 45 | 150 | VK3AWN | 36 | 105 |
| VK3LN | 28 | 144 | VK6WT | 58 | 105 |
| VK5FL | 26 | 143 | VK2YN | 18 | 104 |
| VK4WF | 40 | 141 | VK4UZ | 37 | 104 |
| VK3HT | 41 | 141 | VK6PW | 59 | 104 |
| VK3MC | 5 | 139 | VK2HZ | 17 | 103 |
| VK3OP | 19 | 137 | VK7KB | 30 | 103 |
| VK6DX | 42 | 137 | VK2TI | 37 | 103 |
| VK6DD | 22 | 136 | VK3YS | 57 | 103 |
| VK2ADE | 28 | 133 | VK7RK | 31 | 102 |
| VK3JI | 33 | 131 | VK4TY | 35 | 102 |
| VK2AHA | 9 | 128 | VK5HI | 51 | 101 |
| VK2AHM | 20 | 125 | VK2TG | 39 | 100 |
| VK3PG | 47 | 124 | | | |



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AMATEUR CALL SIGNS

FOR MONTH OF JUNE, 1955

NEW CALL SIGNS

- VK—
2DD—A. Davis-Rice, 7 Raymond Rd., Neutral Bay, Sydney.
2OK—J. T. Lake (Major), 48 The Promenade, Sans Souci.
2APF—F. W. Fowler, 4 Thompson Cres., Tamworth.
2AUM—A. Maxwell, 24 Coleman St., Westmead.
2ZAU—K. Woodward, 35 Raeburn Ave., Castlecragh.
2ZBA—J. S. Adkins, 10 Middle Head Rd., Mosman.
2ZBC—F. J. Caton, 23 Jefferey Ave., North Parramatta.
2ZBR—B. H. Ridley, 4 Woodstock St., Bondi Junction.
2ZBS—W. J. Steuart, Hotel Acton, Canberra, A.C.T.

Victoria

- 3JI—J. R. Lancaster, 259 Nepean Highway, Parkdale, S.11.
3SD—R. V. Wilson, 9 Vine Grove, Carnegie.
3TG—E. L. Blackmore, Dundas Rd., Maryborough.
3VW—G. Stobie, 70 Bell St., Heidelberg West, N.23.
3AVH—J. F. Hirst, 853 Drummond St., North Carlton, N.4.
3AVR—H. V. C. Randall, C/o. J. C. Martin, 4 Hooper St., Murrumbena.
3AYM—G. A. MacFarlane, Pearsondale, via Sale.
3ZBG—J. G. Goodall, C/o. S.R.W.S.C., Tocumwal Rd., Numurkah.
3ZBK—R. G. Klrby, Lot 58, Pearl St., West Essendon.
3ZBL—E. L. McLean, 1 Acacia St., Murrumbena, S.E.9.

South Australia

- 5SG—S. G. Tonkin, 9 Abbotsbury Place, Evandale, Adelaide.
5YL—L. Lindley, 56b Brighton Rd., Glenelg.
5ZAD—P. M. Williams, 42 Harrow Rd., Somerton Park.
5ZAM—J. McG. Moffatt, 8 Swan Terrace, Port Adelaide.
5ZBC—L. E. Coombe, 44 King St., Mile End.
6ZAC—J. F. Chambers, 17 Leon Rd., Dalkeith.

Tasmania

- 7DJ—D. H. Johns, 28 Waterworks Rd., Dynnynne, Hobart.
7ST—Launceston Army Signals Radio Club, Paterson Barracks, Launceston.
7ZAJ—P. J. Edwards, 9 King St., Sandy Bay.

Territories

- 9WI—Wireless Institute of Australia, Papua-New Guinea Division, Station: Five Mile, Port Moresby; Postal: Box 58, Port Moresby.

CHANGES OF ADDRESS

- VK—
2BD—A. E. Behrmann, Flat 6, 11 John St., Petersham.
2MJ—A. J. T. Crisp, Lot 28, Tempe St., East Bankstown.
2TU—A. T. Boshier, 324 West St., Crows Nest.
2ADB—A. A. Cheetham, 70 Edward St., Redfern.
2AEN—V. S. Joyce, 35 Oaks Ave., Dee Why.
2ALT—W. C. Asplet, 23 Abercorn St., Bexley.
2AUP—K. Postler, 121 Brighton Boulevard, North Bondi.
2AYD—D. E. Evans, Station: On board S.S. "Bundaleer"; Postal: C/o. Adelaide S.S. Co. Ltd., Bridge St., Sydney.

Victoria

- 3BC—B. C. Cooper, 48 Spicer St., Beaumaris.
3CM—H. G. Selman, 10 Charles Court, West Moorlap, Geelong.
3ACD—R. A. Hipwell, "Ralern," Pier St., Dromana.
3AIL—I. Leeds, 9 Moorookyle Ave., Oakleigh, S.E.12.
3AJQ—J. R. Kling, Little Ople St., Lower Fern-tree Gully.
3AJS—J. S. Duncan, Station: 82 Dandenong Rd., Caulfield; Postal: C/o. Commercial Bank of Aust. Ltd., 421 Bourke St., Melbourne.
3AKC—G. J. Griffiths, 29 Ryley St., Wangaratta.
3AWV—G. C. R. Waters, 12 Allambee Cres., Yallourn.
3ZAH—R. H. Haymes, 57 Latham St., East Bentleigh.
3ZBW—D. G. Walker, 1 Goode St., East Malvern, S.E.10.

Queensland

- 4DA—M. J. Swaby, Station: 106 Drayton St., Dalby; Postal: 95 Cunningham St., Dalby.
4FH—J. F. Bull, Flat 4, Vella's Bldgs., Victoria St., Mackay.

4HM—H. J. Murphy, 39 Hunter St., Woolloowin, N.3.

4KB—P. J. Kelly, Cambridge St., Camp Hill, Brisbane.

South Australia

5DZ—J. A. Casey, 28 Moore St., Enfield.

Western Australia

- 6AE—H. A. Lee, 98 Beatrice St., North Innaloo.
6LJ—J. Mead, 110 Edenborough St., Mt. Hawthorn.
6ZAK—D. J. Knox, 3 Kingsley Drive, South Guildford.

Tasmania

- 7PF—P. D. Frith, Penquite Rd., Norwood, Launceston.
7YH—F. W. Hand, Esplanade, Seven Mile Beach.

CANCELLED CALL SIGNS

- VK—
2SG—S. G. Tonkin. Now VK5SG*.
2AFS—R. V. Wilson. Now VK3SD*.
2ZBF—F. W. Fowler. Now VK2APF*.
3QQ—J. R. Lancaster. Now VK3JL*.
3UF—J. T. Lake (Major). Now VK2OK*.
3ANL—E. L. Blackmore. Now VK3TG*.
4DE—J. F. Hirst. Now VK3AVH*.
4RT—R. Thorley.
1DJ—D. H. Johns. Now VK7DJ*.
9VW—G. Stobie. Now VK3VW*.
* See New Call Signs.

TRANSISTOR QRM

Has anybody encountered Transistor QRM yet? It is the latest bugbear in U.K., it having been found that some transistor hook-ups, if used with a normal antenna, may cause serious interference with neighbouring b.c. receivers of conventional type.

It is thought that things will be bad enough, without having a plague of hissing transistors adding to t.v.i. problems in the near future! Most areas are notorious for electrical appliance din. —VK2NO.

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National Field Day, 1955, Results

The Field Day for 1955 was cancelled by the Contest Committee because of extensive emergency work in New South Wales, but after requests by interested Amateurs, the Contest was held on 3rd April.

Participation seemed less than in previous years and a perusal of logs shows that active portable stations numbered in VK2, 4; VK3, 16; VK4, 1; VK5, 1; with no indication of activity by the other Divisions.

The top scorer this year was VK3YS operating exclusively on 144 Mc. with 0.5 watt input to a 6AK5 and a five over five beam.

Score is the highest gained in any section.

Portable

| | | |
|----------------|-------|--------|
| VK3YS | 72.00 | points |
| VK2WI | 33.75 | " |
| VK3IE | 16.00 | " |
| VK3AHH | 16.00 | " |
| VK3ADW | 15.43 | " |
| VK3RN | 8.75 | " |
| VK3GE | 7.60 | " |
| VK3ZAM | 5.60 | " |
| VK3APB | 4.00 | " |
| VK5PS | 3.40 | " |
| VK3SX | 2.36 | " |

Fixed

| | | |
|----------------|------|--------|
| VK3ARJ | 6.00 | points |
|----------------|------|--------|

Listener

| | | |
|--------------------|----|--------|
| N. G. Clarke (VK2) | 52 | points |
|--------------------|----|--------|

The Contest was set for early March by the Committee, following a directive

by Federal Convention that it be held at this time, but comment from entries indicates that a holiday week-end would be more suitable as it allows an extra day following the Contest and that April can be decidedly cold for this type of contest.

The Committee will review the rules in the light of comment received and endeavour to suggest amendments which will better meet the needs of the Contest.

Awards

- VK3YS—1st in Australia.
- VK2WI—1st VK2, Open Section.
- VK3IE—1st in the Phone Section (excluding VK3YS).
- VK5PS—1st, VK5 Phone Section.
- VK3AHH—1st in the C.w. Section.
- VK3ARJ—1st VK3, Fixed Station.
- N. G. Clarke, VK2 Listener.

—Federal Contest Committee.

BI-MONTHLY VICTORIAN SCRAMBLE

In accordance with a motion passed at the 1954 State Convention, the Divisional Contest Committee of the Victorian Division has organised this Bi-monthly Victorian Scramble in order to foster Amateur Radio activity on all frequency bands allotted to Australian Amateurs. It is further intended to train, by means of this Scramble, Victorian Amateurs for the possible requirements of Civil Defence Communication work. For this reason, the rules require participants to show ability in speed and accuracy.

RULES

1. The Bi-monthly Victorian Scramble is open to all transmitting Amateurs resident in the State of Victoria, and to Short Wave Listeners resident in the Commonwealth of Australia. However, only financial members of the W.I.A. are eligible for awards. Transmitting participants will endeavour to contact as many other Victorian stations as possible.

2. Until further notice, the Scramble is to be held on each first Monday of the months October, December, February, etc., during the period 2000 to 2200 E.A.S.T.

3. Participants may enter one of the following sections:

- Section A: C.w. only.
- Section B: Open—C.w. and Phone.
- Section C: Phone only.
- Section D: Receiving Section.

4. Participants may use any frequency band allotted to them, but only one contact per station is permitted, regardless of the band of operation.

5. Participants must observe all regulations as laid down in the "Handbook for the Guidance of Operators of Amateur Wireless Stations." Any breaches will lead to disqualification.

6. All transmitting stations entering the Scramble will call "CQ VK3."

7. Transmitting stations are required to exchange the signal report and two groups of five letters each. The procedure shall be as follows: Each participant selects two groups of five arbitrary letters at the beginning of the Scramble,

passes them to the first station contacted, and receives two groups. In following contacts the participant will pass the groups received in the preceding contact.

Example (c.w. contact): Station "X" passes "589 HBDEF QLMRS" to station "Y" and receives "579 AMREF DBECG." Next, station "X" contacts station "Z," passes "599 AMREF DBECG" and receives "599 DRAIG GHKQ." Thus station "X" will use the groups "DRAIG GHKQ" for the following contact, and so on.

The above example is also valid for phone contacts if the RST report is replaced by an appropriate RS report. A complete exchange of reports and groups must take place before any points may be claimed.

8. Transmitting participants score one point per contact.

9. Short Wave Listeners will record contacts of stations participating in the Scramble. One point will be earned for logging the contact of a station, complete with report and groups sent by that station. Only one such log entry may be made of any station, regardless of the band of operation. The call sign of the station being contacted must also be recorded in each case.

10. Logs of transmitting stations must show in this order: Time (E.A.S.T.), band of operation, call sign of station worked, report and groups sent, report and groups received.

Logs of receiving stations must show in this order: Time (E.A.S.T.), band of operation, call sign of station heard, report and groups sent by that station, call sign of station being contacted.

Participants are required to submit a signed declaration that all P.M.G. regulations and Scramble rules have been observed.

11. Certificates will be awarded to the top scorer in each section.

12. Entries of all participants must reach the Divisional Contest Committee, Wireless Institute of Australia, Vic. Div., 191 Queen Street, Melbourne, C.I., on or before the last day of the month in which the Scramble was held.



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DX ACTIVITY BY VK3AHH†

PROPAGATION REPORT

3.5 Mc.: Conditions for North America existed between 0730z and 1300z. Break-throughs to Africa were reported around 1800-1900z.

7 Mc.: Consistent conditions for North America were accompanied by break-throughs from the Far East, and Central and South America around 0600-1700z. Contacts between South Africa and Western Australia were made between 1300 and 1630z. European conditions existed over the long route 0800-0800z and, over short route, around 2000-2200z, 2300-2400z in Western Australia, respectively.

14 Mc.: Again, an accurate statement on the times of break-throughs is difficult. However, the following appeared to be the peak periods: For Europe 2300-0200z and 0500-0800z; for North America 1000-1700z and 0500-0700z; for Central and South America 2200-0000z and 0200-0700z; for Africa 0400-0800z; for South-East Asia, the Far East, and the Pacific Islands no definite times can be mentioned.

21 Mc.: Conditions on this band have deteriorated but break-throughs to North America (2300-0400z), Africa (0600-0800z) and Europe (0900-1100z) have been reported.

27 and 28 Mc.: As was to be expected, propagation conditions were not as good in July as they were reported for preceding months. No reports have been received.

NEWS AND NOTES

The wheels of history turn through decades and centuries to better technical achievements. If we ever had space visitors, they were far too shy to get out and tell us about their trip, about our own ionosphere, and where we have to tighten a few screws to improve conditions. Thus we have to do it ourselves. Our tiny satellites are a first step towards practical and effective ionospheric research. And perhaps our first space ships will cruise around before this eventful century is over. Get ready for the "Worked All Planets" award!

Back to earth, ill weeds are growing space in our 7 Mc. garden! Another commercial c.w. station was observed on 7013 Kc.: VU9 in contact with SOX (from 30H).

Can you receive on 7 Mc.? Please have another look at the list of b.c. stations there—in "A.R." 7/55—and send in your report. Thank you!

KC6CG is looking for VK5—Northern Territory on 14 Mc. (from 3KR).

G3HPM will operate ZD9AD on all bands during an expedition on Gough Island. (from 3YS)

ZC3AC appears to be active again from Christmas Island (from S.C.DXC.).

Legitimate VP7 stations on Bahamas Island have the letter "N" after the numeral.

BVIUS and C3WV represent Formosa. (from S.C. DX C.).

Canadian Maritime Mobile Stations use VE0 as prefix (from 3YS).

Andoy Island is on the map with LB3IC.

YJIDL's frequencies are 7000.5, 14001, and 14055 Kc. (from 3KR and 3YS).

QTHs OF INTEREST

(From 3JA, N.C. DX C., S.C. DX C.)
 XW8AB—P.O. Box 6, Vientiane, Laos.
 AP2Q—121 Gar Wood Rd., Quetta, Pakistan.
 AP2U—6 Roberts Market, Quetta, Pakistan.
 ODSAF—Box 150, Tripoli, Lebanon.
 ODSAY—Box 3647, Beirut, Lebanon.
 OG5PU—Box 1945, Elizabethville, Belgian Congo.
 MP4NL—Box 40, Bahrain Island.
 KA0J—F.E.A.R.L. Box 111, A.P.O. 500, C/o P.M. San Francisco, Calif.

† Hans J. Albrecht, 10 Belgravia Ave., Box Hill North, E.12 Vic.
 * Call signs and prefixes worked.
 †—zero time—G.M.T.

ZC2PJ—P. J. Reeves, Direction Island, Cocos-Keeling Group, Indian Ocean.
 MP4QAL—Fergus Walshe, Decca Navigator Co., C/o. Shell Oil Co., Doha, Qatar.

ACTIVITIES

3.5 Mc.: It is nice to have a report on 3.5 Mc. from Western Australia; thanks 6EJ! 8EJ reports Ws. Eric BERS195 follows with VR2CI, ZM6AS, Ws, W6, W7, Z55CV (1815z), Z55PM (1845z). The next in line is Dave Jenkin who heard W7, W3, W5, W6, W4, W6, W9, and 3AHH adds Ws.

7 Mc.: Laurie ZAMB heads the list with G2HLF, G3BVT*, VK1ZM*, FK8AC*, VE7*, KP4KD* on c.w. and HP3FL*, T2GC*, Ws on phone. Neil 3HG reports VE8*, and Jack 3JA worked 5HMW*. Ivor 3XB follows with CQ* and Reg 3YD adds VP9BM*, ZC2PF*, HB9NH*, FB8R*, VP9BO*. Fred 3YS extracted VK1ZM*, FK8AO* and KM6AX, Lance 3ZA worked VE3* 8EJ presents a nice list with DU7SV*, G6ZO*, SM6CC*, ZD8BX*, ZB3JM*, ZS1BK*, ZS4A*, ZS5QD*, ZSSRB*, ZS5U*, ZS6CH*, ZS6GL*, ZS6R*, ZS7D*. BERS186 heard CN8EJ, FK8AJ, HB9EU, JAIAGU, JA8AE, JA8AJ, KP4CC, KP4RE, PY3AHW, PY5VF, SM5BCE, VS1GP, YV1AD, ZBIJRK, Jim Hunt and his brother contribute VJ1EJ, JAIQN, JA8NA, JA8AE, JA7, YJ1AA, KV4AA, VS6AV, DU7SV. Dave Jenkin sends another fine report with DU7SV, KP4RE, FK8AJ, JAI1AH, VE2, KP4CC, YV1AD, CM8RB, FK8AO.

14 Mc. c.w.: Noel 2AHH: KC8AJ*, JA8*, HRIAT*, EA3CY*, DL*, FK8AJ*, OE2HW*, VS1GV*, DU7SV*, PA0AO*, 2AMB: OE3JE*, SHG: DL*, 3JA: Gs*, KL7*, VE*, XW8AB*, LB3IC*, GW8DC*, OA4ER*, OZ2N*, ZS1BK*, VK1ZM*, VE3*, DL*, PA0*, FB8R*, SM*, LA*, DJ*, OH*, GW3QN*, CN8AP*, ZM6AT*, GW3CR*, VU2RC*, EA3GF*, OE3JE*, HB9*, ON4PA*, DU3D*, CT1JS*, ZS5JM*, ZS2BC*, FK8AM*, EA3CY*, F8*, XE1MJ*, CE3VD*, ZD6BX*, Ken 3KR: KC8CG*, YJ1DL*, KP4TF*, HB1PQ*, KZ6PR*, VP9BM*, 3YD: VQ6LQ* and ZD6BX, FV7YE, AP2Y, ZC5IS, PJ2AJ, PJ2AR, W6JDU/V06, Allan 3AHH: XE1MJ*, KC8CG*, CN8GQ*, CO8DL*, G*, 4X4CK*, Bob 4RW: YN1PM*, SM*, John 5HI: ON4FU*, 8EJ: CO2CT*, DL*, OE1WB*, OE3JP*, OE3SE*, OH*, ON4PA*, XW8AB*, C2ZPJ*, ZS6AJQ*. Roy 9AU: YV5AE*, ZSSQT*, 457KH*, T2PZ*, CO2WD*, FYTYC*, KJ6BG*, XW8AB*, VS4CT*, VE*, DL*, ZD6BX* and PY8MC, VP9BW, FB8BR, VQ8CB, BERS195: CO6LC, COTAH, DU1CV, DU7SV, FK8AC, FK8AE, FK8AH, HRIAT, KJ6BG, KJ6FAA, KV4AA, KR6QZ, LU1AR, OE13USA, T2ES, VE8YC, VK1ZM, VP9BM, VR2AG, VR2AR, VR2AS, VR2BZ, VR2CZ, XE1MJ, YV5BZ, ZM6AS, SM4AWC/MM, SM8BHQ/MM, Jim Hunt and brother: KV4AA, FK8AC, Gs. Dave Jenkin: W1, SM, JA6FB, VR2CG, W5, PAO, W3, W4, JA6AO, DU7SV, SM, CE1BB, G.

14 Mc. phone: Bill 2ACT: W6*, W7*, 2AHH: CO*, YV*, TI*, H87W*, HH4MV*, HP1JF*, XE*, HP3MP*, TG9MB*, YN4CB*, CN8MM*, HR3HH*, EA9BC*, EA3TB*, 4X4*, OD5*, PJ2AA*, VE*, Ws*, VP7NJ*, EA4BF*, HE1OP*, TG9KF*, TG9AI*, VP5DC*, 2AMB: XE2KW, T2GC, YN1RA, 3HG: W7, W8, KV4BB*, a long list of Gs*, OE5CR*, W0*, W8, SM*, F*, CN8JM*, VE*, ON4J*, KA4BG/V04*, W4*, VO6D, 3JA: Gs*, Ws*, ITBU*, I1CLW*, ZSSDE*, EA3CY*, ZM6AT*, ZS5JM*, JA4AB*, JA4BB*, KZ2NS*, 3KR: EA3CY*, VK1DC*, and HP3FL, CS3AC, Stan 3TE: F*, G*, GW3EHN*, GW4CC*, ITTBU*, KX6BU*, TG9MB*, VE7*, Ws*, ZE2IK*, ZS1MQ*, 4X4FK*, 3YD: VS4CC, Harold 3AHC: YV5*, CO*, HRI*, HC1*, VE*, KL7*, a long series of Ws*, XE*, 4RW: ZD3BFC*, KC6ZB*, KA0J*, XE1TR*, VR3C*, VR2CS*, KL7BEW*, 5HI: XE1TR*, VR2CS*, Ws*, VE7*, 9AU: HP1CC*, KA0J*, BERS195: DL, KJ6FAA, KV4BB, KX6BU, OA2A, VK1DC, VK1ZM, ZM6AT, 5A2TZ, Jim Hunt and brother: HR3HH, 5A1TJ, 3V8AS, W0EH/VE8, VE8, KL7FAB, KL7BDK, KL7ZG, KL7AGU, VR2CG, VR2AP, VR2CW, VR2AS, VR2CS, DU7SV, VS1EW, VS1CZ, VS1GT, VS2EF, VS2DY, VS4CT, ZM6AS, ZM6AT, KJ6BH, 4S7SS, VU2MX, VP2DA, KC6UZ, KJ6FAA, C3WV, HK4JR, HK1ID, TG9MB, XE2KW, XE1RE, YV5BY, YV5BQ, CO2BK, CO2CY, CE3PV, CE2CC, EA3CY, PY4CB, PY4AEX, T2ES, T2BXC, T2GC, HP2ER, KP4ABD, YS1MS, XE1AX, YV5AB, F*, ON4CZ, ON4LJ, SM, OE3JK, OE5CK, OE2DB, OH, ITTBU, I1VGF, HMD, I1RGE, 9S4AD, HB9, PA0, Y13WV, Y1ZAM, CW4CC, GMS5P, ODBAB, Gs, DLs, 4X4CK, 4X4FK, 4X4FY, CT1EX, F8, Norman Clark: VR2CZ, KZ2NY, JAI2M, KR6KS, T2CHV, XE1RO, ZS5AJT, VR2CF, KR6GL, KAJ2W, KW6BD, JA4AF, ZM6AS, XE2KW, G, I1VPL, DL, KL7AWR, ZM6AT, I16AT, I1CLW, VK1DC, ZS5JM.

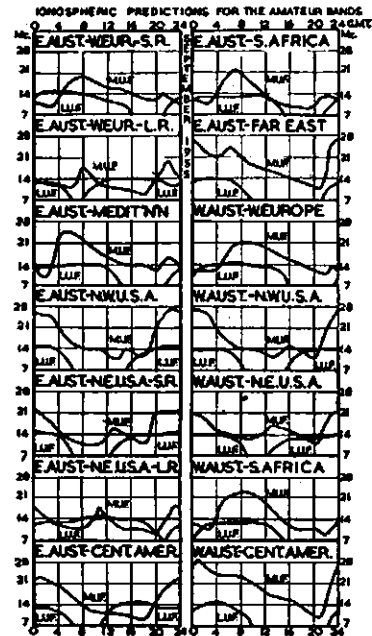
21 Mc.: Neville 2APL heard ZS5JY, Syd, 8CI reports W6*, W9* and said that 4NG heard Europeans and Africans. Frank 3ZU heard W3, W4, W5, W6. Jim Hunt and brother report LU6DJY, HP3FL, CE1BL, T2WMM, FR7ZA, MP4BBL, VS6CW, VR2CG, KA8RK, KA8WQ, DU7SV, KA2DW, KA2GS, KV4BB, VE3QA, VE4RO, W1, W2, W3, W4, W5, W6, W7, W8, W9, W0, KZKZ/MM, W8UKY/MM, W0ZA/MM, W5AXI/MM, W6MZV/MM. Norman Clarke: W6, W8, VS6BE.

27 and 28 Mc.: No reports were received.

Rare QSLs were received by: 2AHH: VQ4EU, VS9KZ, E14X, EA8AY, YN1AA, FR7ZA, YK1AA, VQ3CF, MP4KAC, ZB1CH, T2RC, 2AMB: VK1EG, 3HG: KA4BG/V04, 3YD: EA8DF, VR3A, ZC2PJ, VQ4EG, VP5CC, ZM8AS, VP6CT, OD5H, ZC2IP, 5HI, XE1TR, CN8MM, 9AU: FK5BCC, YN1AA, BERS105: LU4WK, VU2RC, ZSKK, HVISS, YV5DE, KV4BK.

Thanks to the Northern and Southern California DX Clubs and VKs 2ACT, 2AHH, 2AMB, 2APL, 3CI, 3HG, 3JA, 3KR, 3OH, 3TE, 3RW, 3YD, 3YS, 3ZA, 3ZU, 3AHC, 3AHH, 4NG, 4XB, 5HI, 5KR, 6EJ, 9AU, and s.w./s. BERS195, Jim Hunt and brother, Dave Jenkin and Norman Clarke.

PREDICTION CHART FOR SEPT., 1955



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FIFTY MEGACYCLES AND ABOVE

NEW SOUTH WALES

The Midwinter 144 Mc. Contest was held during the evenings of 16th and 17th July, and while the number of stations taking part was not as great as in some past contests, the number operating at the same time must surely have been an all-time record. All agreed that the Contest was one of the most enjoyable held on the band. The Contest was run over two evenings from 1930 to 2300 hours. 39 stations took part, not including those that were standing by unable to take part because they had gear failures. Why do tx, etc., always choose contest time to give trouble?

The results: 1st, 2XX, 55 pts.; equal 2nd, 2JX, 2HE and 2ADY/M, 54 pts.; equal 3rd, 2APQ and 2ATO, 52 pts. Congratulations to Ted 2XX for his fine performance.

The Contest Committee wish to thank all who took part and made the Contest a success. Also, in particular, thanks to the 19 stations who sent in logs.

During the Fox Hunt, held last month, we heard so much hot air from the 2HL-2NP combination, about how good they were and how bad 2OA was, that the Contest Committee thought they would give the HL/NP pair new fields to conquer, so they have made them the Fox for the August 7 Fox Hunt.

Sydney has had a very active visitor, that is very active on 2 mx. Don 2RS, of Albany, has been operating portable while here on holidays. Many contacts have been made and lots of QSL cards have been exchanged. Don told us that he has two 2 mx converters—both xtal locked, one has a p.p. r.f. stage, the other a cascade front end. His reason for this, I am told, is to keep his peace with both VK3s and VK2s, quite a diplomat!

The August meeting of the V.h.f. Group was held in the usual room of the Leichardt-Petersham Technical College and 45 members and visitors were present. Our chairman, Roy 2HO, was unable to attend, owing to a bout with a wog—"a very nasty one," says Roy, so the chair was taken by Percy 2APQ, our Vice-Chairman. The entertainment for the evening being given by Dr. R. Black, 2QZ. Bob presented to the Group a paper entitled "The Life and Work of Heinrich Hertz." In this presentation the members were told how the experiments carried out by this learned gentleman on the transmission of electrical waves were indeed carried out on a v.h.f. wavelength, some very close to 2 mx.

The next lecture was given by Barry Goodman, 2ZAG. Barry prevailed upon a lot of manufacturers and distributors to allow him to bring along to the meeting a range of samples, mostly v.h.f. components, which are available to Amateurs in Sydney. A lot of work had gone into this presentation and the thanks of the Group go to Barry, his XYL and the firms who loaned the samples.

The final talk was given by Bob Winch, 2OA. Bob told us of his experiments, with the thought in mind of using the 12AX7 as a Class B modulator, his line of thought had led him to think that this could be done despite what the valve curves had told him. So he had, in conjunction with 2ANF, carried out tests and satisfied himself that this tube could be used under class B conditions. His findings were that with a load of 15,000 and 4.5 volts negative grid bias, he had a standing plate current of 3 Ma. and he could get 7.25w. of undistorted audio from it, using a driver transformer with a 2½:1 primary to half secondary.

All lecturers were thanked by the meeting for their contributions, a very pleasant evening was spent.

Hugo 2WH is on again, and putting a fairly consistent signal into Sydney.—2AJZ.

VICTORIA

Not even a very wet night dampened the spirits of the participants in the Fox Hunt. There was an excellent turn up, eleven cars, one motor-bike and sidecar, and 32 of the gang joined in the hunt. At the first location in Heidelberg 3VZ was first, followed by 3ALY and 3KD. On the run to the next location he was caught by 3ARY and 3ZAY. At the second location 3VZ was again first, closely followed by Ray Price and 3ARY. Ray Price and Roy 3ARY were new starters in the hunt and both did very well, both made several catches. At the third stopping place, 3AHL and 3ZBH, on their motor-bike, were first, and at the fourth location, which was in a spot behind the jail in Coburg, it was almost a dead heat between 3KD and Ray Price, then followed by all the rest. The final location was held at the home of Eric 3ADU where the gang had supper together and held a post mortem on the evening's run. Many thanks Eric and Ruth for

making your home available to us. 30J acted as control station and was assisted by 3ZAJ with cross bearings, many thanks Bob and Jack.

At the V.h.f. Group meeting, the lecturers were 3AHL and 3ZBH, who described in detail their mobile equipment which they use for field days and fox hunts. With a ZB2 front-end into a Rebecca i.f. strip, together with control panels, modulator equipment and tx they certainly amazed the Group with their ability to get power, supplies and batteries into one motor-bike and sidecar outfit. The rx was equipped with an S meter, which could be thrown from the S meter circuit to a straight field strength meter from the antenna co-ax. This interesting lecture was followed by a short talk from Jack 3ZAJ, who described a new mobile tx he was building with a 5763 in the output stage.

As 2 mx DX has been rather quiet during the last few weeks several of the chaps have been making the most of the time re-building their equipment to be ready for the next good break through. Laurie 3ALY has built up a new final which has a pair of RK34s in p.p. parallel with 40w. input. Sandy 3AMN has built a c.c. tx with a 6146 p.a. with 30w. input. His beam is a four el. rotary and rx is a super regen—under construction is a superhet, rx. Ken 3ZBC is on the band from the Air Force station just outside Ballarat. He is using 80w. to an 829 and a five el. beam. Alan 3ZBE is another call heard on the band recently from the Essendon district. He uses a QQE03/20 and is running 10w. Ian 3ALZ is achieving good results under difficulties which the majority of Amateurs don't have to cope with these days. His shack is situated on the Glenroy Heights where he is unable to get a.c. so he uses a Gibson Girl hand generator for his tx which gives him 3w. He uses a battery rx and with his 5 over 5 over 5 beam has been able to work the DX at Geelong and Ballarat and has been heard in Warnambool. Graeme 3ZAA has increased his power and is now using 80w. to an 829B final. Congratulations to Norm Dench who recently passed his A.O.L.C.P.—3LN.

288 Mc.: Those on are 3AAF, 3AUX, 3QO, 3RI, 3ZAN, 3ZBH, 3AHL, 3YR, 3ADU, 3MB, and 3PL. 3AAF: Tx pr. 676s in p.p., rx modified AR301, ant. Yagi; on at 8 p.m. 3AUX: Tx (a) p.p. 316As with 50w., (b) p.p. RS394s 20w. input, rx 955 r.b. (i.e. rush box or super regen), ant. 8 el. billboard; on at 8 p.m. 3QO: Tx 832 final 20w., rx (a) concent. line xtal mixer, 955 osc. into broad band I.F., (b) p.p. RL18s r.b., separate quench coils, ant. Yagi with variable polarisation; on at 8 p.m., Sundays noon. 3RI (Railways Institute Wireless Club): Tx p.p. RL18s with booster, rx 955 r.b., ant. (a) 5 el. Yagi, (b) dipole 100 ft. up; on the air Tuesdays and Thursdays 9 p.m., Saturdays 3 p.m. Wants to contact Geelong boys. 3ZAN: Tx p.p. 7193s, rx 955 r.b., ant. two 5 el. Yagis side by side; 8 p.m. week nights, noon Sundays. 3ZBH: Tx p.p. 7193s, rx concentric line, 955 r.b., ant. Yagi; 6.30 p.m., Fridays 8 p.m., Sundays noon. 3AHL: Tx p.p. 7193s at top of mast, rx concent. line r.b., ant. Yagi; 6.30 p.m. 3YR: tx p.p. RL18s, rx 955 r.b. 3MB: Tx p.p. CV6s, rx 6AK5 r.b. with concentric line and separate quench, ant. 3 el. Yagi. 3PL: Tx p.p. 7193s, rx 955 r.b.—3QO.

SOUTH AUSTRALIA

50 Mc.: Last month saw a rise in the number of stations operating on this band. Jack 6LR has finished a new n.b.f.m. exciter unit and plans are in hand to use it to drive a new 2 mx rig. Jack has had one check with your scribe and the results were very good, however, some more checks would be appreciated by Jack: what about it chaps? After some months of absence, Les 5AX has shown up again on this band and has been heard working 5RO cross-band on 144 Mc. Ken 5KC has come out of hiding and is back on 50 Mc. again.

Tom 5TL is, from reports, going to operate on 50 Mc. this coming season. As most of you know, Tom is stationed at Alice Springs. You had better get cracking Tom because all the Australian and New Zealand 50 Mc. boys will be after your QSL card in order to qualify for their W.A.S. on 50 Mc. Certificate.

144 Mc.: Three new stations bobbed up on 2 mx last month, viz.: Les 5AX, Comps. 5EF and Des 5DK. The first two stations are located in Gawler and Des 5DK is located about two hundred yards away from Col 5RO in Woodville West! Les 5AX is putting an S8 signal into Adelaide. Les' 2 mx gear consists of 832 p.a. 10 w. input, 12 el. all driven array 40 ft. high; xtal converter feeding BC342; frequency is 144.4 Mc. Comps. 5EF is using a 2E26 p.a. 15w. input, 4 el. Yagi and converter has yet to come. Both Les and Comps. are

All Models Exhibition

At the All Models Exhibition and International Trade Fair to be held at the Exhibition Buildings, Melbourne, from 25th August to 10th September, the Wireless Institute will be exhibiting from 25th August until the 3rd September only. This is a change of date from that advertised in last month's magazine and will be of interest especially to Country and Interstate Amateurs whose help with contacts on 2, 20, 40 and 80 metres will be greatly appreciated by those operating from the stand at the exhibition.

building 100w. finals consisting of p.p. 6146s. Des 5DK has a QQE06/40 as a final on 2 mx, but latest reports are that he is re-building the tx in the hope of obtaining more grid drive.

On 2nd of July, Lou 5LE and Clive 3ACE had a contact on 144 Mc. The contact began on c.w. and towards the end of the contact Clive could read Lou on phone R5 S6. Bob 5RI at Mt. Bryan is copying the 5WI session relayed on 144 Mc. by your scribe. Bob is 100 miles north of Adelaide. Let me know when your p.p. 6146 final is going, Bob, and I will organise some contacts for you. 5MZ, 5WC, 5EN and 5TM are all talking 144 Mc., but to date no results on either receiving or transmitting. Believe Gordon 5XU is going to build a 144 Mc. converter, also 5SR. 5ZAW is about to erect a 16 el. beam fed by p.p. 6146s as a new final amp.

288 Mc.: Stations active last month were Vic. BJH, Bob 58R, Ron 5ZR and 5ZBC.—5MT.

WESTERN AUSTRALIA

The July meeting of the V.h.f. Group was held at the residence of Don 6HK. A motion was passed expressing concern at the proposed changes to the 50-54 Mc. and 144-146 Mc. bands. Despite advantages of the harmonically related 56-60 Mc. band, it was felt that as the change was only in Australia and not throughout the world, the change would preclude any further investigation of DX propagation and the effect of increased solar activity. Whilst crossband contacts overseas would theoretically be possible, the operation of t.v. rx's on Channel 1 in Australia and channels overseas in the 56 Mc. region would eliminate any chance of contacts similar to VK5KL/W7ACS/KH6 and VK6HK/VR2CG.

The suggestion put forward by the Group was that no change be made in the 50 Mc. band and that no use be made of Channel 1. Channel 2 (63-70 Mc.) would then be the lowest channel. Such a proposal, if carried out, would eliminate possibility of t.v.i. due to 56 Mc. harmonics and also would reduce the possibility of Sporadic E caused interference which is highly likely to occur with any t.v. signals on Channel 1. A check of only three VK6 logs showed that there was interstate reception for at least 29 days each summer, every year since 1951. Every year since 1949 has seen VK6/ZL contacts. The lower powers and less advantageously placed aerials of the Amateur compared to those proposed for t.v. do not need mention!

Rolo 6BO gave a very interesting and informative lecture on the design and operation of valve testers and illustrated it with circuits of his own. The thanks of the Group go to Rolo and to Don and his parents for their part in a most enjoyable evening!

144 Mc.: The 144 Mc. Scramble took place recently. Only two new calls apart from the regulars put in an appearance. Welcome Bob 6BE and Lou 6LU to 2 mx! The unofficial winner was Lionel 6ZAE. He used a v.f.o. and his location 1,000 ft. above Perth with such good effect that he worked the maximum possible number of stations. Don 6ZAK, Ron 6ZAR and Len 6ZAT had considerable fun with a portable station in the hills. Denis 6AW put on a signal generator to qualify for the "miles per watt" award, and put it on 146 Mc. Denis made contact with Don 6ZAV and Murray 6ZAM over 4 and 9 miles respectively, using a power of 40 microwatts. He reduced "power" and was still heard by Murray when he was using 8 microwatts!

288 Mc.: Denis 6AW has been busy experimenting with 15Es as an amplifier on this band. He was unable to drive them with his 832 and intends to try a pair of 15Es as triplers driving another pair. Rolo 6BO vouches that Denis' 2 watts to his 832 produce the best 288 Mc. signal he has heard.—6ZAA.

S.W.L. SECTION*

S.W.L. CONTEST

The winners of the S.W.L. Contest sections were: Section 1, largest number of QSLs on Amateur Bands—Ian J. Hunt, with a total of 121 QSLs. Section 3, Broadcast Band DX—Ian R. Woodman, with a total of 82 QSLs. Section 4, largest number of QSLs in all sections—Ian J. Hunt. Section 2—There were no entries in this section.

NEW CONTEST

During the month of September an S.W.L. Contest will be held from the 1st to the 30th September on all bands—180, 80, 40, 20, 15, 10 and 6 metres and is open to all s.w.l.'s.

The Contest winner will be the one who receives the largest number of QSLs confirming ZL signals heard during the month. QSL cards must be received by the end of October.

All QSLs should be sent to the Contest Committee, C/o. John Wilson, 37 Rayment Street, Alphington, N.20, to reach this address by last mail, 31st October, 1955.

* Compiled by John Wilson, WIA-L3004, 37 Rayment Street, Alphington, N.20, Victoria.

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VK3 MEETING

The S.W.L. Group met in the rooms, 191 Queen Street, at 200 hours. The meeting took the form of a Constructional Night when members brought along pieces of equipment under construction. A good time was had by all in ironing out those bugs, etc., in the gear.

VK5 MEETING

From Len Cragen we received news to the effect that the VK5 Division met in the Central Methodist Mission rooms at 2000 E.S.T. on 11th July. QSL cards were distributed and members were issued with official numbers.

Many thanks to Rodger Gillard who brought along his AR8 receiver and gave the younger ones a chance to hear the short wave and Amateur bands.

Len is now VK5 correspondent, and our thanks go to our retiring scribe, Mac Hilliard, for his past services.

OFFICIAL S.W.L. NUMBERS

Federal Executive have now granted official W.I.A. s.w.l. numbers. For Victorian Division members these numbers are WIA-L3001,

WIA-L3002, etc., and for South Australian Division members, WIA-L5001, WIA-L5002, etc. Associate members who wish to have their own numbers are advised to write to the Divisional Secretary of their State, who will then issue a number to them.

INTERSTATE NEWS

Information from other Divisions on the activity of s.w.l.'s in their State would be welcomed for the magazine. Items of interest should be forwarded to John Wilson, (address below these notes) before 1st of each month.

NEW FRIEND

From U.S.A. we received two monthly reports on VK stations heard in U.S.A. The reports are from H. Southwick, 316 Bank Street, Fall River, Mass., U.S.A. Thanks very much for the reports, Mr. Southwick, as we here in VK land appreciate the knowledge of the strength of our signals being heard by s.w.l.'s in W land.

Mr. Southwick is ex-W.I.F.S. He reports hearing VKs 2ZB, 2LX, 2NY, 2FU, 2XZ, 2XJ, 2AUJ, 3XU, 3XB, 3YP, 3ARO, 3FH, 3GU, 3VF, 3TK, 3ZD, 3NM, 3BG, 3MC, 3HI, 4YP, 4BB, 4EM, 5JO, 5KU, 5BO, 7UW—all at S8-9.

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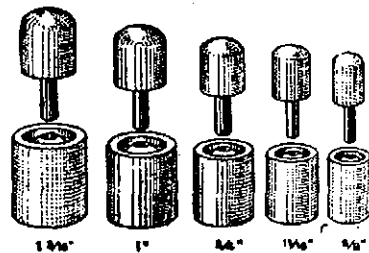
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A "must" for every Ham Shack. Aerial adjustment and efficiency, the easy way. Avoid Standing Waves and T.V.I.

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FEDERAL, QSL, and DIVISIONAL NOTES



FEDERAL

Fed. President: W. T. S. Mitchell, VK3UM.
 Fed. Secretary: L. D. Bowle, VK3DU, Box 2611W, G.P.O., Melbourne.
 QSL Bureau: R. E. Jones, VK3RJ, 23 Landale Street, Box Hill, E.11, Vic.
 DX C.C. Manager: A. G. Weynton, VK3XU, 30 Park St., West Brunswick, N.10.

NEW SOUTH WALES

President: Jim Corbin, VK2YC.
 Secretary: Harry Hickin, VK2ACH, Box 1734 G.P.O., Sydney.
 Meeting Night: Fourth Friday of each month at Science House, Gloucester Street, Sydney.
 Divisional Sub-Editor: Ted Whiting, VK2ACD, 16 Loudon Street, Five Dock.
 QSL Bureau: J. B. Corbin, VK2YC, 78 Maloney St., Eastlake, Sydney (Inwards and Outwards).
 Zone Correspondents: North Coast and Tablelands: Noel Hanson, VK2AHH, Ryan Ave., West Kempsey; Newcastle: Ron McD. Stuart, VK2ASJ, 88 Dunbar St., Stockton; Coalfields and Lakes: Harry Hawkins, VK2YL, 27 Comfort Ave., Cessnock; Western: W. H. Stitt, VK2WH, Camblyoga, Forbes; South Coast and Southern: Eric Fisher, VK2DY, 2 Oxlade St., Warrarong; South Western: J. W. S. Edge, VK2AJQ, Wallace St., Coolamon; St. George: Chas. Coyle, VK2YK, 94 Carlton Cres., Kogarah; Western Suburbs: Barry White, VK2AAB, 33 Flaville St., Concord.

VICTORIA

President: G. Dennis, VK3TF.
 Secretary: C. Gibson, VK3FO.
 Administrative Secretary: Mrs. May, C.O.R. House, 191 Queen St., Melbourne.

Meeting Night: First Wednesday of each month at the Radio School, Melb. Technical College.
 Divisional Sub-Editor: K. E. Pincott, VK3AFJ, 14 Dunscombe Ave., Ashburton, S.E.11.
 QSL Bureau: Inwards—Graham Roper, VK3ZB, 3 Queen Street, Surrey Hills, Vic. Outwards—Frank O'Dwyer, VK3OF, 190 Thomas St., Hampton, S.7, Vic.

Zone Correspondents: Central Western: W. J. Kinsella, VK3AKW, Magdala, Lubeck; South Western: W. Wines, 11 Redford St., Warrnambool, and E. Giddings, VK3ANQ, 8 Nelson St., Warrnambool; North Eastern: A. D. Buchanan, VK3FD, "Booroodal", Wahring; Far North Western: M. Folle, VK3GZ, 101 Lemon Ave., Mildura; Eastern: C. J. Arnold, VK3AJA, McAlister St., Stratford; North Western: C. Case, VK3ACE, Cumtning Ave., Birchip; S.W.L. Group: John Wilson, 37 Rayment St., Alphington, N.20.

QUEENSLAND

President: J. T. Hope, VK4XL.
 Secretary: W. A. Young, VK4YA, Box 638J, G.P.O., Brisbane.
 Meeting Night: First Friday in each month at the Royal Geographical Society Rooms, Ann Street, City.
 Divisional Sub-Editor: J. T. Hope, VK4XL, Royal Parade, St. John's Wood, Ashgrove.
 QSL Bureau: Inwards—J. Files, VK4JF, Wanda St., Buranda; Outwards—Miss Clair O'Brien, 93 Jardine St., Stafford.

SOUTH AUSTRALIA

President: G. M. Bowen, VK5XU.
 Secretary: R. G. Harris, VK5RR, Box 1234K, G.P.O., Adelaide. Telephone: J 1151.
 Meeting Night: Second Tuesday of each month at 17 Waymouth St., Adelaide.

Divisional Sub-Editor: W. W. Parsons, VK6PS, 10 Victoria Avenue, Rose Park.
 QSL Bureau: Geo. Luxton, VK5RX, 8 Brook St., West Mitcham, South Aus. (Inwards and Outwards).

WESTERN AUSTRALIA

President: F. A. T. Tredrea, VK6FT.
 Secretary: J. Mead, VK6LJ, Box N1002, G.P.O. Perth.
 Meeting Place: Perth Technical College Annex, Mounts Bay Road, Perth.
 Meeting Night: Third Tuesday of the month.
 Divisional Sub-Editor: R. H. Atkinson, VK6WZ, P.O. Box 127, Geraldton.
 QSL Bureau: Jim Rumble, VK6RU, Box F319, Perth, West. Aus. (Inwards and Outwards).

TASMANIA

President: F. J. Evans, VK7FJ.
 Secretary: W. G. Tait, Box 371B, G.P.O. Hobart.
 Meeting Night: First Wednesday of each month at the W.I.A. Club Room, 147 Liverpool Street, Hobart.
 Divisional Sub-Editor: V. F. Dore, VK7JD, 29 Brent Street, Glenorchy.
 QSL Bureau: K. A. Johnston, VK7RX, 34 Tower Road, Newtown.
 Zone Correspondents: Northern: M. A. Chaplin, VK7CA, 56 Trevallyn Rd., Launceston; North Western: R. K. Wilson, 11 Cunningham St., Burnie, Tasmania.

PAPUA—NEW GUINEA

President: F. M. Nolan, VK9FN.
 Secretary: D. F. Lloyd, VK9OQ, C/o. O.T.C. Receiving Station, Port Moresby.
 Divisional Sub-Editor: W. Holland, VK9BW, C/o. P.O. Box 76, Rabaul.
 QSL Bureau: D. H. Beadel, VK9DB, C/o. P.O. Box 107, Port Moresby.

FEDERAL

LIMITED (TECHNICIAN) LICENSES

In order that a clear picture can be obtained Federal Executive has carried out a survey of the license figures of recent years.
 The following list shows the number of licenses issued and cancelled each month (where available) from June, 1952, to May, 1955 inclusive. As the first Z call sign was issued in June, 1954, there are two years with no Z calls and one year with full calls and Z calls.

| Month | 1952-1953 | | 1953-1954 | | 1954-1955 | | 1954-1955 | | Z Calls Cancelled replaced by Full Calls |
|-----------------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|--|
| | New Calls Issued | Calls Cancelled | New Calls Issued | Calls Cancelled | New Calls Issued | Calls Cancelled | New Calls Issued | Calls Cancelled | |
| June | 21 | 11 | 11 | 21 | 13 | 7 | 18 | — | — |
| July | 12 | 9 | 7 | 6 | 16 | 13 | 3 | — | — |
| Aug. | 13 | 10 | 10 | 8 | 17 | 2 | 1 | — | 1 |
| Sept. | 36 | 22 | 32 | 41 | 9 | 11 | 9 | — | — |
| Oct. | | | | | 18 | 6 | 20 | — | — |
| Nov. | 9 | 7 | 9 | 2 | 12 | 10 | 5 | — | — |
| Dec. | 7 | 4 | 3 | 9 | 15 | 1 | 13 | — | 1 |
| Jan. | 21 | 12 | 12 | 17 | 15 | 7 | 6 | — | — |
| Feb. | 11 | 6 | 4 | 13 | 12 | 9 | 16 | — | 1 |
| Mar. | 13 | 7 | 7 | 9 | | | | | |
| Apr. | 13 | 18 | 19 | 9 | 12 | 12 | 5 | 1 | — |
| May | 18 | 4 | 16 | 19 | 12 | 4 | 7 | — | 4 |
| Total for year | 174 | 110 | 123 | 146 | 151 | 82 | 103 | 1 | 7 |
| Net increase for year | 64 | — | -23 | — | 69 | — | 95 | — | — |

This survey is based on the monthly lists issued by the Department and printed in "A.R." Full call signs issued in replacement of cancelled full call signs have been omitted from the number of new calls and from the number of cancelled calls. Full call signs issued in replacement of cancelled Z calls have been included among the new full call signs and are listed separately from other cancellations of Z calls.
 These figures do not lend themselves to the formation of any definite conclusions, but in themselves form a basis for thought.

operations, in International harmony and the advancement of Amateur Radio world-wide for the good of all peoples."
 I would like, as President of the International Amateur Radio Union, to add my own deep feeling of appreciation for the fine co-operative attitude and spirit of friendliness so prevalent throughout the I.A.R.U. Your headquarters staff joins me in wishing prosperity and happiness to all.
 With cordial 73,
 Sincerely yours,
 (Signed) G. L. DOSLAND, President.

FEDERAL QSL BUREAU

RAY JONES, VK3RJ, MANAGER

The L.A.B.R.E.—the national society for Brazil—announce the addition of Navassa Island (KC4) to the Worked All America (W.A.A.) award countries list. Credit on this country will be given when QSLs confirm contacts after November 15, 1955; that is post-war.
 The Hon. Secretary of the South African Radio League desires it to be known that the call sign ZS6VA is being pirated, probably by someone situate in the Pacific area. The holder has not been active for some time, but is receiving many cards from stations in ZL, VK, XH6 and W. 7 Mc. appears to be the stamping ground of the fictitious station.

Andrew Boa, who has held many call signs over a long period as an Amateur (including ZD8B, Ascension Island), is now with Cable and Wireless at Fiji. He hopes to be active as a VR2 shortly, as does Alan Winsbury, ex-VQ4CD, who, too, is with C. and W. at Suva.
 K6DM, Clyde Anderson, of San Mateo, Cal., U.S.A., is burning for a QSL from Chas. VK1AC and Ray VK9RH. Clyde, who is a keen DXer on 3.5 Mc., seeks VK contacts on that band.

Bill Fouhy, ZL2LB, my counterpart in N.Z., advises under date of 15th June, that he is having a spot of bother with the postal authorities regarding rates of postage on QSLs. That's an old one, Bill, and we hope you overcome the problem satisfactorily. Promises to make me welcome during my trip to ZL.

Writer will be absent on this trip to ZL from early September to late October. My good lady won her point (they always do) and will accompany me. Itinerary takes in Auckland, Rotorua, Wairakei, Chateau, Egmont area, Wellington, Nelson, Greymouth, Hokitika area, Christchurch and Wellington. Whenever possible writer will attend N.Z.A.R.T. branch meetings and will be the guest of Dan ZL2AB and Jack ZL3CC for a couple of days. Unless DX looks up with a rush, my absence will not make much difference as the total number of QSLs received at the Bureau during July was less than 900!

of the Board, held in Hartford, Conn., on 13th May, 1955:

"Whereas, the Radio Amateurs of the United States, its possessions, and Canada, are aware of the co-operative actions taken by I.A.R.U. Societies and their memberships in many International competitions, and

"Whereas, these same I.A.R.U. Societies have contributed to the advancement of peaceful International relations by the exchange of Amateur Radio communications between themselves, the United States, its possessions and Canada,

Be it resolved, that the Board of Directors and the staff of the American Radio Relay League, extending their hands in friendly greeting to all I.A.R.U. Societies, demonstrate their appreciation and faith, created by such

LETTER FROM PRESIDENT A.R.R.L.
 Federal Executive has received the following letter from the President of the American Radio Relay League, Mr. G. L. Dosland, W0TSEN. Executive appreciates the sentiments expressed therein and on behalf of the Amateurs of Australia has responded suitably.

West Hartford 7, Conn., U.S.A.

Wireless Institute of Australia, Box 2611W, G.P.O., Melbourne, Victoria, Australia, Gentlemen,

It gives me a great deal of personal satisfaction, in my capacity as President of the American Radio Relay League, to forward the following action of its Board of Directors, unanimously adopted at the Annual Meeting

"ACOS" CRYSTAL MICROPHONES and MICROPHONE INSERTS

A Complete Range For Every Purpose

DESK OR HAND MICROPHONE

MIC 36



£6/18/6

Housed in attractive plastic case, this Microphone is ideal for home recording and public address, etc. Response unexcelled for its size and price. The performance is not affected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s. Recommended load resistance not less than 1 megohm dependent on low frequency response. Can be supplied complete with switch and floor stand adaptor as required at a small extra cost.

HIGH QUALITY MICROPHONE

Designed to meet even the most exacting requirements, this Microphone incorporates the world famous floating crystal sound cell construction. Its special characteristics are that its fine performance is not affected by vibration or shock. The fidelity is not impaired by low frequency wind noise.

SPECIFICATION

Recommended load resistance—not less than 1 megohm.
Output level —65 db ref. 1 volt/dyne/cm².
Frequency response—substantially flat from 30 c.p.s. to 10,000 c.p.s.
Directivity—non-directional.
Size—2½" spherical diameter.
Connector—Standard international 3-pin.

MIC 16



£24/19/6

GENERAL PURPOSE MICROPHONE

MIC 35



£2/15/-

substantially flat response from 50 to 5000 c.p.s.

SPECIFICATION

Output level: —55 db ref. 1 volt/dyne/cm².
Cable—approx. 4 ft. of co-axial supplied.
Weight—6 ozs. unpacked, 7 ozs. packed.
Dimensions—microphone only 2¼" x 2¼" x ¾"

The MIC 35, undoubtedly the best value ever offered, is ideal for amateur transmitters, public address, etc. Housed in an attractive die-cast case, it features a high sensitivity and substantially flat characteristics. Provided with a built-in shunt resistance of 2 megohms, it will, when connected to the grid of the input valve, give a

TABLE AND STAND MICROPHONE

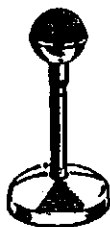
This omni-directional Microphone is robust in construction, with a pleasing appearance. Vibration, shock or low frequency wind noise will not affect the performance. The low frequency cut-off is dependent on the load resistance. The cut-off is given by the quotation, $F = 80 \div R$, where $F =$ c.p.s., $R =$ megohms. An adaptor (floor mounting) is available at low extra cost.

SPECIFICATION

Output level = —50 db ref. 1 volt/dyne/cm².
Output impedance—equivalent to approximately 0.002 uF. (0.8 megohm at 100 cycles).
Frequency response—substantially flat from 40 to 6000 c.p.s.

Recommended load resistance—not less than 1 megohm, dependent on low frequency response.

MIC 22



£9/18/6

LAPEL MICROPHONE

MIC 28



£5/19/6

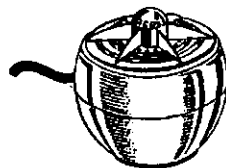
Designed to give freedom of movement, this Microphone is small and non-directional. Housed in a soft moulded rubber case, which gives protection against shock, it is provided with a pin at the rear of the case for pinning to the lapel.

SPECIFICATION

Output level—approx. —55 db ref. 1 volt/dyne/cm².
Recommended load resistance—5 megohms.
Frequency response—level throughout the whole of the audible spectrum.
Capacity—0.0015 uF. at 1000 c.p.s.
Impedance—100,000 ohms at 1000 c.p.s.
Cord—6 ft. shielded cable.
Size—1-9/16" wide x 2¼" long x ¾" thick.

HAND OR DESK MICROPHONE

MIC 33



£6/18/6

This Microphone has been designed for the high quality public address and home recording field. High sensitivity and flat characteristics are obtained by a specially designed acoustic filter. Housed in an attractive plastic case with an unexcelled response for its size and price. Unaffected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s.

MICROPHONE INSERTS



(MIC 32 illustrated)

CRYSTAL MICROPHONE INSERTS

These inserts are available in varying sizes ranging from as small as 15/16" square to 1-13/16" round, with various thicknesses from 7/32" to 9/16". Suitable for every purpose such as hearing aids, public address, tape recording, amateur broadcasting, etc., they have responses from 2250 c.p.s. to 3500 c.p.s. at 5 db to 30 db. Insert can be supplied with or without 10 meg. resistor as required.

MIC 32 insert, £2/15/6; all others, £1/19/6.

MICROPHONE INSERTS



(MIC 23 illustrated)

AMPLION (A'SIA) PTY. LTD.

EXCLUSIVE AGENTS: SYDNEY, AUSTRALIA

Despite the return to civilisation of Bill Storer, VK1EG, and his marriage, he has left his entire VK1 log with Roy Baxter, VK4FJ, who is continuing to handle all QSLs.

Felix FK8AC, in forwarding a few QSLs from Adrien FW8AB, of Wallis Island, states that they expect to have a new FK8 Amateur shortly, under the call sign FK8AR/MM, operating on board the "Quebec" which is running regularly between Noumea and Newcastle. FK8AH and FK8AL are assisting him to build his rig.

Chas Hawker, VK31B, ex-VK1AC, presently at Swan Hill, states he does not expect to be in that location much longer and desires all QSLs re his VK1AC operation to go to his home address of Box 35, Dimboola, Vic. Chas. is not active from Swan Hill as he is too busy catching up with his backlog of QSLs from the Macquarie Island activity. Due to his intense activity down there, his backlog is a huge one, but Chas. is attacking the job sensibly, doing a little each day and of course replying first to cards received.

FEDERAL AWARDS

W.A.V.K.C.A. AWARD

Member Societies of the I.A.R.U. have been circualrised with the rules appertaining to this Award. In addition, copies of the rules have been sent to the publishers of "CQ" and "Wireless World."

No applications for the Award were received during the month of July.

DX C.C. AWARD

Applications. It is necessary to point out to members applying for this Award or for additional credits to their present Award, that the following points are observed when certifying and giving credit for QSL cards:—

- (a) The QSL card must show the call sign of the confirming station.
- (b) The QSL card must show the call sign of the confirmee.
- (c) The location (not necessarily the postal address) must be shown.
- (d) A statement to the effect that a QSO is being confirmed must be made.
- (e) The card must show the date of the QSO.
- (f) The emission designation must be shown (usually the signal report suffices).
- (g) The card must bear the initials, first name or sive of the person who made out the card.

Unfortunately many overseas stations do not always fill out these details and I have recently rejected cards because of the lack of some of these essential details. A card may be perfectly genuine and I will always give the confirmee the benefit of the doubt, but it is not possible to certify to the genuineness unless the bulk of this data is given.

Applicants for Awards should note that any alteration or disfigurement of a card, not made by the person who made out the card originally, will cause the card to be rejected.

Additional Countries and Amendments

Since the publication of the last Official List of Countries, the following amendments are effective:—

French India (FN8). Effective 1/11/54 delete FN8, as at that date it became part of India proper. All confirmations prior to 1/11/54 will be credited for DX C.C., but confirmations after that date will be credited to India.

Wallis and Futana Islands (FW8). This is a dependency of New Caledonia, and DX C.C. credits starting 1/8/55 will be given for creditable confirmations dated on or after 15/11/45.

Tanna Tuva. Deleted as from June, 1955.

French Indo China. This now includes the States of Cambodia, Laos and Viet Nam. Due to the current political instability prevailing in this area, credits for confirmations of contacts with Cambodia (F18), Laos (XW8), and Viet Nam (3W8) will not be accepted. Credits for F18 (Indo China) contacts are still acceptable, however, for contacts prior to the evacuation of the French Colonial Government.

Fleeters Ice Island. No credits will be given at this juncture for contacts with the above which is an American Military Base. It is possible, however, that at some date in the future, this base may be declared to be a new country. Confirmations should therefore be withheld until this declaration is made.

—Gordon Weynton, VK3XU, Manager.

NEW SOUTH WALES

The July meeting of the N.S.W. Division was held at Science House, Gloucester St., on 27th July; a large attendance being recorded. The visitors were welcomed by the President, Jim Corbin, 2YC, and included Ray Friddle, 2WF,

SOUTH WESTERN ZONE W.I.A. VK2 CONVENTION

to be held at
ALBURY

on

1st and 2nd OCTOBER

Programme:

Saturday, 1st October—

Tour of Hume Weir.
Catered Dinner, Saturday night.
Films, Pick-a-Box, and other competitions.

Sunday, 2nd October—

Transmitter Hunts on 144 and 3.5 Mc. bands.
Auction of Disposals gear.
One Hour Scramble.
Blindfold Transmitter Hunt on 144 Mc. band.

Further information can be obtained from VK2RS at Albury, or VK2AJ0 at Coolamon.

2ABG, 2AIR (ex-9YY), 2DY and his wife, 2UC, 2DI, and the parents of VK1ZM, who is now doing a tour of duty at Macquarie Island.

In the absence of the Secretary, Harry 2ACH, Bill 2YB took the stand and carried out Harry's duties for the evening. The small amount of business being dispensed with, the President handed the meeting over to the lecturer for the evening, Bill Storer, ex-VK1EG, who gave a most interesting lecture on life in the Antarctic. It will be remembered that Bill was one of the first party to establish a base at Mawson and we left the meeting with no doubts as to the life led by members of these expeditions and the hazards encountered. The lecture was illustrated by three excellent films which were enthusiastically received by the large audience and were followed by the usual host of questions on life in these regions. All voted this effort one of the best of the year, and finally the meeting was closed to allow members and their ladies present to meet one another.

SYDNEY AREA

We must apologise for the complete lack of notes in the last issue of the magazine. A chapter of accidents resulted from the inroads of a dose of the current 'flu in my case, the late arrival of notes from country areas, and the tardiness of the appropriate Department in failing to convey an Air Mail letter with the slacrity one expects. So fellows, please get those notes in and I will do my bit in getting them to the fellows who do the final job, it will help us all.

There is much activity at present in the local area in readiness for the R.D. Contest, many stations are heard again which have been more or less silent for some months. This Contest should be one of the biggest held and we hope that the results will show a great improvement.

2FA, 2ACD, 2AUR and others are looking for the odd European contact these nights. George is keen to get his new tx all fixed up and coupled to the new beam. 2APT is doing well with the W stations, but finds that they are fading now at night; gets cold in the shack. What was it Dottle said JACK, when you tried to get the h.w.b.? Tom 2ATP is another of those wrong way Corrigan merchants, now has found it much better to point the bone (sorry beam) in the right direction. Never mind Tom, we know a chap who had a beam with a beaut. front-to-back ratio. Barry 2LK is now a poppa and our congratulations go out to him and his good lady. Fred 2ID and Rex 2VG have returned from Northern parts, did some nice fishing, lived on oysters and other things and finally returned via the New England Highway in what appears to be good time for the distance covered. Rex, who was the apparition with the scarf round the curly head?

2QP is very diligently playing with a new beam, and it really works fine, it is a folded version of the ZL Special; what about an article on this Laurie? 2AEK gets into the shack occasionally and works his share of what is going. 2AOU, 2FA, 2GE and others are busily getting organised with the b.c.i. and t.v.i. organisation; more will be heard of their efforts later. Any suggestions will be gratefully received by this committee. Alex 2FM is in hospital for a spell with a gammy leg; hope it soon improves Alex. A new beam has arisen—2AZN now has a W8K which looks very promising indeed, is also on holidays which helps. 2HK is heard occasionally. 2AAB is re-building and will be on for the Contest by all accounts, also busy with the Library.

2ASW rarely heard now, and this applies to 2PY (ex-2AXZ)—both are busy with the class. Any of you fellows who are interested in Radio and wish to get your ticket, write to the Class Secretary, Box 1734, G.P.O., Sydney. The class is very successful and you have the best of instructors so the rest will be up to you. Give it a go.

More and more subscriptions are awaited for the N.S.W. Amateur Co-operative to enable the committee to do the things outlined so many times. Please chaps send in your money immediately to C. Quin, Hon. Sec., Box 1734, G.P.O., Sydney. We can, if you will help us, build for the future and make Amateur Radio bigger and better.

2AHW now operating from Bingley, fine signal on 14 Mc. despite the distance. 2AKV still plugging along; G2BLT tells me he has been working Laurie consistently in the forenoon. 2AIR is getting organised with 6146, 2ACI sits and listens and then swoops; nice to hear you, Hec. Andy 2AUM is very consistent, nice signal but will improve with the inception of the folded dipole. Bruce 2BG is busy with the concrete, has a beaut. location, as has Alf 2CE up at Teioopa; both are active these days. 2SV and group are holidaying in colder parts, down at the Federal Capital. Alf 2MJ now installed in new location at East Bankstown; fine signal and we can hear him at this location now. Wal 2SA still knocking the W stations over with the Lazy H. Jock 2ATW doing well with the beam; heard testing on the old man's band recently. 2NG still around.

Shades of Old England. On a recent weekend, Jim 2HK lent Bill 2AJL his cross bow. With the assistance of Vic 2AWN, our heroes(?) managed to fire an arrow tralling a string over a five-foot fork in a 40 ft. tree. Only four shots were needed to accomplish this feat of arms, despite a blustering westerly cross wind. Now we know how Jim gets his antennae over the 70 ft. mark. There's nothing to it—well practically nothing, anyway.

Tom 2AFN has a tale of woe these days. He is flat out digging foundation holes into rock for his new galvanised tower.

Have you sent your R.D. log in yet? If not, do so immediately. All logs must be forwarded through the contestant's Divisional Council (for membership checking) to reach the Federal Contest Committee in Adelaide on or before 10th September, 1955. Post your logs to Box 1734, G.P.O., Sydney, now.

EASTERN SUBURBS

Ray 2AIG now has a rotary dipole on 20 mx. My guess is that after a spell of fun and games with this lone element, it won't be too long before Ray grows either one in front or one at back. Heard for the first time since his arrival in this region 4 or 5 years ago is Roy 2TH, who has been re-introducing himself on 40 mx phone. Ivan 2TN is reported to be gallivanting overseas, and is at the moment either in U.S.A. or U.K. Since 2ASE got going on 2 mx with his new tx recently, little has been heard of him on h.f. bands, but maybe Ernest burns a bit of midnight oil?

Alec 2ABU has been heard on 2 mx from his new location in this area, and was putting out an S8 signal by holding the feedline of a 40 mx antenna against the 2 mx p.a. tank. Heard on 40 mx phone after an absence of many moons was Laurie 2AJG, in QSO with the nearest of the nearby cluster—Andy 2AX. Also heard, on 20 mx phone, after a fair spell of apparent silence was Frank 2YF.

Newest station in the East is 2ZAQ. Les is putting out a good signal on 2 mx and sports a 3 over 3, cascade converter, etc. The signal strength of 2JX here on the seaboard leaves no doubt about v.h.f. propagation between the Blue Mountains and all Sydney, so far as 2 mx users are concerned. In Wentworth Falls, Peter has the usual 100w. or less rig and I doubt very much if there is any part of Sydney and suburbs where his signal cannot be heard

BRIGHT STAR RADIO

46 EASTGATE ST., OAKLEIGH, S.E.12 UM 3387

ALL FREQUENCIES IN STOCK.

ZERO DRIFT CUTS.

TOLERANCES UP TO BETTER THAN 0.005%.

BRIGHT STAR CRYSTALS may be obtained from the following Interstate firms: Messrs. A. E. Harrold, 123 Charlotte St., Brisbane; Gerard & Goodman Ltd., 192-196 Rundle St., Adelaide; A. G. Healing Ltd., 151 Pirie St., Adelaide; Atkins (W.A.) Ltd., 894 Hay St., Perth; Lawrence & Hanson Electrical Pty. Ltd., 120 Collins St., Hobart; Collins Radio, 409 Lonsdale St., Melbourne; Prices Radio, 5-6 Angel Place, Sydney.

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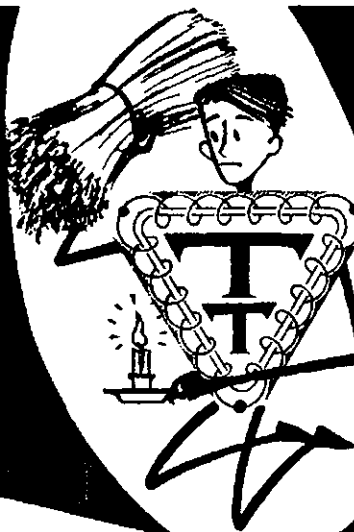
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strongly, even on an indoor dipole. Which disposes of the contention by a t.v. authority, who maintained that a t.v. transmitter at Wentworth Falls would be "too far away from Sydney." What—with 200kw. effective radiated power to boot? The 2 mx gang at least will disagree heartily with the suggestion.

SOUTH WESTERN ZONE

Main news from the zone this month is of course the preliminary meeting held at Albury 24/7/53 at the home of Don ZRS. Members present were 2BW, 2AID, 2AAF, 2ASX, Wagga; 2ZAA, 2PN, Tumut; 2PL, 2ZBJ, Assoc. John Smith, Dennis Cleathers, Griffith; 2RS, 2EU, 2JA, 2OJ, 2ANQ, 2QD, Albury; 2AJO, Coolamon; KYLs Weedon, Phillips, Dickson, and Haberecht.

At the meeting with 2AJO in the chair a very good programme of events was arranged for the Convention. Programmes will be sent out to other zones as soon as published. Two items of interest on the programme are a tour of the Hume Weir and the big catered dinner to be held on the first (Saturday) night of the Convention.

I would like to congratulate members for their attendance at the meeting as distances to be travelled to spend only a few hours in Albury ran into over 200 miles for some fellows. I must mention the hospitality extended to all present by Don and Glenda in giving us afternoon tea and also dinner. Thanks Don and Glenda from all.

Charlie 2ASX at Wagga informs us that he is in the process of organising a radio club at R.A.A.F. Station at Forest Hill; this has been approved by Group Captain Millett; the name of the club will be the R.S.T.T. Radio Club. The club has already drawn up a constitution, one clause being that any visitors interested in Radio or fellow Amateurs passing through Wagga have an open invitation to visit the club rooms as guests. Good work Charlie, who, incidentally, holds the rank of Flight-Lieut., and is an ex-Royal Navy Lieut.

Don't forget to keep in mind the South Western Zone Convention at Albury on 1st and 2nd October, 1953. Programmes will be sent shortly, so when you receive them, book your accommodation.

NORTH COAST AND TABLELANDS

Little news for the zone this month, the highlight of the zone was the occasion of the Festival of the Pines at Port Macquarie. VK2WI was in operation under the command of Peter 2PA and Ted 2AVG. A very nice set-up was arranged in a section of the Arts and Crafts Exhibition. The tx's were a Collins Autotune and an ATR2B, complete with an AMR300. Many contacts were made and many people took a great interest in the exhibition of Amateur Radio organised by Peter and Ted.

Crief 2XO is on holidays again, touring the West of N.S.W. and South Queensland. Noel 2AHH is busily building a sun room on the house. Olive tells me it will house the gear soon; put 2 mx gear in there Noel. 2DK is back on 80 mx nice to hear you Chick. Allan 2FH is staying at Port Macquarie for a fortnight this month. Following the circulars reminding you of the contest in this zone, remember to send in those logs by the due date.

VICTORIA

80 METRE TRANSMITTER HUNT

Participants had very pleasant sunny weather for the hunt. Len 3LN hid the tx under bushes down the bank of the Yarra River behind the Heyington Railway Station. This proved to be a most inaccessible spot as it was bounded on one side by the river and Gardner's Creek, and on the other side by the railway line, the only access being by a small street under a railway viaduct about half a mile further on and then along a narrow track. All other streets in the vicinity were dead ends and this certainly hid the participants guessing. Although the tx was hidden within four miles of the starting point, it took the winner, Eric 3ADU, almost an hour to locate it. He was followed soon after by Alf 3IE in second place and Laurie 3ALY in third place.

Len, with the help of his boat of course, had trailed the aerial back and forth across the river and creek and he certainly got a lot of amusement in watching from his hiding place as the participants searched for the tx, either on the wrong side of the river or the wrong side of the railway line. Thirty-two attended the hunt and they had afternoon tea together and a chat on the picturesque banks of the river to finish off a pleasant afternoon.

The next hunt will be held on Sunday, 18th September, when the winner, Eric 3ADU, will hide the tx. Make a note of this date and be sure to come along, remember his last effort with the pram in the Fitzroy Gardens.

CENTRAL WESTERN ZONE

This month we must welcome two intended members to the W.I.A. They are Keith Semmler, of Murtoa, as a full member, and Howard Wills, of Horsham, as an associate member. Both these chaps are now waiting to be admitted, so we wish you the best of luck chaps.

Congratulations to Merv SAFO and Nora on the arrival of a son. Guess Merv will have to let Amateur Radio take a back seat for a while. Conditions have been very spasmodic in these parts of late so have not been spending much time on the air, however will have to get busy from now on as Convention time is coming around again.

EASTERN ZONE

Conditions on 3650 Kc. have not been consistently good for our Sunday night hook-ups. Main news is the 2 mx bug biting many of the boys. 2AAV, 3AJK, 3BB, 3SS are planning. 3QZ, 3TO and 3TY are on the air. 3SS-3DY have a windmill tower ready to go up when two more concrete blocks are set in the ground. Hand blisters have temporarily held up this part. Gilbert, 3AYM is a new Amateur near Sale, so watch for him on 7 Mc. Rex 3VL is working DX on 20 mx. 2 mx sigs are regularly coming from 3DI, 3TH, 3TO, 3QZ, Stan Baxter and Ron Williams. The long lost 3WE showed up on C.D.E.N. on Sunday, 7th August. Is quite OK, but says anyone working nights in a shack at 20°F. would be nuts!

The radio club now carrying the title of East Gippsland Radio Society is still going strong and is meeting next at 3AHH's place on 19th August. Last meeting was at Alan Jacka's where a good programme of educational films was screened.

NORTH EASTERN ZONE

At the time of writing it has not been possible for our 2 mx fans, Alan 3UI and Syd 3CI, to contact Vic 3ABX. Earle Scoones has not got that BC348 going yet. Frank 3ZU has apparently had some experience in the elaborate and careful work required to line up those rx's properly. Peter 3APF is seen about in Shepparton, as is Brian 3ASF, and Ted 3AOB operates on 40 mx, but there is nothing on the activities of 3AGG. Les 3ALE is building double conversion equipment for his BC348. Murray 3HZ appears, quietly, on the scene from time to time, but Alex 3AT has not been seen or heard just lately.

Jim 3JK is now back on his feet, but has to be careful. Jack 3AKC is battling with his noise problem, and Howard 3YV and Bruce 3QC are going through their equipment. Ron 3AQQ is now on the air. Henry 3HP is heard from time to time, but the current cold weather must be cramping the style of Des 3BP. Ken 3KR is on to his share of 20 mx DX. Hugh 3AHP is bowling along quietly. Jack 3PF was able to get on to a recent hook-up and Bill Carlisle is now 3IP; congrats. OM. Keith Cakebread has passed his regulations and theory and will take the morse shortly.

Col SWQ is quite active in Amateur Radio and Vern 3AXW will be interested to hear of Jim Muntz, of Nathalia, as well as getting one Norm McDougall into the Institute fold as an associate member. John Goodall, of Numurkah, is to be congratulated on getting his L.A.O.C.P. and the call sign 3ZBG, that should encourage both Clarry in Cobram and Les Cusack in Numurkah to try their luck on "tickets".

A recent hook-up was very interesting when conditions on 3700 Kc. at 1330 hours E.S.T. allowed Doug, now 7IJ at Cambridge in Tasmania, to take part in the proceedings.

SOUTH WESTERN ZONE

Activity this month has been fairly quiet as I think most of the chaps are still playing with the equipment that they got out of the last pisopapal and from what can be ascertained most of the South Western Zone boys got their share by the way of a change in luck. 3ARJ was lucky enough to score a 3BP1 scope unit and he will be busy for the next few weeks getting it to work. Norm 3EQ was lucky as he scored a power supply, but there was a transformer missing out of same, so that has held the progress up a bit. Bill Wines scored an AR8 so will be very busy on 20 and 40 as well as 80 mx now.

All the boys at this end of the zone are very lucky in having such a good brother Amateur as John 3AGD who took his car to town to collect our equipment. Kevin 3AKR was with John. Thanks chaps for this effort. Cec 3YW is still giving the s.s.b. a fair sort of a doing. I still haven't heard anything from Ballarat boys. There still does not seem to be enough interest taken in the usual Sunday morning hook-ups, so come on chaps, rattle your bones. 3ANC was heard on the band for the first time recently. Harry 3XI still hunts up the 20 mx contacts.

BALLARAT AND DISTRICT RADIO SOCIETY

The monthly meeting was held on 3/8/53 at the Y.M.C.A. The attendance was the normal one to be expected without any added attractions like strip tease in "binaural." Having dealt with the ordinary business, this small group of die-hards then consoled themselves in the chores of more construction on the club rig. Most of the wiring and adjustments will be done by some of the keener E.W.I's., so any signal appearing on 3640 Kc. should be treated with a certain amount of caution and respect.

Any inference in last month's notes about 3AMH-3HW having b.c.i. is gracefully withdrawn, seems as though I thought you were still at the other QTH Bill. I trust that the v.h.f. editor will not hold the gun at my head for acquiring his news, but the situation as aforementioned in this town is desperate—nothing ever happens. As promised last month, Ken Hare has his call sign, 3ZBC. It looks like I'll have to write v.h.f. news from now on, there being six active stations on 2 mx and one station on the low frequencies—20 mx.

Could someone kindly suggest how to reclaim lost members. I could suggest a strip tease, five night or a good old "niner," but your constitution specifically states, and I quote, "the qualifications for membership shall be a bona fide interest in Radio Communications or Electronics." What about it chaps?

GEELONG AMATEUR RADIO CLUB

The improving conditions on the 20 mx band have led to some good contacts by the boys in this zone. 3NC, a smoke signal DXer using 5 watts, has clocked some fine results; also 3JA with his new vee beams. 3AGD, 3AKR and 3HG are continuing their experimental work on 2 mx and are obtaining excellent results when the band is favourable. 3AGV and 3AGE are preparing the red carpet for a VET who is taking up residence in Colac. Gordon 3AGV is back at toll after a long furlough and I think misses the "rig" and the morning sleep in.

Further East, the Geelong boys are very active. Alf 3AJF is the new President for the Geelong Radio Club, Bob 3IC was unanimously re-elected Secretary, and 3ZBR is the vigorous Treasurer. A most interesting lecture on Cathode Ray Oscilloscopes was given by 3AJF. Alf was good enough to dismantle the c.r.o. he made and discuss design, etc., at great length. On 11th August, Ladies' Night, the OMs treated the XYLs to a film night of past activities in the Amateur field. The Ladies loved to see themselves on the screen.

Max Stock has announced his engagement and we hope he will be able to concentrate on the A.O.C.P. The boys in this zone were pleased with the ballot for disposals equipment and of course some were bound to miss out, however they will be successful next time.

QUEENSLAND TOWNSVILLE

A meeting of the Townsville Radio Club was held at the residence of 4EX on 30th June and the roll up was not so good as expected. The Chairman welcomed the prospective associate members. After apologies tendered for absent members and usual business soon run through, the members got down to the burning question of running classes for prospective Amateurs. Discussion became very lively at times as to what form the lectures would cover from a comprehensive course on radio or just sufficient to coach the willing chaps who already had a knowledge and were studying at home. A notice of motion to alter the rules, to keep the voting power in the hands of the licensed members, was put forward also. The meeting was adjourned to enable the boys to visit D.C.A. and look over the teletype under the eagle eye of the Secretary, 4WH.

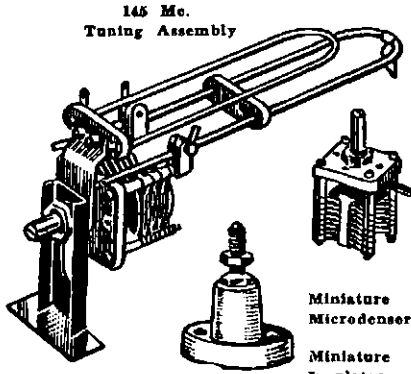
Another meeting was held at 4EX on 28th July when the notice of motion was eventually carried. After another discussion on the proposed classes, the Secretary was empowered to write to VK2WI re information on the correspondence course for A.O.C.P. It was decided to put an advertisement in the local paper that classes are being contemplated and asking for those interested to contact the Secretary.

A very interesting lecture on Rhombic Antenna was given by Mr. Chapman, of VIT, who provided diagrams, etc. He related his experiences with experiments conducted by the powers that be in VK2 and also mentioned the paper on Rhombic Antennae which was read recently in England. Phil has promised to elaborate further on this lecture, and it will be one that this scribe will not miss and can vouch that next time there will be a larger attendance.

Very few of the locals are on the air. Rex 4LR is trying to improve the modulation by installation a speech clipper and so far not as successful as he would wish. Ted 4EJ quite

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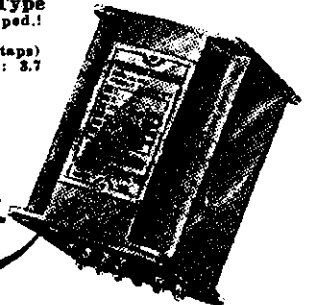
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thrilled with his new shortened beam and trying to get some almost impossible front to back ratio. Alan 4BE often on giving Rex modulation checks. Ed 4WH still boasting how his ZL Special performs. Joe 4JH heard recently first time for many months. No others being heard on the band.—4RW.

ROCKHAMPTON

At the July meeting of the branch, Len 4DI was elected Vice-President to occupy the vacancy caused by the departure of John, ex-4FU. The meeting also presented Bill 4WD with a small moment on the eve of his departure to take up permanent residence in Brisbane.

Charlie 4MT demonstrated his mobile equipment and after the meeting made a circuit of the city working back to the gang assembled in the shack of 4NG. The little rig is behaving very well on Interstate contacts and Charlie is looking for more DX.

Mr. E. S. Brigg, of the Rockhampton Technical College teaching staff, has received word that he was successful in passing the last A.O.C.P. examination. He is the last of six successful candidates coached by Joe 4CL, who is at present nearing the end of a major construction job and expects to return to the 40 and 20 mx bands on phone and c.w. in the near future. A recent visitor to Rockhampton was Owen 4OV, returning to his home in Mt. Isa from a holiday in the south.—4NG.

MARYBOROUGH

4AI and 4BG went on a DX-pedition to some scrub country and returned with a load of bamboo poles. When dried out, these will catch, not fish, but DX, as they will support 4AI's quad beam. 4CB returned from a trip to Brisbane with a pleased look and a pair of \$1466. Arch has been on 2 mx with his beam (8 el.) pointed at Brisbane; no results yet. Graham Pooley is getting an AT5 perking in anticipation of having a call sign before long. During construction of his new 3 el. 14 Mc. beam, 4BG used up a week of his holidays, fell through a fibro garage roof, and climbed 30 feet up a tree to lop branches off. That beam had better be good Ron.

GYMPIE

4LN is on 80 mx early evenings. Barry is re-building a TA12 tx and he and 4XR are getting some simple (they hope) gear ready for 288 Mc. 4CR surprised the locals by coming up on 40 mx after years of silence. Let's hear more of you Col!

SOUTH AUSTRALIA

The monthly general meeting of the VK5 Division (the Division with—with—with—oh shucks!—what's the use? They won't print it) was held as usual at the clubrooms to a more than usual capacity roll-up of members. The reason was not hard to find because the guest speaker for the night was Mr. Lee, from Philips Electrical Industries, and his subject Television. In view of the large amount of equipment to be set up in the club room for the lecture, it was decided to depart from the usual practice and hold the business side of the meeting first, finishing up with the lecture and the demonstration. Mr. Lee had brought along what he called an industrial set-up, a camera, a tx complete with monitoring facilities, and an outside television rx's. Of course he had several pieces of equipment on display and also a bunch of high power lights, plus a large scale drawing of a simple television rx. However, don't think that Mr. Lee kept either his theoretical talk or his practical demonstration on a level that was beyond any of the members present. In fact I can say without fear of contradiction that at no time did it get to the stage where the audience lost interest.

The practical side naturally went over with a bang because to a great number present it was the first time that they had seen a complete set-up for television, and believe me they ate it up. The practical demonstration brought to an end what ranks as one of the most interesting and instructive meeting nights ever to be held in VK5, and as John 5KX said in his vote of thanks at the conclusion of the lecture, our thanks are due to Mr. Lee, of Philips Electrical Industries, for making the night possible.

Noticed Roy 5AC at the meeting enjoying the lecture. Anybody with a call sign like that is well in the veteran class in VK5. I have heard Joe 5JO calling you on 40 mx several times OM, but so far have not heard your Type 3 Mk. II. Arch 5XK was missing from the meeting, but a little birdie told me that he was probably at home hard at work on a certain new rx which was down and out for the count after an unexpected fall. How is it going OM?

I received a letter this week from St. Andrew's Rectory at Longreach and for quite a

time I was at a loss to think just who it could be from. However, I eventually woke up that it was from no other than the multi-millionaire from VK5 who has been holidaying in VK4. He appears to be having a very good time although bemoaning the non-existence of an Amateur in Longreach. This seems hard to believe, but Jim Paris said that he has looked long and far for a chance to talk to some of the boys in VK5, but all to no avail.

Another letter to hand this month from Mac (5CE) all the way from Whyalla. He kicks off the letter by having a crack at the b.b.s.s. and dares to insinuate that it is almost inaudible at night time up there. I treat that with ignore and pass on to the fact that he is only active on 20 mx these days with low power, only because he gets a kick out of the said low power. He has just received his W.A.P. award and says that it is a credit to the ZL boys. Incidentally, he is the sixth VK on the number 14 award. He closes the letter by telling me that he is an ex-VK3, which naturally causes me to have an attack of the vapours.

Nobby 5GY has taken successfully to rearing inverted 7183s and is more than satisfied with the results. Unfortunately this means that he has no time for Amateur Radio at the moment. 3APK is active on 40 and 80 mx using the Type A Mk. III that he purchased from Mac 5CE. He is confined to hospital at the moment and finds that the phone contacts that he has, mean a big thing for him. Keep an ear for him fellows. There are two prospective Amateurs in Whyalla, one is an ex-OE, and if all is to be believed, the time is not far distant when they will be adding to the local QRM on the more popular bands. Here's hoping anyway.

WOOMERA RADIO CLUB

As this appears in print the above club will have passed its third birthday and set up a good record from all points of view. They have recently had a number of photographs taken of the club rooms, etc., and the proofs look more than promising. Anyway, even if I don't get any photographs, I will join with everybody in congratulating 5WC on its third birthday.

Keith and Bernie sat for their examination last month and both seem fairly confident about their effort. Here's hoping that there will be two more of the Amateur fraternity at Woomera shortly; and so say all of us. Sid is coming along nicely and should be ready to sit for the ticket before too many sunspots have come and gone, speaking metafor—metafer—metaph-ph—speaking in a manner of speaking, you know what I mean Sid. Roy 5FF is busily engaged on his well known "bomb" and hopes to be mobile by Xmas. Ron 5FY is another one who has bought himself an old vehicle, which in comparison to the bomb of Ray's, falls into the "crate" class. However, if it is possible to get a mobile rig into it, then 5FY and 5FF will be heard in contact. My spies tell me that 5WC is very particular on the QSL angle and always QSL 100 per, and this includes the s.w.l. Naturally they like to receive a card as well, and if this causes your conscience to rev up a trifle then I need not say any more. If it has not had that effect on you, then you are in the clear and are a good boy. Peace go with you. Ted 5VE only puts in an occasional appearance on the air.

The club is slowly getting active on 144 Mc., but has not really warmed up as yet. With rumours of 144 Mc. activity around Port Pirie and Port Augusta soon, they are almost in a direct line with Woomera, it looks quite promising. Ron 5AP at Port Augusta is tinkering around on this frequency and might be the first one to give the 5WC rig a tryout.

You should know by now that the VK5 Division carries a Type 3 Mk. II. complete and ready to go, for the use of any member who is confined to his sick bed or who may be in hospital and would like to pass away the long hours on the air instead of possibly losing his morale from the usual boredom associated with convalescence. Alan 5VO is using the said portable tx and rx and he would be pleased to have a chat with anybody who happens to be on the air during the mornings or afternoons. If he runs true to his usual form, he will be on c.w. more than phone. Glad to know that you are on the road to good health once again OM.

Gordon 5XU was the guest speaker at the Rotary Club meeting at Gawler this month and chose for his subject, "The Radio Amateur and his place in the community." Gordon took along the two trophies that are at present in VK5 to illustrate his theme, and if all is to be believed he did a worthy job for our grand old hobby. This is an angle that could be exploited more than it is, in fact I recommend it to all Divisions for their consideration.

Council and the VK5 Division reluctantly accepted the resignation of Reg 5RR from the position of Divisional Secretary this month. Reg finds that his duties in the professional field during the week do not allow him much time

for his hobby, let alone for an executive position as well. I could tell you just how much work and time that Reg has put into his job of Secretary; I could tell you just how efficient and conscientious he has been, but it would only be gilding the lily. Anybody who has had any dealings with him in any way, amateur or professional, will realise just how big is the loss of the Division. Fortunately he has not resigned from the Council nor from the position of Secretary of the Federal Contest Committee, so possibly we can look on the fact that our loss could have been greater. You've done a good job Reg, and nobody knows it better than Council.

The Brompton Methodist Mission Youth Radio Club is going great guns and several of the Divisional members have paid a visit to the club rooms for the purpose of giving talks, inspections, etc., etc., and it looks like that the club is doing a worth while service for the youth of the district. Joe 5JO and Howard 5XA should feel proud of their "baby". I also recommend this sort of thing to other Divisions as a means of putting back into Amateur Radio a little of what they have received from it over the years.

SOUTH EAST AREAS

The monthly meeting of the S.E. boys was held as usual this month and a most enjoyable evening was spent by all who attended. The highlight of the night was a tape recording of the recent lecture delivered at a general meeting night of the VK5 Division by the worthy President, Gordon 5XU. Among those present were 5CJ, 5FW, 5FD, 5KU, 5MS, 5CH making a brief appearance from his local erg factory), and associate member, Roy Bishop. Judging by the reaction of all present to these tape lectures, they are serving a good purpose for the country members and fully justify the trouble that the VK5 Council has taken to ensure this service.

5KU active both on 40 and 20 mx and believe that Erg has been getting among the new countries on c.w.; nice work OM. 5FD building a new shack and hopes to have it occupied in time for the coming R.D. Contest. 5TW still keeping schedules on the unmentionable band with Leo 5ZAG and is practicing short sharp bursts on all bands in training for the R.D. Contest. Best of luck Tom. 5CH was a visitor to the city again this month and I had the pleasure of meeting his XYL, a charming and gracious XYL if I might say so. (What's that about the Blarney Stone? I resent that.) Anyway, Claude has not been on the air very much this month, but the enthusiasm is still there. And how! 5CJ is another one who has somewhat deserted the air for the lure of the warm and cosy atmosphere of the living room, this month.

Talking about schedules with Leo 5ZAG, I believe he will have to look to his reputation as the teller of yarns. I understand that John 5FD is giving him some hurry up in that direction. 5MS has been keeping his usual schedules on 40 and 20 mx with some very good conditions being experienced on both bands. Stuart raised two more new countries this month but the going has now become tough, especially on week-ends. He has been getting the rig ready for the R.D. Contest. Hope that he and Erg can repeat their effort of last year, it will make it a lot easier for VK5 to retain the trophy. I hope—I hope. Thanks for the notes—Stuart and Co and if you read the last paragraph this month you will realise why I am thanking you both. I couldn't have done the job without you. Give Jack 5JD all the help that you can, will you fellows? Believe me, it goes a long way toward making it hard or easy.

Now I come to what is probably the most serious paragraph that I have ever typed for the magazine. For once in my life I am going to step out of my self-imposed guise of the village idiot, and say a few serious things, on this, my swan song as the VK5 scribe. At long last my bread and butter has caught up with me and I find that I cannot continue to devote to my hobby as much time as I have of yore. Put in simple words, it was my intention to resign from Council, because if I cannot do a full time job for the Division, I would prefer not to do any job at all. Council, however, has decided that it would be better if I was granted leave of absence for six months or so, and that is as it stands. I have thoroughly enjoyed being the VK5 scribe, especially when you consider that I claim no ability as a journalist or as a perfect amateur. I have written as I feel, and although I have made plenty of mistakes and had a few successes, if I had my time over again I wouldn't alter a word that I have written. I would like to take this opportunity of thanking all who have assisted me in the past, especially those who have permitted me to use them as the target for the month, Doc 5MD and that unspeakable Pincott (3APJ) in particular. In the early days

of the notes Doc. let me shoot at him unmercifully, and came back for more without a grumble, and as for "Pincotti", the pre-arranged battle that always took place was so real at times, that even my best friends were taking sides. One thing more, for the love of mike, don't hold that "Pansy" against me, it was all part of the act, although at times even I had my doubts! 73 and hope CUL. Don't forget to give my successor, Jack 5JD, all the help you can fellows, he is a good scout, even if he does not always agree with me!

TASMANIA

The general meeting for August was held at the usual spot, with 7BJ presiding, in the absence of 7FJ. Despite a most wintry night, there was a good roll-up of members, and Mark Hurburgh's lecture on "Infra Red Rays and their Detection" was greatly appreciated by all. The lecture was tape recorded by Barney Watson.

Len TLE advises that the Noise Investigation Committee is meeting with some success in its efforts and a source of troublesome noise in the TRX locality was rapidly located. Good work, chaps—keep it up.

I am pleased to be able to advise that the 2 mx band is receiving quite a bit of patronage again, and the following news is what I have managed to pick-up here and there on 144 Mc. activities. Athol 7AJ is replacing his 7 Mc. mobile gear with 2 mx equipment, and has the job well under way. Alan 7MY hopes to change over soon to an 828B in the final, although I understand that he is already putting quite a good signal into the Hobart area. Correct me if I am wrong Alan, but I believe you have developed a fairly efficient dummy antenna, consisting of a mighty length of co-ax running to an array on a nearby hill. Never mind, Alan we can't win all the time, can we?

7AB also is now active on two and is now doing well after a spot of trouble with a faulty 828B in the modulator. Dave TDF will probably be back soon on this band and is at the moment putting the finishing touches to the shack. I believe that Dave contemplates putting the 2 mx rig back in the car, so you tyre-born geeks will soon have a network all your very own. It will be a "Good Year" then won't it? Ugh, yes—I know. Right off the cob.

Len TLE and Bupe TRM are also active and I hope soon to add myself to the list again, so taken all round, things look really bright.

The Walking and Rescue Club recently informally approached the Institute with a view to the establishment of a radio communication system for their forthcoming Field Day in October. Tentative requirements are a base station and three out-stations, probably oper-

ating in the 7 Mc. band, and it is hoped that when further information is to hand we can accommodate them in this matter.

Ere this appears in print, another R.D. Contest will have come and gone. Lon 7LJ has been doing some research into contest facts and figures, and has found that participation is definitely falling off. Also, that every Amateur not taking part costs approx. 5 points. I wish I could have included this in last month's notes, but there it is, chaps, for future reference.

Joe 7EJ and Ted 7FJ have now completely sold themselves on xtal converters for the lower bands. Joe also has a soft spot in his heart for multi-band tank circuits. Mark 7MH and associate Johnny Grace are both delving into the intricacies of P.E. cells.

Members are once more advised to use their full call signs at all times, in accordance with Regulations. I know it's easy to shorten a call sign, particularly when in a hurry, but we must abide by what is laid down in this matter.

And now to close with a few short random jottings. 7MY was prevented from attending a recent meeting due to an unexpected arrival in the family. Moo-cow of a trick to have played on you Alan. Associate Vance Tobrman still languishing on Flinders Island; you will have to get that ticket Vance. 7ZAT seen buying up 528As so look out, 144 Mc. 7KA, 7DW, 7CF heard active on 40 mc. 7RM's sink interfering with his QSO—I had to give that one a plug Rupe. Sunday morning 7WI broadcasts pulling in an excellent local roll-call on 7 Mc.

NORTHERN ZONE

When this issue has been distributed, our old stalwart, 7KW, will have moved his QTH to Colac. VK3. Chris has been very energetic in all club activities, especially arranging talks and his 144 Mc. tx hunts. We wish you the best of happiness in VK3 land. 7LX has now joined forces with 7FF and they have been fitting around Flinders Island on radio business. 7EQ now has a 5 mc converter ready for next January. A visitor to this State is our Federal Traffic Officer, 3FH. Doug is doing tests on a new Vic-Tas. 160 RT link which goes via Flinders Island.

A couple of Sundays ago we worked the official 7WI station in Kobart. Nice to hear you Tom, even if you do use the TAFD still, we always listen for you when at home. Saw Harry Milling, our R.I., in town recently with a fat full of QSL cards that he was anxious to distribute. Some even bore the letters VK7AA, the official station!

NORTH WESTERN ZONE

Amateur operations of the zone have been quiet the last couple of months with periodic openings in the DX bands and some good re-

ports being gained, mainly on c.w. operation. The chief c.w. operators are 7UW and 7WA, the latter having just completed a new all-band v.f.o.-exciter combination with an excitation of about 25 watts input. This is being used as a rig until the new final is completed.

Associate K. Hancock was seen recently viewing some 1925 vintage autodynes with four r.f. stages and each stage enclosed in aluminium cans and all mounted on a thick aluminium chassis—a bit of real hi-fi. 7SF and 7AI have been studying Loran and obtaining many and varied patterns on the indicator, that pip is certainly hard to keep on the pedestal!

PAPUA—NEW GUINEA

The month of July, the 17th to be exact, at 1000 hours, marked the beginning of VK9WI as the official station of the VK9 Division. The Assistant Administrator for the Territory, Mr. R. Wilson, performed the opening ceremony. His opening speech paid tribute to the work of Amateurs in filling the breach during emergencies. Particularly in N.S.W. where he said Amateurs have helped in no small way in putting Amateur Radio in the public eye. He wished the W.I.A. every success in the future and congratulated 2YC, who obtained recognition in the Birthday Honours. These congratulations are heartily endorsed by all VK9 members. Following Mr. Wilson's address, the VK9 Division President, Frank 9FN, apologised for the non-arrival of the Federal President's address, which was put on tape for the occasion, but failed to reach Port Moresby before the opening date.

We then listened to an address by our own President, 9FN, and so VK9WI is now able to take its place in the scheme of things and will be heard every Sunday on 3.9, 7, 14 and 144 Mc. with the VK9 Division news. Slow more practice is also broadcast by VK9WI on 3580 Kc. every Friday night and frequency checks will be available whenever VK9WI takes the air.

In passing, we do compliment Frank on his untiring efforts on behalf of our Division, and we are extremely fortunate indeed to have at the helm such an untiring member, who seems to be able to surmount obstacles which no doubt would be a deterrent to others less enthusiastic. Congrats Frank and thanks.

From Port Moresby we hear that a lively v.h.f. group is anxious to broaden its field and appeals to all interested to contact them regarding skeds, etc. Some of the v.h.f. group are Frank 9FN, Doug 9DE and others, but imagine if anyone should contact these good people, arrangements could be made for tests and skeds.

We hear from Wau that the Wau Amateur Radio Club is now the holder of the call sign 9CW. One of the junior members of the club in his first CQ call on the air raised an FM8 in Martinique. The lads over there are getting very interested now, building their own one-tube sets, learning Morse code, and of course getting the feel of the microphone.

9DT is at present in Port Moresby awaiting his leave. Doug hoped to be in the R.D. Contest if still in Port Moresby. From G land we hear Charlie 8WG has been extremely ill. On the mend now, and expects to be leaving England in September. We wish him a speedy recovery and a safe trip home. Bob 9ES is all set to put Cubicle Quads on 20, 15 and 10 mc, but complains that timber is as scarce as DX these days, and harder to raise. Bill 9BW wonders whether the 8JK beam described in "A.R." for June, 1955, ever saw the light of day or was it just someone's nightmare. After assembling according to directions, it looked f.b. on the ground; comes the time to raise it in the air, and "woe is me"—it would put a double jointed jelly fish to shame.

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CORRESPONDENCE

The opinions expressed in these letters are the individual opinions of the writer, and do not necessarily coincide with those of the publishers.

LIMITED LICENSE

Editor "A.R." Dear Sir,
The vigorous controversy on the non-acceptance of limited licensees to full membership of the W.I.A., Western Australian Division, started by my esteemed friend, Tom Mulder, VK6MK, is getting all out of hand with a series of wild statements. It's a pity a little wisdom did not prevail by the Cinderella State's Council and the whole matter settled amicably instead of a tubful of dirty linen being washed in the open.

Many years ago, a similar controversy in the Radio Society of Great Britain started with the discrimination of receiving members from transmitting members. It became so heated, a break-away movement was started, and only now, after almost 20 years, has wise, sane counsel prevailed and a united front for Amateur Radio been presented.

The same story will be repeated in Western Australia unless the Council there does not act quickly and settle its own disputes in its own territory without telling these troubles to all Australia. The whole set-up reminds me so much of trade union strikes. Unless they are settled very quickly, they are like a cancerous growth—they spread rapidly, do a lot of harm, spread ill feelings, and no one gains anything.

As I see this dispute, it resolves into two clear cut issues:

- Whether limited licensees should be denied full membership until they have proved to the P.M.G. Department they can qualify for the full A.O.C.F. or
- Whether they should be given a clear green light with full membership irrespective of their qualifications.

I, unlike other correspondents, do not wish to take sides. I, like them, have not the full facts. Even now after three months of this literary battle, I can see all kinds of side issues being brought into the controversy which I feel cannot go without some observations.

VK6OR's big boost for experimenters holding them, as he infers through his writing, to be the epitome of Amateur Radio has little substance in actual fact today, although his remarks may have had some bearing a generation ago. Apart from personal satisfaction and a little knowledge, experimenting in Amateur Radio amounts to exactly nil today that's not already known.

This correspondent (VK6OR), through his remarks "The most valuable bands for the true Ham experimenter now lies from 144 Mc. and higher," endeavours to make the subtle reference that in these frequencies he and his colleagues are really doing something for the electronic art. I'll venture to say there's nothing being done through Amateur Radio in this country on the Amateur v.h.f. that's not already known. In the last few years I've had a chance to see much of v.h.f. in the commercial field at the Woomers rocket range, with its telemetric systems; West Australian Petroleum Ltd., with its seismographic surveys, and the Department of Civil Aviation. The stage reached in utilising v.h.f. here is far beyond the scope of an Amateur Radio experimenter.

Amateur Radio today has two main roles. Its service to the community as shown so admirably by the N.S.W. Division in last March's floods, and in spreading International goodwill and understanding to a troubled world through its DX channels. The days of the experimenter are gone for all time. If he is going to give something to the community in return for his great hobby, it is to the above two points: Emergency service and International goodwill through DX that he must devote his time and skill.

—ROTH JONES, VK3BG.

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EDITORIAL



HORIZONS AHEAD

The Amateur is Progressive. Into these few words from the Amateur's Code is crowded most of the great history of the Amateur. From the days of Marconi and his fellow collaborators of that era, the Amateur has carried on the good work of research and experimentation and has in so doing built up a reputation of industry and resourcefulness in the art of electronics. The advent of the last war, and latterly the poor ionospheric conditions produced by the sunspot cycle, brought about a limitation of normal Amateur activities. These events, together with the official change of title from experimenter to Amateur operator, have no doubt conveyed the impression that the Amateur is no longer interested in experimental work.

What is the future of the Amateur? It is becoming increasingly apparent that the hordes of Broadcast and Commercial carnivores are gradually ingesting our precious frequencies, compressing us into smaller and yet smaller channels. The Amateur will bitterly oppose and resent this unfair intrusion into his hard won and well merited territory; he will nevertheless continue to blaze new trails and open up new pastures in the v.h.f. and s.h.f. spectrums—a field in which the "limited" licensee will revel.

Recent announcements in the Press regarding the proposed launching of satellite space stations has perhaps been viewed by the average layman as Jules-Vernish rubbish. Such, however, should not be the attitude of the progressive Amateur, for like the scientists, he may well see his future among the stars. In this direction, lie several interesting avenues for the Amateur. One of these may be long distance commun-

ication, as already some partially successful experiments have been carried out in "bouncing" radio signals off the moon. Why not use our natural satellite as a new heaveside layer for reflecting our signals back to earth at a distance? Dr. Wernher von Braun, the famous German engineer and astrophysicist, has postulated that radio signals in the 140 Mc. region show every indication of being ideal for bridging space. Here, then, in an Amateur frequency channel, is an immediate means of testing a new technique.

This method of long distance communication, however, will pose many new problems for the Amateur. He will not only need to be an electronics engineer, but would need a working knowledge of astronomy and celestial surveying. He would also need to be a reasonable mathematician as well as a good tinsmith or plumber. These trades he would need for calculating distances and angles and making his high frequency apparatus. Antennae would need to be accurately tiltable as well as correctly aligned in azimuth. The Nautical Almanac would be as commonplace on the operating desk as the log book. Pulse modulation techniques would need to be used in order to obtain sufficient power for transmissions. These and other techniques new to the Amateur would all play a part in once again achieving DX contacts.

This is but one method the Amateur may employ to preserve his reputation as the pioneer of radio techniques. If this Editorial has turned your thoughts in new directions, it has achieved its object; but the final answer lies with you, the Amateur.

FEDERAL EXECUTIVE.

THE CONTENTS

| | | | |
|--|----|--|----|
| A Transmitter With Low Harmonic Output | 2 | All Models Exhibition, Melbourne, 1955 | 14 |
| Extended Lazy H Antenna | 5 | VK3 QSL Bureau Change of Address | 14 |
| Band Spreading And All That! | 6 | Are You Complacent About TVI? | 15 |
| More About Skeleton Slots | 9 | Amateur Call Signs | 16 |
| Trade Review—Geloso Pi-Coupler Tank Coil | 9 | DX Activity by VK3AHH | 17 |
| A Transmitter - Receiver Voice Operated Control Unit | 10 | Short Wave Listeners' Section | 18 |
| VK-ZL DX Contest, 1955 | 12 | Fifty Megacycles and Above | 19 |
| | | Federal, QSL and Divisional Notes | 21 |
| | | Correspondence | 24 |

A Transmitter With Low Harmonic Output

PART ONE

BY HANS RUCKERT,* VK2AOU

THE requirement of low harmonic radiation by Amateur transmitters is actually not new, but this construction point was usually more or less neglected by us. Some operators may have received notice from the P.M.G. Department about their radiation of harmonics outside the 7 Mc. band from their 3.575 to 3.8 Mc. transmission. Others had trouble with b.c.i., because the harmonics of their transmitter were beating with harmonics of the local oscillator of their neighbour's b.c. receiver, forming i.f. or r.f. signals the b.c. receiver was tuned to. The v.h.f. Amateur usually builds "band" receivers so he does not listen to harmonics his fellow Amateurs are putting out. Other v.h.f. services are very often not close enough to Amateur stations to have a great deal of trouble from harmonics.

All this will be different when our neighbours erect their t.v. beams only a few yards away from our Amateur station aeriels and their t.v. reception channels will fall just outside of Amateur bands where our harmonics have been tolerated so far. We will soon have no alternative but to close down our station or to build our transmitter up to modern standards to suit the t.v.-t.v.i. conditions.

When the Government decided to introduce t.v. in the capital cities of VK2

• By now, our readers have had an opportunity to study last month's article, "Who Will Be On The Air When TV and TVI is On?"

No doubt many resolutions to "re-build" have been made. Mr. Ruckert has sent us manuscripts and circuit diagrams of his completely t.v.i. proofed transmitter, which we are most happy to publish. In view of the great amount of detail he has provided, we are presenting the complete article in instalments over the next few months. Part One, presented this month, covers the v.f.o., frequency multipliers and driver stages.

Next month the final stage, antenna coupler and modulation checker will be described. From there on, we will cover the speech amplifier and power supplies. The low pass filter in use will also be described.

To all who wish to live happily with their t.v. viewing neighbours, Mr. Ruckert's article is highly recommended.

and VK3, the DX conditions were again at the very bottom, due to lowest sun activity of the present cycle. So the author thought that this would be the best time to go off the air, re-build the transmitter, make tests with low-pass and mains-line filters to be ready for the next good DX season, and also to reduce the chance of being driven off the air by angry neighbours, who wished to view t.v.

We will now discuss the transmitter only, filters and their calculation, alignment and construction will be described in a later article.

An important measure to reduce harmonic output is to avoid generating high power harmonics which are difficult to confine to certain transmitter stages and within their shieldings. A further method of suppressing harmonics is to use inductive coupling with shielded link lines which prefer the fundamental and by-pass any higher frequency harmonics which may still try to get through.

These methods alone with filters can bring a ratio of fundamental to harmonic output of 100 db. (100,000:1) or S9 plus 40 db. to S1.

V.F.O.-DOUBLER STAGES

Figure 1: A v.f.o. is a must these days for flexible operating when DX hunting and to reduce QRM. With the different ceramic capacitors, in a full range of

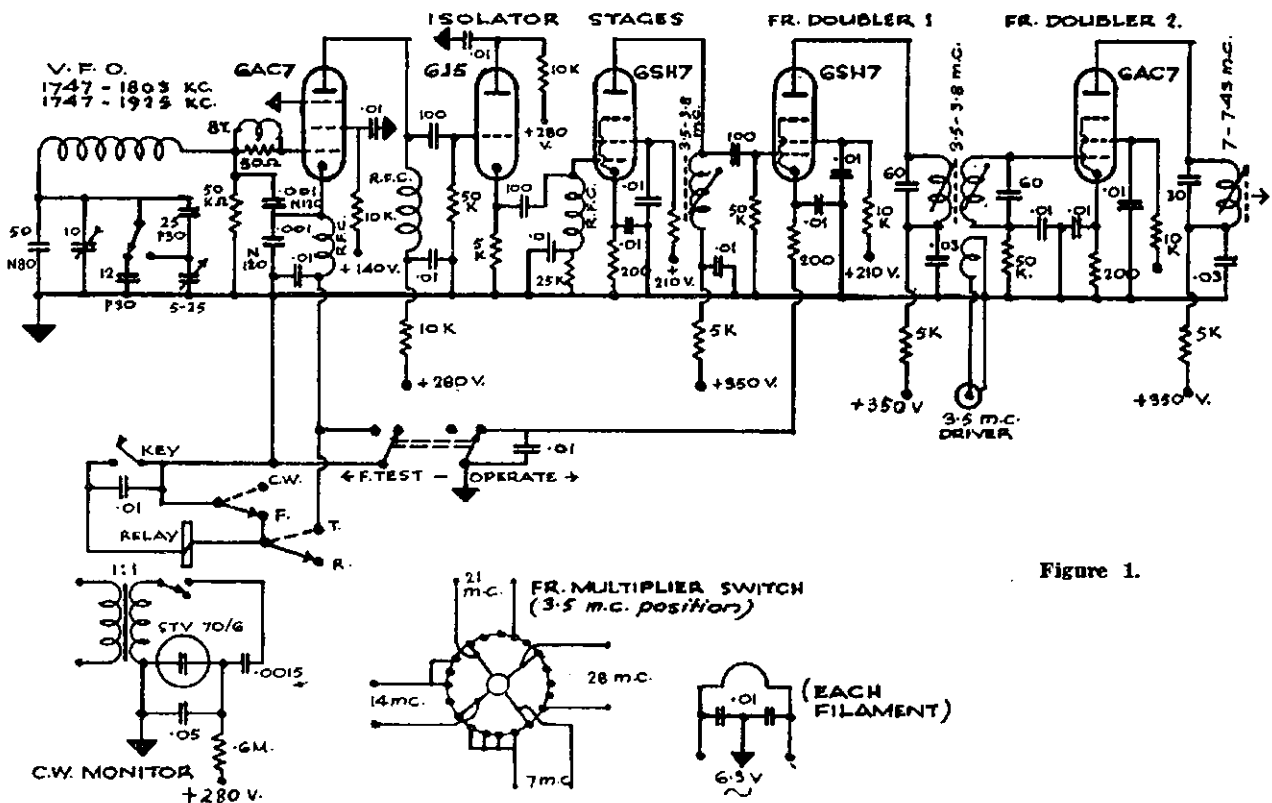


Figure 1.

temperature coefficient values available, it is no longer difficult to achieve the highest degree of stability. For the same reason, the Clapp oscillator circuit was used because the oscillator valve is coupled very loosely to the tuned circuit at low impedance points.

The v.f.o. works at 1.75 Mc. because larger L-C components are easier to get stable. Two ranges are used to get band spread for the 7, 14, 21 and 28.0 to 28.5 Mc. band, whilst the 3.5 and the whole 28 to 30 Mc. band can be covered with the other range.

For c.w. work the oscillator cathode is keyed. A switch closes the oscillator cathode and opens the cathode of the first doubler valve so that the oscillator frequency can be tuned to a received channel without exciting the final and aerial (F-test or operate).

Certain switches like "c.w. or phone" and "T or R" (transmitting or receiving) will be found on different drawings of the circuit and they control, with relays in some cases, the necessary operations on different transmitter chassis by throwing one switch only.

The 50 ohm resistor and the eight-turn coil at the grid of the oscillator are necessary to prevent the generation of audio frequencies here.

The filament current of the first two valves is regulated and the plate and screen voltage is regulated in all those cases where 140v., 210v. or 280v. is indicated.

The two further v.f.o. valves act as isolator stages to prevent load variations from effecting the operating conditions of the oscillator. The slug core of the choke in the plate circuit of the 6SH7 v.f.o. valve is tuned in such a way that the v.f.o. delivers a constant output over the tuning range.

No strong v.f.o. valves are required to drive the low power frequency doublers. It was very important to use only two or three watts input at the frequency multiplier stages to keep the harmonic power level as low as possible. With modern pentodes, which need only 1 to 1.5 watts driving power for 100 watts input, a low power driver can easily give all the output needed when used with these very low power frequency multipliers. The first two frequency doublers operate with valves like 6SH7 and 6AC7.

DOUBLER AND TRIPLER STAGES

Figure 2: There is a string of five frequency multiplier stages of identical design on a sub-chassis. Two of these doublers are shown in Fig. 1, whilst two other doublers and one tripler can be seen in Fig. 2.

Each multiplier stage should only deliver the harmonic its plate circuit is tuned to. In contrast to the usual design with only one tuned circuit between the stages, we find here band-pass filters with three tuned circuits. In this way a uniform gain over the entire Amateur bands was achieved without having to tune any multiplier when changing frequency. The resulting good skirt selectivity of each filter pass-band helps to suppress unwanted harmonics any frequency multiplier may generate.

The band-pass filters of each multiplier stage are inductively coupled with a link line using co-ax cable to the third tuned circuit of the set-up, which forms the grid circuit of the driver stage. The last doubler valve, EF14, is similar to the 6AC7, but this Telefunken steel valve can handle 5 watts plate dissipation (if required). The driver valve could have been a 6V6, but the 807

was selected because the plate and grid connections had to be far apart to get better shielding.

This 807 valve is not a frequency multiplier, thus helping to filter undesired harmonics before they reach the final, where they could be amplified to such a degree that a low-pass filter would have difficulty keeping them inside the rig.

A variable screen grid resistor allows adjustment of the drive at any frequency to the required 8 Ma. grid current of the final for 100 watts input. Only 350 volts at the plate and 50 to 100 volts at the screen grid are necessary and usually only 20 to 30 Ma. plate current is measured.

A single switch selects the desired grid circuit and so the correct frequency multiplier when changing bands.

To be able to use good shielding of the transmitter, all stages had to be designed for band switching from the front panel.

HAVE YOU MODIFIED AN AT5?

The Magazine Committee has been asked by a New Zealand Amateur for conversion details for an AT5 transmitter to enable him to operate on 80, 40, 20, 15 and 10 metres. If anybody has made such a conversion, we would very much appreciate the details. Can you help?

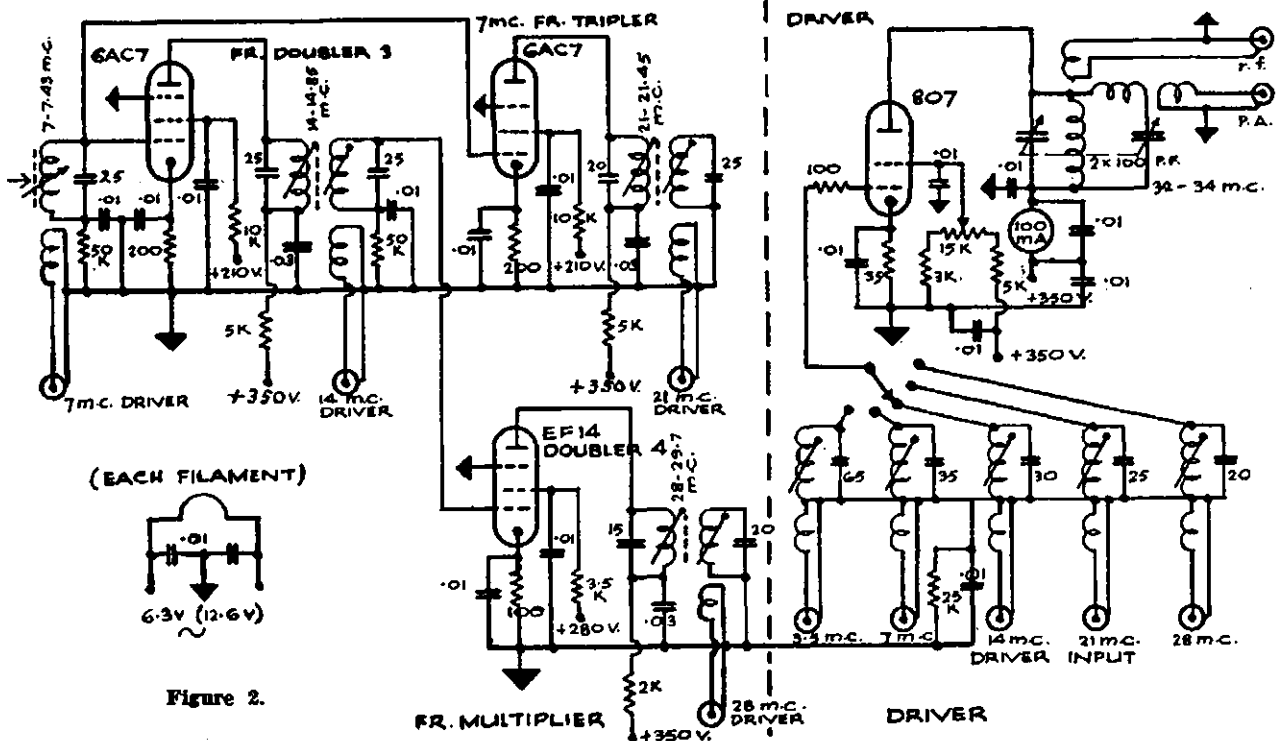


Figure 2.

ZEPHYR MICROPHONES

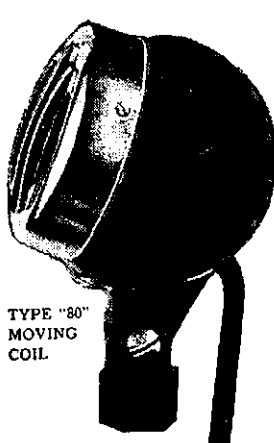


"THE MICROPHONE THAT SPEAKS FOR ITSELF"

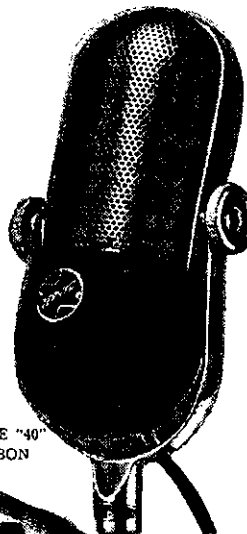
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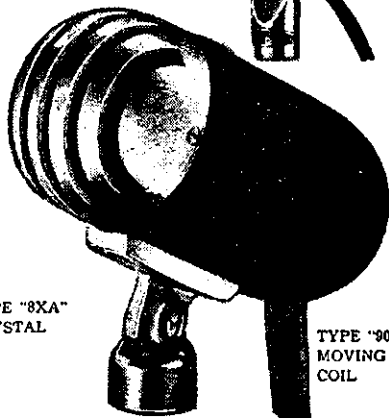
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Extended Lazy H Antenna

BY WAL. E. SALMON,* VK2SA

One of the most controversial subjects in Amateur Radio is the means by which a desired degree of antenna efficiency is obtained. In the early days of experimentation rotary beams were unknown and most Amateurs contented themselves with horizontal or vertical wires and after much patient work achieved varying degrees of efficiency.

With the development of the Yagi antenna the two, three or four element rotary beam for Amateur frequencies became commonplace and it would appear that the trend in this direction is gaining in popularity particularly with Amateurs residing in thickly populated areas where land space is limited.

For purpose of discussion in this article, the writer has purposely refrained from introducing any comment on vee beams or rhombics as the article is purposely written for the Amateur who is interested in operating on several bands and who is not prepared to erect a costly mast structure to support several beams and who by virtue of restricted space must necessarily design an antenna to conform with the area available.

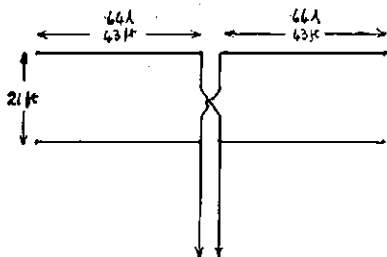


Fig. 1.—Modified Extended Double Zepp.

The antenna to be described is completely original and to the writer's knowledge has not been described or published in any local or overseas journal. We have "ZL Specials" and "G8PO" antennae and for want for a name the antenna might be called "The Extended Lazy H."

Several years ago the conventional Lazy H antenna was cut and erected for 14 Mc. The aerial consisted of two horizontal colinear elements stacked two above the other and separated by a half wavelength in the vertical plane. The array was erected on two 41 foot masts, the lower two elements being only nine feet above ground. The effective height of this type of antenna is measured from the centre between the top and bottom elements to ground and in this case the effective height was approximately 24 feet. Needless to say the observed efficiency was only about equal to a full wave zepp 41 feet high on the same frequency.

Attention was then directed to the possibilities of the Extended Double Zepp, reference "QST," June, 1938. The height of one mast was increased to 45 feet to compensate for ground slope and the antenna cut for 14 Mc. and erected for north-east south-west directivity. Improved efficiency over the full wave antenna was apparent on W contacts on 14 Mc. and in addition some excellent phone contacts were made with W stations on 7 Mc. Results on 21 Mc. indicated a number of major lobes giving good DX contacts. From the results it would appear that this type of antenna possesses the desirable feature of good efficiency on all Amateur frequencies, the gain over a dipole on 14 Mc. being 3 db.

The theoretical gain of the previously mentioned conventional Lazy H antenna of 5 to 6 db. was considered attainable only if the lower two elements could be elevated to a height approaching one half wavelength from ground. This was impossible to achieve with the existing masts. Consideration was then given to the possibility of adding two additional extended half wave lower elements to the Extended Double Zepp and an examination of the nodal points on the Double Zepp antenna indicates that the correct point for connecting two lower elements would be approximately 21 feet from the flat top, according to frequency of operation in the 14 Mc. band. Connection at this point is essential in order that the antenna current in the four elements is equal in value.

The calculation subsequently proved not at all critical as the completed antenna operates with equal efficiency in any part of the 14 Mc. band. The feed line between the top and bottom elements is transposed and element lengths are referred to in Fig. 1. Current flow in the antenna is illustrated in Fig. 2.

The writer considers the Extended Lazy H is more efficient than the accepted version of the Lazy H for a given height for the following reasons:

- (1) The close proximity of the four half waves in the Lazy H antenna causes an undesirable degree of mutual coupling between them with a consequent reduction in gain. This defect in design is considerably reduced in the extended antenna described.
- (2) The effective height of the antenna for a given height in masts in the writer's case when compared with the conventional Lazy H was increased from 24 feet to 31 feet, the lower elements being approximately 20 feet from ground.

The adaptability of the modified antenna to operate on 21 and 7 Mc. is worth serious consideration and excellent DX contacts have been effected on both bands. The directional characteristics on 21 Mc. are not yet known, but signal reports indicate the presence of major lobes giving good general coverage. On all bands a series parallel antenna tuner is used and a four inch spaced open wire feed line couples the tuner to the antenna.

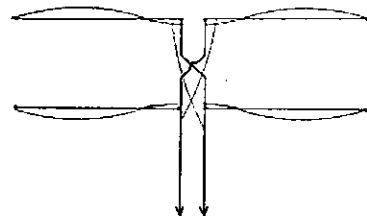


Fig. 2.—Current flow of Extended Lazy H.

The reader may now be interested in results achieved and the writer would like to add that for results on 14 Mc. the antenna has outperformed all previous wire antennae tried out for W contacts on both long and short paths. The lower two elements were added to the extended zepp on 19th December, 1954, and numerous W phone contacts have been made since that date. The majority of the signal reports being S8 and S9 and nothing below S6 and S8 from East Africa. The power input is approximately 75 watts for all contacts.

An analysis of all signal reports indicate equal if not better performance to stations using rotary beams in the desired direction and it would appear that the accepted gain of 5 db. of the conventional Lazy H is exceeded. Comparison reports have also been made by the simple expedient of removing the two lower elements, the antenna then becoming the Double Extended Zepp and the signal was reported to drop two S points and in some contacts a drop of three S points was reported.

PHOTOS OF VK3WI EXHIBITS

Three photographs were taken of the W.I.A. Victorian Division's stand at the All Models Exhibition. One is viewed from the left, another from the centre, and the other from the right hand side, the latter is shown on page 14.

Any member desirous of obtaining a copy of these large photographs is requested to communicate with Max Hull, VK3ZS.

* 106 Flora Street, Sutherland, N.S.W.

Band Spreading And All That!

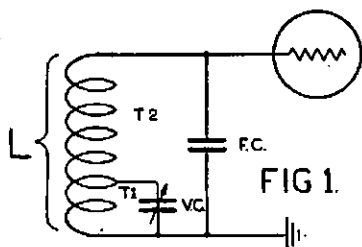
BY V. J. McMILLAN,* VK2AWN

It is not my intention to enter into arguments as to the relative merits of the various types of valves, what constitutes the "best" intermediate frequency, whether or not a crystal filter or QX'er is desirable, the desirability of a separate oscillator valve as against the normal "mixer-oscillator" valve, or the dozens of other points which have been contentious points between Amateurs for years.

No! I simply propose to give one method of band spreading which, to the best of my knowledge, has never been fully explained, other than by a brief, airy statement that it works, and dark hints that the calculations are too complicated to worry about!

Fig. 1 shows the scheme in essence. F.C. is the band setting condenser, V.C. is the tuning condenser, and the inductance consists of a single coil of T1 + T2 turns. The capacity of the combination of F.C. + V.C. is given by the formula:

$$\text{Capacity} = \text{F.C.} + \text{V.C.} \left(\frac{T_1}{T_1 + T_2} \right)^2 \dots (1)$$



It will be noted that the effective capacity of the variable condenser V.C. varies as the square of the proportion of T1 to T1 + T2. To put this a little more simply, if we centre tap the inductance (i.e., T1 = T2) then the apparent capacity of V.C. is only one-quarter of its real capacity since

$$\left(\frac{1}{1 + 1} \right)^2 = \left(\frac{1}{2} \right)^2 = \frac{1}{4}$$

This fact immediately suggests that we can use practically any capacity of two or three gang broadcast band condenser and still obtain a relatively small effective value.

The band setting condenser F.C. consists of a number of separate capacitances which, in the main, are:—

- The actual band setting condenser itself.
- The inter-electrode capacity of the valve.
- The capacity between turns of the inductance.
- The stray capacity of the inductance to earth.
- The stray capacity of the wiring between the inductance, its value and condenser to earth.

This seems a formidable list, but, generally speaking, we can make an assumption for items (b) to (e) which only leaves (a) to worry about.

● Those of us who build their own Amateur receivers—either by choice or necessity—have been somewhat neglected in the popular Technical Press in certain fundamentals of theory and practice. In the following article the Author has endeavoured to set out in logical sequence, a beginner's approach to band spreading a receiver.

Let me digress here for a moment to explain that I am assuming you will be making a receiver having plug-in coils for each band, since, in my opinion, this is the only effective method of obtaining high gain coupled with good selectivity, using a minimum of stages. It is, of course, possible to make a band-switched arrangement to cover more than one band, but this usually leads to considerable trouble and certainly does not make for short, well shielded leads.

To get down to something concrete, let us assume that we wish to make a set of coils to cover the 21 megacycle band with some overlap. Let us also assume that we have a broadcast condenser of 400 pF. and some 807 valve bases which we want to use.

The first step is to make an assumption for the stray capacity of the circuit, and bearing in mind that we will have short leads, we can assume a figure of 30 pF. This minimum value of capacity determines the highest value of inductance (L) that we can use to obtain a given circuit resonance frequency.

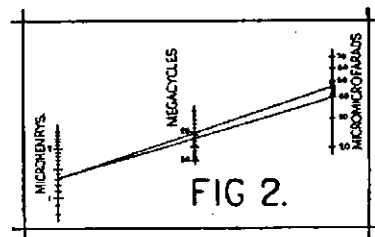
It is not my intention to declare that the best L/C ratio is a certain value, but it is necessary to bear in mind that, in general, high values of L will usually give high values of Q, better stage gain and selectivity. On the other hand, a lower value of L (and therefore higher C) will usually give better mechanical and electrical stability, which makes for more constant calibration in terms of frequency and dial position. For my own part, I prefer to have a high value of L even though this does mean short time frequency drift due to r.f. heating, mainly around the oscillator section. You must make up your own mind on this score and if you are really keen, it is surprising what you can do with negative temperature co-efficient condensers, or, easier still, a small variable trimmer condenser across the oscillator section of the main tuning gang. (A value of about 10% of the main condenser will do nicely.)

In addition to our previously estimated figure of 30 pF. we can add a further 10 pF. to be in the form of a variable tubular type condenser. This gives a value of F.C. in formula (1) of 40 pF. when the gang condenser plates are fully out of mesh.

Fig. 2 shows portion of a chart† which correlates inductance, capacity and frequency.

From the 40 pF. mark on this chart we draw a line through the 22 Mc. frequency and obtain an inductance value of 1.32 microhenry. Working backwards from this 1.32 microhenry point through the 20.5 Mc. point we find that the required capacity is about 46.5 pF. That is to say, we require to increase the apparent value of V.C. by an amount of 6.5 pF. Incidentally, if your L/C/F chart does not extend far enough in the L values, just extend the L scale line in pencil; mark off the intersecting point from the other values of F and C and scale off from the last marked division. Since the scale is logarithmic, it extends indefinitely, but the decimal point alters and so the actual physical distance on the scale is the same as the marked scale above it, but changes its decimal point.

We have now established the required values of L and C (total).



COIL WINDING

At this stage we must consider the practical aspects of winding an inductance using an 807 valve base as its mounting and connecting device, and also as a supporting device for the band setting condenser F.C.

If you are fortunate enough to be able to screwcut a thread in the base, I suggest that you cut a thread of 16 turns per inch. For the winding itself, I would suggest bare copper wire of about 20 s.w.g.

Fig. 3 shows a suitable arrangement of base connections to the main coil and also its coupling coil to the previous stage. From this figure it will be noted that the main coil L will be an odd half turn arrangement in order to retain straight leads through to the pins, and to leave the interior of the base relatively open, so making the mounting of the band setting condenser F.C. inside the valve base a simple job.

CALCULATION OF INDUCTANCE

We are now in a position to calculate the required number of turns for L, having a value of 1.32 microhenry.

There are quite a number of methods for doing this, and most of the Handbooks cover the subject fairly well. The formula I use is the well known "Wheeler's Formula" which gives the value directly in microhenries.

† Wireless World Radio Data Charts; R.S.G.B. Handbook; Radio Handbook; A.R.R.L. Handbook.

* 28 Waters Road, Naremburn, N.S.W.

Wheeler's Formula:

$$L = \frac{a \times a \times T \times T}{9a + 10I} \dots (2)$$

where a = Mean turn radius in inches.
 T = Turns.
 I = Length in inches.
 L = Microhenries.

Using our known facts of former size, wire size and threads per inch, we find that 5½ turns will give us the closest approximation to 1.32 microhenry, viz.:

$$L = \frac{0.688 \times 0.688 \times 5.5 \times 5.5}{9(0.688) + 10(0.344)}$$

= 14.32 ÷ 9.63 = 1.49 microhenry.

Using this value of L, we now check back on the required value of F.C. + C which we find to range from 41 pF. to 35.5 pF., that is, C requires to be 5.5 pF. for a band of 20.5-22 Mc.

From formula (1) we can deduce the following fact:

$$\left(\frac{T1}{T1 + T2}\right)^2 \times V.C. = C \dots (3)$$

where T1 = Tapped portion of L.
 T2 = Remaining portion of L.
 V.C. = Capacity of gang condens.
 C = Apparent capacity of gang condenser in the L/C combination.

Since we only require to know the tapping point (that is, the value of T1), we can substitute in formula (3) and obtain:

$$T1 = (T1 + T2) \times \sqrt[3]{C \div V.C.} \dots (4)$$

Our known facts are:

- (a) T1 + T2 = 5.5 turns.
- (b) C = 5.5 pF.
- (c) V.C. = 400 pF.

It is purely coincidental that the figures in (a) and (b) are the same.

Inserting these values in formula (4) we obtain:

$$T1 = 5.5 \times \sqrt[3]{5.5 \div 400}$$

$$T1 = 5.5 \times \sqrt[3]{0.01375}$$

$$T1 = 5.5 \times 0.1172$$

$$T1 = 0.645 \text{ of a turn.}$$

If you have forgotten how to extract the square root of a fractional number, the following ratios of V.C. ÷ C may help you (note the ratio is not C ÷ V.C.)

| V.C. ÷ C | $\sqrt[3]{C \div V.C.}$ |
|----------|-------------------------|
| 100 | 0.1 |
| 90 | 0.105 |
| 80 | 0.112 |
| 70 | 0.120 |
| 60 | 0.129 |
| 50 | 0.141 |
| 40 | 0.158 |
| 30 | 0.182 |
| 20 | 0.224 |
| 10 | 0.316 |
| 5 | 0.447 |

From this table you will be able to establish to an approximate degree, the tapping point on the winding, bearing in mind that the final tapping position will be subject to a certain amount of trial and error.

For the actual winding on the valve base, it will be necessary to drill some 1/16" diameter holes at all points where the coil leads pass through the side of the valve base as determined by the number of turns on the coil, and also for the tapping point. As I stated previously, if you can screw-cut the valve base, it makes the job so much easier, but if you cannot, then you will have to space wind the turns, preferably using

a slightly bigger wire for the spacing wire. Wind both wires on together and when the proper winding is firmly anchored, just unwind the spacing wire. For the tapping lead it is better to use a much smaller wire (about 26 s.w.g.) which is easier to handle and bring "through" two adjacent turns and yet not cause a short circuit between them. The soldering on of the tapping lead is quite tricky but, believe me, when you have done half a dozen, you are quite an expert!

The next thing we have to consider is how many turns to put on the next stage coupling coil. The actual turns are not particularly critical and I usually make them about one-third of the main coil (subject to consideration of the spacing of the valve base pins). In our present case we have 5½ turns and 1/3 of 5½ is 1.83. It so happens that we can obtain very close to this number if we connect the coils to the valve pins as I have shown in Fig. 3. The spacing between coils should be about 1/8".

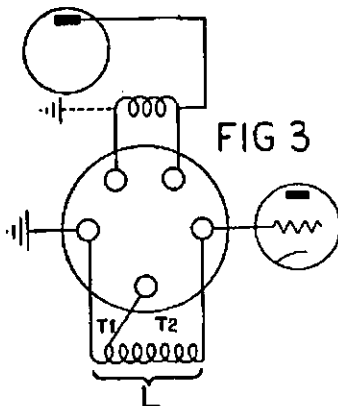


FIG 3

After mounting and connecting the band setting condenser inside the valve base, we are in a position to test the coil to see whether it gives us the band spread that we want. This brings us to the use of the grid dip oscillator, together with the heterodyne frequency meter (which you must have as part of your station equipment).

GRID DIP OSCILLATOR

Fig. 4 shows a simple form of grid dip oscillator circuit which is the well known Hartley oscillator with a resonance indicator in the form of a milliammeter in the grid circuit. Practically any triode valve is suitable, but the circuit values of resistance and coupling condensers will vary, depending on the valve type. The variable tuning condenser should be about 150 pF. which will give a band coverage of about two to one in frequency. That is to say, one coil should cover both the 40 and 20 metre bands. There is nothing to prevent you using 807 valve bases as plug-in coil mounts to cover practically any band up to about 56 Mc.

It is not necessary to use batteries or even a high tension d.c. supply for your g.d.o. I would suggest that you purchase a cheap bell ringing transformer of the type that has the primary and secondary windings alongside each other. Dismantle the transformer and strip off the existing secondary winding, counting the turns as you do so. Re-wind the secondary to give a suitable voltage

for the filament of the valve you intend to use. Over this winding and connected to it, wind a suitable number of turns of fine gauge wire to provide a voltage of anything from 50-100 volts. The free end of this winding becomes the high tension plate supply for the g.d.o. and the valve itself becomes its own rectifier.

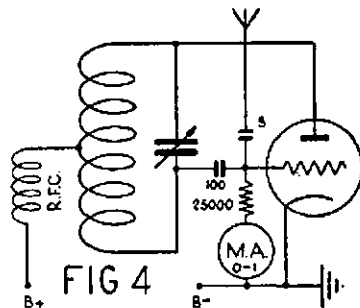


FIG 4

This arrangement has the obvious advantage of cheapness and is always available for use, whereas batteries have a habit of being dead just when you want them. In addition, this arrangement has another very important advantage, and that is the very distinctive heterodyne note which is not a whistle, but rather sounds like a telephone B-rirrr!

Using the g.d.o. and checking against the heterodyne frequency meter, you should have no difficulty in picking out the first, second, third and other sub-harmonics of the g.d.o. frequency. For instance, when you measure your 21 Mc. coil, you should be able to check the g.d.o. frequency on 7 or 3.5 Mc. with your heterodyne frequency meter. The relative strength of the signal gives a guide as to which sub-harmonic you are listening to.

If you have never used a g.d.o. before the "modus operandi" is to loosely couple the g.d.o. coil to the coil under test and vary the g.d.o. tuning until a pronounced dip is noticed in grid current. The minimum grid current point is the resonant frequency point.

Re-Winding Transformer

It occurs to me that some additional information on re-winding the bell transformer to suit the particular purpose we have in mind would not go amiss.

Fig. 5 shows a typical voltage regulation curve in terms of output voltage measured across the 8 volt winding of a small bell-ringing transformer. These transformers are usually rated at 200-250 volts 40-100 cycles and have secondary output voltage alleged to be 3, 5 and 8 volts at 1 amp. From Fig. 5 it will be noted that with 240 volts applied to the primary, the no-load secondary volt-

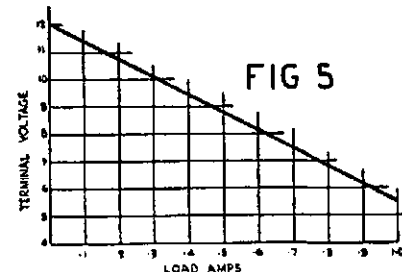
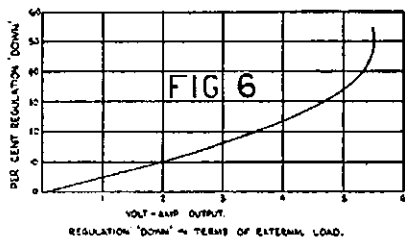


FIG 5

tage measured on the 8 volt winding was 12 volts which drops in a straight line to 5.5 volts with a 1 amp. load.

From this graph we can draw another graph (shown in Fig. 6) which shows the regulation "down" or voltage drop expressed as a percentage in terms of output volt-amps. This graph will not be a straight line as was the first graph. The second graph (Fig. 6) is the most useful one since it enables us to correctly forecast the terminal voltage under any particular load condition when re-wound, up to the full load as shown in the graph.



To take a practical case, let us assume that we want to supply the filament of our g.d.o. at 6.3 volts and 0.3 amps. and we also want a plate voltage of about 80 volts and 3 milliamps. (0.003 amps.). The total load is thus:

$$\begin{aligned} 6.3 \times 0.3 &= 1.89 \\ 80 \times 0.003 &= 0.24 \\ \hline &2.13 \text{ volt-amps.} \end{aligned}$$

Referring to Fig. 6 we see that with an external load of 2.13 volt-amps., the voltage regulation "down" will be about 11%. We therefore have to re-wind the secondary to give a "no load" filament voltage of:

$$\frac{6.3}{100\% - 11\%} \text{ or } \frac{6.3}{(1.0 - 0.11)}$$

$$= 6.3 \div 0.89 = 7.09 \text{ volts}$$

and the plate supply voltage will be:

$$\frac{80}{(1.0 - 0.11)} = 90 \text{ volts at no load.}$$

This is not strictly correct, since the calculation of voltage regulation of a three-winding transformer is rather more involved than this simple method.

All we have to do now is to measure the open circuit voltage and loaded circuit voltage of our transformer, draw the two graphs shown (the harmonic's science exercise book is a great help here!), determine what voltage and current we want, and see from the graph whether it is within the transformer rating. The graph will also show what regulation to expect on the completed re-wind as before explained.

The next step is to dismantle the windings from the transformer, unwind the secondary coil and, at the same time, carefully count the turns.

From our measured value of no load volts (incidentally the "no load" volts can be measured by a 1 milliamp. a.c. meter) and our knowledge of the secondary turns (since we counted them), we can determine the volts per turn. (That is, we divide the secondary volts by the turns.) From the value of volts per turn, we can determine the turns for any voltage by dividing the required volts plus the regulation (as predetermined) by the volts per turn.

Strictly speaking, we should alter the cross sectional area of the secondary

wire inversely proportional to the alteration of no load voltage, but it will probably be "near enough" to use the same wire and add a couple of per cent. to the turns for luck. For the plate supply voltage we will have to use a much finer gauge of wire to get the turns in the space available.

To give an example, if the transformer has the characteristics as shown in Fig. 5 and has 370 turns on the secondary, then the volts per turn will be (at no load) $12.0 \div 370 = 0.0324$. Since we have predetermined that we require 7.09 volts at no load, then we require $7.09 \div 0.0324 = 219$ turns on the secondary for the filament winding, and $90 \div 0.0324 = 2,780$ turns for the plate supply winding.

When you have re-wound the secondary, re-assemble the transformer, connect it up and see how close your terminal voltages measure to what you expect!

CHECKING BAND SPREAD

Having built our g.d.o. and power supply for it, we can proceed with the checking of the band spread of our 21 Mc. coil. It is advisable to start from the oscillator coil and work forward rather than start from the aerial coil.

Our original aim was to provide a band coverage of 20.5-22 Mc. and assuming that we propose to use an intermediate frequency of 1,500 Kcs, the oscillator must cover the range of (20.5 - 1.5) to (22 - 1.5) Mc., that is, 19-20.5 Mc., or alternatively (20.5 + 1.5) to (22 + 1.5) Mc., which is 22-23.5 Mc.

Re-calculate the position for the tapping point as before explained and mount the band setting condenser, which should be a fixed type having stable characteristics. Plug the coil in, bring the tuning condenser plates fully out of mesh, switch the receiver on, and check the oscillator frequency by listening for the heterodyne frequency meter signal. The frequency that you obtain will be the highest frequency of the LC combination, and at this point it may be necessary to alter the value of the band setting condenser to obtain the frequency you are aiming for. It will, of course, be necessary to have a suitable coil in the mixer grid circuit, but this need only be a very rough one since your heterodyne frequency meter will "swamp" the receiver anyway.

When you have obtained the highest frequency you want, bring the tuning condenser into full mesh and then check the oscillator frequency again. From the two values of frequency obtained, it will be readily apparent whether or not your coil has sufficient band coverage. **If it does not cover sufficient range, it will be necessary to shift the tapping point so as to encompass more of the total coil. If it covers too much frequency range, reduce the value of the tapped portion of the coil.**

Having disposed of the oscillator coil, it is only necessary to calculate the tapping positions on the other coils and to check the frequency range with the g.d.o. Naturally the closer you make the band coverage of these coils coincide with the band coverage of the oscillator coil, the better your receiver will be. Patience is necessary, and what I usually do is to have one valve base which becomes the "trial coil" for each stage

in turn. It is so full of holes that it looks like a sieve!

Having obtained the correct tapping point for the stage, you will make the final coil to the same dimensions and tapping point as the trial coil, so that your complete set of coils will look clean and workmanlike. Actually you will probably find that all coils, other than the oscillator, will be near enough the same, the only real difference being the value of "band spreading" condenser required for each stage. Since this condenser is of the variable type, it is only a matter of adjusting it for the particular stage concerned.

You will notice that the frequency of your coil-condenser combination when measured with the g.d.o. is different from its frequency when actually used in the receiver under working conditions. This is evidenced by the fact that the signal can be "peaked" by reducing the value of the band spreading condenser. A little reflection on this point reveals that the stray capacity of the circuit is increased due to the "space charge" effect of the valve under working conditions, as compared with the valve being cold. It therefore becomes necessary to compensate for this by reducing the value of our variable band setting condenser.

With careful work, you should now have a receiver which, so far as the r.f. section is concerned, is as good as, if not better than, any commercial multi-band receiver.

The method of band spreading outlined here has the following advantages:

- (1) The coil-condenser combination can be readily calculated with a reasonable degree of accuracy.
- (2) The variable tuning condenser can be any commercial type of broadcast gang and need not be of a low loss type since it is effectively in the "earthy" side of the coil.
- (3) There is no need to mutilate a good broadcast type of gang condenser to obtain a low effective capacity.
- (4) By using separate plug-in coils for each band, high gain and selectivity can be obtained on all Amateur bands.
- (5) The band spread can be made any desired value subject only to the availability of suitable low drift fixed condensers for the oscillator section, and your own skill and patience.

I have used this method of coil changing and band spreading on the 80, 40, 20 and 15 metre bands with complete success. The only modification to the method was that, in the 80 metre coils, I used close wound enamelled wire and fixed s.m. condensers for the band setting condenser F.C. The turns and tapping points were adjusted to suit the value of fixed condensers.

The method of approach to the problem of band spreading as outlined here should afford you many hours of interesting and instructive work; furthermore, you will be initiated into the mysteries of using a grid dip oscillator which, in my opinion, is a "must" in every Amateur shack. Its use greatly shortens the length of time necessary to obtain a given resonant frequency for LC circuits in receivers, transmitters and aerials. It will even give you a rough indication of relative Q between two coils of the same resonant frequency. Truly a very useful gadget for the constructor.

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|----------|---------------------------|------------------|
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| UM2 | 5 3/4" x 4 3/4" x 5 3/4" | 11 8 |
| UM3 | 5 3/4" x 5 3/4" x 5 3/4" | 14 8 |
| UM4 | 10 3/4" x 6 3/4" x 8 3/4" | 41 0 |

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MORE ABOUT SKELETON SLOTS

BY DON B. KNOCK,* VK2NO

Further to the articles by VK5XU and myself in "A.R." for April, 1955, some additional points should be of interest. An article in "Wireless World," by B. L. Morley, deals with some interesting characteristics. Briefly the points are:—

- The electric and magnetic fields are interchanged when changing from a dipole to a slot.
- In the case of the half wave dipole, the impedance increases from the centre to the ends, but in the case of the half wave slot, the reverse is the case—the impedance decreasing from the centre to the ends of the slot.

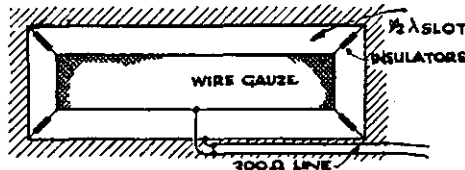


Fig. 1.—"Folded" Slot Aerial.

● The impedance of a slot can be lowered by folding it (by inserting a metal or wire gauze section). In the case of the folded dipole, the impedance is stepped up by the number of elements in the fold, but the slot works the other way.

● With a normal dipole a reflector decreases the centre impedance of the dipole, but with a slot the presence of the reflector increases the impedance. A "box" reflector would raise the impedance to about 1,000 ohms.

● On the face of this, there is room for experiment with feeder tapping positions along the slot, from the centre up (or down). Such procedure will be convenient with 600 ohm, 300 ohm, or 150 ohm feedline, but a matching stub is desirable for lower impedances.

● When a slot is "folded," as shown in Fig. 1, a good match will be obtained with 300 ohm ribbon, the centre impedance being about 250 ohms.

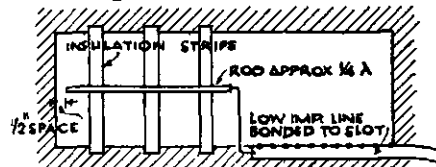


Fig. 2.—Slot with low impedance matching transformer.

It will be necessary, of course, to arrange for supporting insulation material to hold the insert metal section in position. As drawn in Fig. 1, this "folded" slot would radiate vertically polarised waves. It would need therefore for VK 144 Mc. practice, to be erected vertically in order to deal effectively with horizontal polarisation requirements.

The folding principle can be applied to the skeleton type of slot with equally effective results.

Finally, Fig. 2 shows how low impedance (70 ohm) line can be matched through a transformer—probably most effective method for using co-ax. cable.

* 43 Yanko Avenue, Waverley.

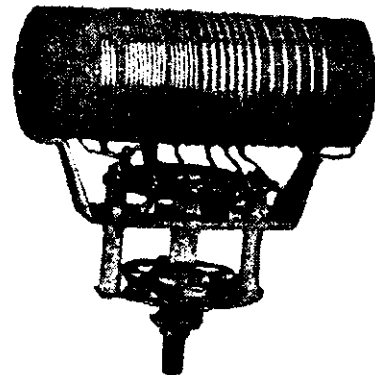
TRADE REVIEW

GELOSO PI-COUPLER TANK COIL

Back in June, 1954, we reviewed the Geloso Signal Shifter, at that time suggesting the addition of a single 807 and a set of plug-in coils would make a very compact 50 watt transmitter. Now from the same manufacturer we have the answer to the problem of a compact rig.

The Geloso Pi-Coupler Coil, Model 4/110, is wound on a ceramic former 1 3/8" diameter 3 1/2" long, on which is rigidly mounted a six-position wafer switch of the progressive shorting type. The whole assembly occupies a space measuring 3 1/4" x 3 1/2" x 1 3/8", excluding the portion of the spindle which protrudes through the front panel.

The ceramic former is threaded 22 turns per inch, the winding being spaced to occupy 2 1/2 inches. The coil is tapped at five, six, eight, twelve, eighteen, and twenty-seven turns. The wire spacing is varied between taps.



To resonate the coil on all bands a variable condenser with a maximum capacity of 185 pF. is required. The pi-section output condenser should have a maximum capacity of 930 pF. Under these conditions the circuit can be coupled to a line with an impedance of 40 to 1,000 ohms.

The entire unit is attractively finished and reasonably priced. Used with a single 807 or 6146, a very efficient final should result. With the possibility of t.v. in the near future, and the advantages of pi-couplers for harmonic reduction, this unit should prove equally as popular as the Geloso Signal Shifter.

We are indebted to R. H. Cunningham Pty. Ltd., the Australian Distributors, for the opportunity of examining one of these units.

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."

A Transmitter-Receiver Voice Operated Control Unit

BY N. L. SOUTHWELL,* VK2ZF

THE idea of controlling the switching on and off of a transmitter by means of the modulating signal is many years old, the main drawback was, that usually the operators concerned had to wear headphones to avoid feedback troubles. Feedback occurred when any sound from the loudspeaker (when one was used) reached the microphone, the v.o.c. relay being operated to bring the transmitter on.

The modern approach to v.o.c. working is to tie in the receiver switching with the v.o.c. unit and also to add, what has become known as an anti-trip circuit, to that unit.

The object of this circuit is, as its name implies, to prevent output from the loudspeaker, picked up by the microphone, from operating the voice controlled relay. The result is that you can sit back in your chair with the loudspeaker in operation and carry on a normal conversation with another station so equipped, or with a station using manual control break-in, without touching any controls. Speak, the transmitter comes on and the receiver loudspeaker is muted; stop speaking, the transmitter shuts down and the receiver comes to life. A circuit of a v.o.c. unit permitting this type of operation, and used by the writer, is shown in Fig. 1.

CIRCUIT DESCRIPTION

V1 is a twin triode, which acts as two single channel amplifiers, one channel is fed from the microphone speech amplifier, at some point before the main modulator gain control. The second channel is fed from the audio section of your receiver. The circuits from which these two amplifiers are fed should have a signal level of at least 2 volts r.m.s. for satisfactory operation of the unit to be obtained.

The amplifier outputs are each fed to the separate diodes of a 6H6 (V2) whose outputs are connected in "series aiding," so that the differential voltage between the two channels is applied to the grid of V3, in series with an adjustable negative d.c. bias. This bias voltage is obtained from the diode V4A wired across the 6.3v. heater supply, and through its output filter C9 and voltage control R11.

The thyatron relay control tube V3 will "fire" (or conduct) when its bias is reduced below approx. -1.5 volts, if a plate supply voltage of approx. 250 volts r.m.s. is used.

In operation, R11 is set so that with no output from V4A and V4B, the bias on the thyatron is a little greater than that at which the tube breaks down and conducts. Output from the microphone via V2A decreases the negative bias

on the thyatron, causing it to conduct and operate relay A in its plate circuit, whilst output from the receiver via V2B increases the thyatron's negative bias, preventing it from operating.

It will be seen, therefore, that the settings of the two channel controls, R1 and R2, are to a certain degree dependent upon the setting of the thyatron d.c. bias control, R11.

Relay A in the thyatron plate circuit can be any fast acting type of relay, preferably one having a coil resistance of 1,000 ohms or more; in the writer's case a 2,000 ohm relay coil was used. This relay is shunted by the diode V4B in series with a 3,000 ohm resistor R10. These components are necessary to stop the relay chattering as it releases, due to its operating, as will shortly be explained, in a pulsating d.c. circuit.

If the relay coil resistance varies greatly from 2,000 ohms, it may be necessary to change the value of R10; its value should be kept as high as possible without the relay chattering. Should R10 be removed altogether, as it may have to be in some cases, where a low resistance relay coil is used, the action of the relay will be found to have been slowed up somewhat, due to the low resistance of V4B in its conducting direction shunting the relay. This slowing up will only be noticed on the relay release, not on its pulling up. Note that the diode V4B must be connected as shown and not reversed.

The thyatron circuit must be arranged so that the heater voltage is applied at least 10 seconds before the plate voltage. This was achieved by pressing into service a sick 12AT7 (V5) which still had sufficient emission to hold up a relay.

The heater of V5, wired for 6.3v. operation, is connected in parallel with the thyatron heater, V5 acts purely as a time delay device; any tube could be used in this position as long as it has enough emission to pull in the relay in its plate circuit. R12 and R13 should be varied to suit.

Relay B is not critical and any relay that will operate in the plate circuit of a tube will be satisfactory.

Other methods of obtaining the desired time delay will come to mind, one of which, is if a relay that will operate on only a milliamp. or so is available, it could be wired in series with the + h.t. feed to V1, thus making that tube also perform the time delay function for the V3 h.t. supply.

It will be seen that the thyatron plate feed voltage is a.c. One of the characteristics of thyatrons is that when the grid bias of these tubes is reduced below the critical voltage at which the tube "fires," the grid loses all control over the plate current, irrespective of what voltage is applied to the grid. To bring the tube back to a non-conducting condition, and once more under the control of the grid volt-

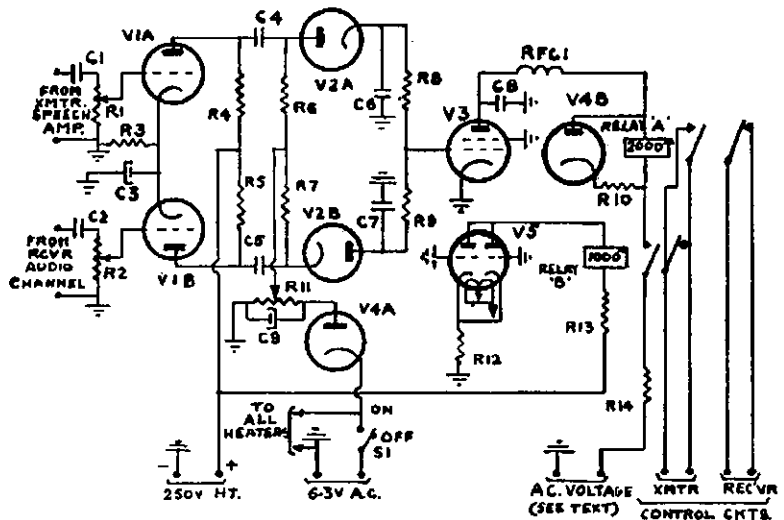


Fig. 1.—Schematic Circuit of Voice Operated Control Unit.

- C1, C2, C4, C5, C6, C7—0.1 uF. 400v. working.
- C3, C9—25 uF. 25v. electrolytic.
- C8—0.02 uF. 400v. mica.
- R1, R2—0.5 megohm pot.
- R3—3,500 ohm 1 watt.
- R4, R5—0.25 megohm 1 watt.
- R6, R7—0.1 megohm ½ watt.
- R8, R9—0.5 megohm ½ watt.
- R10—3,000 ohm 1 watt (see text).
- R11—0.05 megohm pot.
- R12—200 ohm 1 watt.
- R13—12,500 ohm 5 watt.
- R14—See text.
- RFC1—2.5 mH.
- S1—S.p.s.t. toggle.
- V1—6SN7 or 12AU7.
- V2, V4—6H6 or 6AL5.
- V3—2050, 2051, or 2D21.
- V5—12AT7 (see text).
- Relays—See text.

* 90 Dutton Street, Yagoona, N.S.W.

age, the plate voltage must be reduced to zero. The use of an a.c. plate voltage does this automatically, as the voltage drops to zero after each half cycle of a.c. The tube only conducts during the positive half cycles, so that its plate current is pulsating d.c.

From the foregoing, it will be seen that relay A will only remain operated during the period that the bias on V3 grid is less than the critical value at which the tube conducts. When the bias rises to a negative value greater than the critical value, the thyatron ceases to conduct at the end of the positive half cycle of plate voltage during which that value of bias was exceeded.

In operation, it will be found that the tubes are very sensitive and operate reliably.

Thytrons sometimes generate a type of r.f. hash, similar to that produced by mercury vapour rectifier tubes. C8 and RFC1 comprise an r.f. filter to minimise any radiation of this type of interference should it occur. The interference is of little consequence in the Amateur shack as the receiver is inoperative whilst the thyatron is conducting.

The value of R14 will depend upon individual installations, being determined by the a.c. voltage applied to the circuit, and the operating current required by the relay used.

The voltage drop across V3 when conducting is 8-10 volts, irrespective of plate currents within the tube's rating. Telephone type relays on the disposals market usually require a minimum of 10-12 Ma. for satisfactory operation,

and to ensure positive and quicker action can be run at twice that current.

The a.c. voltage for V3 can be obtained from any convenient source, usually one plate of some full wave rectifier. It is recommended that you start with R14 on the high side and reduce its value until satisfactory relay operation is obtained. If an a.c. supply of 50 volts or so is available, then R14 may be omitted completely.

ADJUSTMENT

To put the unit into service initially, set R1 and R2 to zero, adjust R11 to a bias setting just above that at which V3 conducts and operates relay A. Turn the speech amplifier on and talk into the microphone, whilst increasing R1 gain to where relay A operates quickly, each time the microphone is spoken into.

If the relay shows a tendency to be slow in releasing, increase V3 bias slightly by R11 and try a higher gain setting of R1. In cases where a bad lag is found, change C6 to a smaller value, or check the condenser you have used.

Now turn the receiver on and tune in a station at normal operating level, leave the microphone alive. It will be found that the v.o.c. relay will now be operated by the signal from the loudspeaker, picked up via the microphone; increase the setting of R2 until the relay operation ceases, the unit is now set up ready for use.

GENERAL

Should your transmitter and receiver have widely differing audio frequency responses, it may be necessary to change

the value of either C4 or C5, or to connect a small condenser to ground from one of the plates of V1, so that the frequency response of the two signals reaching the two diodes of V2 are similar.

The only front panel controls required are R1, R2, R11 and S1. Some operators may even find that they only need R11 and S1 on the panel.

It is necessary that the relays controlling the transmitter and receiver operate with a minimum of acoustical noise, also the method of muting the receiver must be one which does not produce loud pops in the loudspeaker each time it operates. Failure to meet these two requirements will result in a constant on-off cycling of all the equipment at a rate determined by the mechanical set up of the relays, usually around two or three times per second.

No attempt, other than to show the writer's wiring of his relay contacts, will be made here to cover any switching schemes, as each transmitter-receiver set-up will pose its owner with a different problem. It can be mentioned that the use of an antenna change-over relay, wired in with the rest of the control circuit, has been found satisfactory, the relay used was one from an AT5 aerial coupling unit.

Properly adjusted, this unit will operate with only a barely perceptible cutting of the first syllable of the opening word of a sentence and will release immediately one ceases speaking.

SPECIAL

BRIGHT STAR RADIO are pleased to announce an addition to their line of Crystals. We are now manufacturing—

VACUUM MOUNTED CRYSTALS

for general communication frequencies in the range 3 to 14 Mc.
Higher frequencies can be supplied.

ADVANTAGES OF THIS TYPE—

- (1) Approximately three times the activity of normal plated crystal due to the absence of air damping.
- (2) Better frequency stability due to the absence of air friction.
- (3) Plating cannot deteriorate with time and cause frequency shift.
- (4) Two or more crystals can be mounted in the one envelope and thus save space.

Price depends on the tolerance and frequency required, and will be quoted upon request.

BRIGHT STAR RADIO

46 EASTGATE ST., OAKLEIGH, S.E.12 UM 3387



VK-ZL DX CONTEST, 1955

Phone: 1st-2nd October; CW: 8th-9th October

[Owing to the late arrival of a copy of these rules, it is regretted that they did not appear before this issue.—Ed.]

N.Z.A.R.T. and W.I.A., the National Amateur organisations in New Zealand and Australia, invite world-wide participation in this year's VK-ZL DX Contest.

Objects: For the world to contact VK and ZL stations and vice-versa.

When: Phone—24 hours from 1000 G.M.T., Saturday, 1st October, to 1000 G.M.T., Sunday, 2nd October. C.w.—24 hours from 1000 G.M.T., Saturday, 8th October, to 1000 G.M.T., Sunday, 9th October.

Note:—Duration for all contestants is 24 hours.

RULES

1. There shall be three main sections to the Contest:—

- (a) Transmitting C.w.
- (b) Transmitting Phone.
- (c) Receiving, Phone and C.w.

2. The Contest is open to all licensed Amateur transmitting stations in any part of the world. No prior entry need be made. Mobile Marine or other non-land based stations are not permitted to enter the Contest.

3. All Amateur frequency bands may be used, but no cross band operating is permitted.

4. C.w. will be used for the second week-end and phone for the first week-end. Stations entering for both phone and c.w. sections must submit entirely separate logs for each.

5. Only one contact per band is permitted with any one station for Contest purposes.

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 competitor, and must submit a separate log under his own call sign.

7. **Cyphers:** Before points may be claimed for a contact, serial numbers must be exchanged and acknowledged. The serial number of 5 or 6 figures will be made up of the RS (telephony) or RST (c.w.) reports 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 must be 054, for the third, 055, and so on. If any contestant reaches 999, he will start again with 001.

8. **Scoring:** For VK and ZL stations ONLY—Fifteen points will be scored for the first contact on a specific band with any overseas country; fourteen points will be scored for the second contact on the same band with the same country; thirteen points for the third, and so on to the fifteenth contact, which

will score one point. All contacts with that particular country on that band will thereafter count one point each. This scoring procedure will be repeated on each band to encourage multiband operation. There will be no VK-ZL contacts between each other. Official A.R.R.L. countries list will be used.

NOTE:—Points will not be entered in the log for each contact—totals for each country will be shown in the summary. Each Call Area in the U.S.A. will be a "country" for scoring purposes.

Overseas Scoring: One point will be scored for each contact on a specific band with any VK-ZL district. The final score will be derived by multiplying the total contacts on all bands by the total number of VK-ZL districts worked on all bands. VK-ZL districts are: ZL 1, 2, 3, 4; VK 1, 2, 3, 4, 5, 6, 7, 9.

9. **Logs:** (a) Logs must show in this order—date, time in G.M.T., band of operation, call of station worked, serial number sent, serial number received.

(b) A separate log must be submitted for each band. For each band an analysis sheet must be given showing—list of countries worked with numbers of contacts for each country and points claimed for each country worked and total points for that band.

(c) A summary sheet to show—

1. Station call sign.
2. Name and address of the operator.
3. Phone or C.w.
4. List of points claimed for each band.
5. Grand total of points.
6. Brief description of equipment used during the Contest—transmitter, power, antennae, etc.

(d) A declaration that all Contest Rules and Regulations for Amateur Radio in your country have been observed, and that the log is correct and true to the best of your belief.

10. 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.

11. The ruling of the Federal Contest Committee, W.I.A., will be final. No dispute will be entered into.

12. **Awards:** (a) W.I.A. award certificates to the top scorer on each band, and the top scorer in each VK and ZL district. Awards will be announced independently by W.I.A. and N.Z.A.R.T.

VICTORIAN SCRAMBLE

Victorian Amateurs are reminded that the Bi-monthly Scramble takes place on Monday, 3rd October, 1955, from 2000 to 2200 hours E.A.S.T.

This event has been organised to foster Amateur Radio activity on all frequency bands.

Refer to last month's "A.R." (page 12) for the rules of this Scramble.

Will we be hearing you?

Additional certificates will be awarded depending upon the number of logs received.

(b) **Overseas Stations:** Certificates to the highest scorer in each country (each Call Area in U.S.A.). Additional certificates will be awarded depending on the number of logs received, e.g. certificates may be awarded to the highest scorers on different bands.

13. **Entries from all stations should be post-marked on or before 31st October, 1955, addressed to Federal Contest Committee, Box 1234K, G.P.O., Adelaide, Australia.**

RECEIVING SECTION

1. The Rules for the Receiving Section are the same as for the Transmitting Section, but it is open to all members of a shortwave listeners' society in the world. No transmitting station is permitted to enter for the Receiving Section.

2. The Contest times and logging of stations once on each band per week-end are as for the Transmitting Section. Logs will take the same form as the Transmitting Section.

3. To count for points, the call sign of the station being called, the strength and tone of the calling station, together with the serial numbers sent by the calling station must be entered in the log. Scoring will be on the same basis as for transmitting stations.

4. It is not sufficient to log a station calling CQ.

5. VK receiving stations may log overseas and ZL stations, and ZL receiving stations may log overseas stations and VK stations.

6. Certificates will be awarded to the highest scorers in each country. Extra certificates may be issued, depending upon the number of entries received.

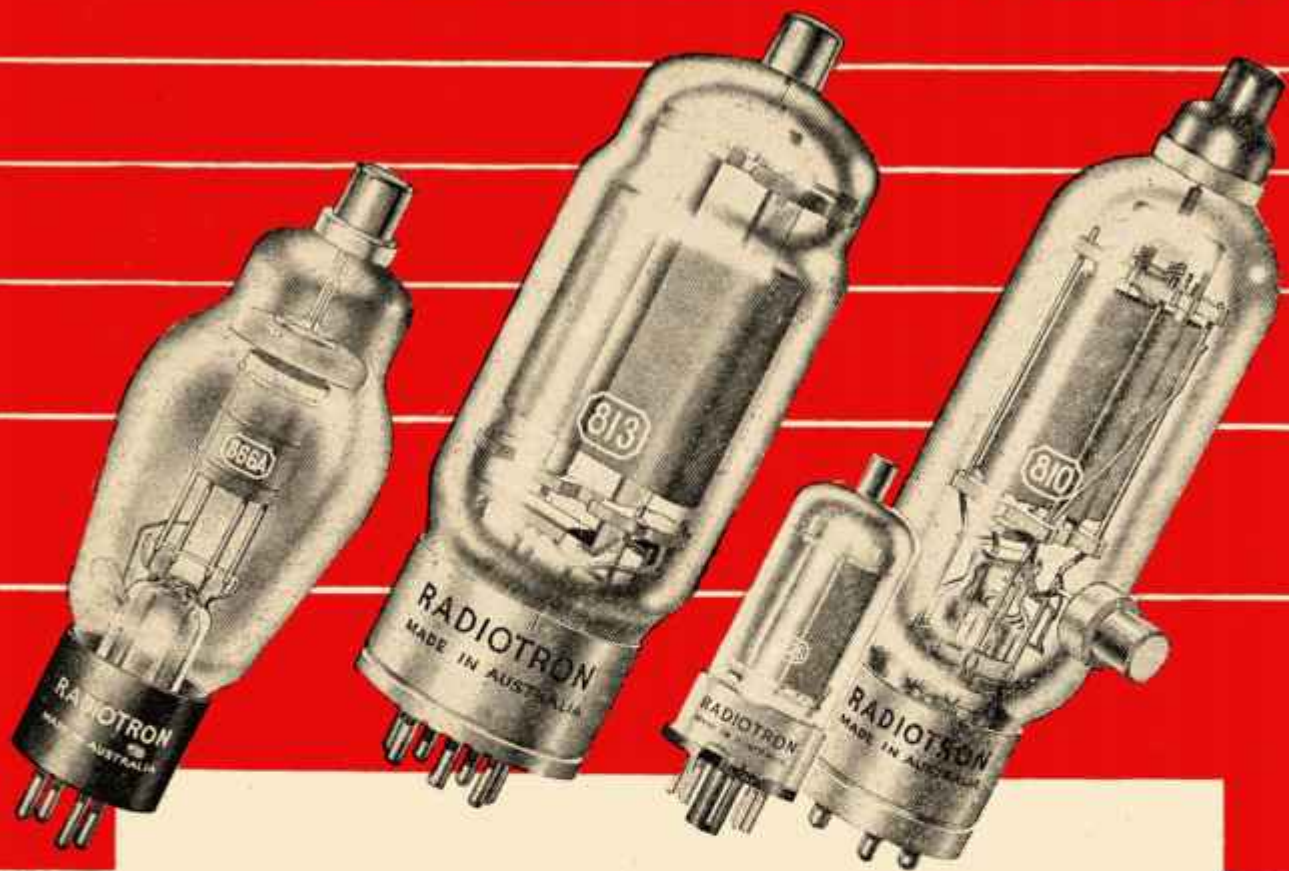
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Be sure of the quality and consistency of your signals by using Radiotron Power Valves.

Important: When ordering valves, be sure to mention "Amateur Radio" so that priority can be given to your order.



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ALL MODELS EXHIBITION, MELBOURNE, 1955

AUGUST 25 saw the opening of the All Models Exhibition, in which the Victorian Division of the Wireless Institute of Australia again participated, at the Exhibition Building, Melbourne. This Exhibition, organised by the Australian Association of Model Societies, under the direction of the Rev. L. L. Elliott, to raise funds for the Victoria Missions to Seamen, featured displays of hobbyists' work with representation by seven societies, e.g., model trains, power boats, aircraft, cars, ship modelling, etc., in addition to the Institute's presentation of Amateur Radio. It is a triennial event and the third one in which the W.I.A. has taken part.

Our exhibit represented the culmination of months of hard work by Len Moncur, VK3LN, and his helpers. This year an International Trade Fair was combined with the exhibition, and over 90,000 people had passed through the turnstiles by the time it ended on September 3. The Institute's exhibit, a photograph of which appears herewith, occupied the main stage of the building. This is a rather difficult position to fill, yet one which lends itself rather well to the striking and commanding display which has always characterised our stand at these shows.

Three large wooden screens covered with dark blue decorative paper were set up in a flattened U shape to the rear of the stage floor, with QSL cards from over 100 different countries arranged in checker board fashion thereon together with notices detailing some Institute activities, surmounted by the heading "The Wireless Institute of Australia." Four small beams continuously rotating on model towers were mounted on the top of the screens. A large representation of a receiver with a knob being turned by a motor driven "hand" indicated the names of various countries through the edge lit dial escutcheon. To the rear, a curtain with sundry decorations provided a backdrop, and the caption "The World at Your Fingertips" hung in a large arc over the receiver. Viewed as a whole, the exhibit had a most noticeable and attractive appearance.

Transmitters for 80, 40, 20 and 2 metres were in operation to provide a demonstration to the public of Amateur communication, and a large amount of equipment, particularly v.h.f. mobile and portable gear, test equipment, etc., from country and metropolitan Amateurs, was on display. Amateur t.v. was featured in a separate enclosure towards the front of the stage. The "novelty" section again attracted much interest and proved popular, too; with the staff happy to demonstrate the intriguing gadgets! It followed the lines adopted at the previous show with some additions, e.g., there was an instrument for checking human reaction time.

A copy of the morse code with a key and audio oscillator which, judging by the noise it emitted, had practically constant use, with young and old lined up and anxious to try their hand at sending. Of topical interest was a transistor audio oscillator and key,

working from a couple of tiny dry cells and providing a surprisingly loud signal to a standard earphone. Photo-electric cell and capacity operated devices, geiger counter, c.r.o.'s, etc.

Those responsible for the l.f. communication section worked hard in the face of the usual difficulties of electrical noise, but with the aid of v.h.f. relaying managed to make 281 local and DX contacts and kept this section running smoothly. Aerials used were a three element beam for 20 metres and dipoles for 40 and 80 metres. These alone represent considerable effort requiring many trips up and down nearly 200 steps and landings and arranging co-ax feedlines about 270 ft. long for each

associates and members the S.w.I. Group who assisted in the preparatory work and general staffing and finally the dismantling of the stand and aerials at the conclusion on the Saturday evening and Sunday morning. Also to Phyl Davies (Mrs. VK3JD) for the colossal job she did towards the running of the exhibit.

To those who signed off with many "final finals" from contacts with VK3WI, but who patiently returned to acknowledge greetings to the members of the public who constantly appeared on hearing a voice from the loudspeakers; to the many Amateurs who made their gear available for the exhibit; for the donations of equipment which were



W.I.A. Victorian Division's Stand at the All Models Exhibition.

aerial down to the stage. Incidentally, it would appear that a home-built low frequency Amateur receiver suitable for conditions such as exhibition operating is still somewhat of a rarity.

The V.h.f. Group, for its 2 metre working, used a three bay turnstile antenna on the roof. Contacts to metropolitan stations, mobiles and a couple of nearer country stations were made without difficulty. A "5 over 5" rotary beam on a mast at one end of the stage, Selsyn controlled from the operating position, demonstrated yet another interesting device to the public. Some contacts also were made using this set-up.

Certificates have been issued to all exhibitors and special VK3WI QSL cards are in the hands of the QSL Bureau for all contacts.

Operating appears to be a very popular duty with the staff, but we must realise that at such a show we have a duty to perform both to the public and to the W.I.A., i.e. to invite questions, explain Amateur Radio, demonstrate gear, etc. Many enquiries were received concerning Institute membership, the A.O.C.P. class, etc., from young and old.

Thanks are due to all those Amateurs, both full licensees and limited,

required on the spur of the moment for some alteration or addition to keep things running smoothly—thanks. Such a show is indeed a credit to the W.I.A. and to Len for his hard work and enthusiasm throughout. Can we keep it up? Yes, of course, but your constant and earnest assistance is necessary. Start building that gear now!!

Please Note the New Address
of the

**INWARDS AND OUTWARDS
VK3 QSL BUREAU**

C/o W.I.A. VICTORIA DIVISION,
191 QUEEN ST., MELBOURNE

As from 1st October, 1955, all QSL Cards for VK3 will be handled from the Victorian Division's rooms at the above address.

QSL Bureau Managers and members are requested to forward all future cards and correspondence to VK3 QSL Bureau, C/o W.I.A. Victorian Division, 191 Queen Street, Melbourne.

Are You Complacent About TVI?

BY ROBERT H. BLACK,* VK2QZ

IT will not be many months before television broadcasts begin in some of the major capital cities. In the United Kingdom and the United States the advent of television has caused severe restriction on the full enjoyment of Amateur activities; unless we take preventive measures the same will apply in Australia.

It is the duty of all Amateurs to put their house in order before these transmissions begin. With this end in view an educational programme dealing with television, t.v. receivers, t.v.i. and its prevention and cure has been commenced in the N.S.W. Division on the advice of its B.c. and T.v.i. Committee. We have been fortunate in having the services of Max Sobals, VK2OT, and Norm Beard, VK2ALJ, both lecturers at the Petersham Technical College. This programme is now well under way.

Figures from overseas show that Amateur transmissions cause a very small percentage of the total amount of t.v.i., but when the figures are viewed from the Amateur point of view it has been found, in some areas, that more than one half of Amateurs have had t.v.i. trouble before curative measures were applied.

A survey of b.c.i. has recently been made amongst the Sydney members of the W.I.A. Now, you would think that b.c.i. was a thing which should not trouble anyone these days—we've had years of experience with it and know all about its cause and cure. Well, have a look at these figures obtained from a questionnaire given to members at the Divisional and V.h.f. Group meetings in August, 1955.

1. Incidence of b.c.i. by band and power input.

| Band | No. using Band | Mean Power Input | Permanent No. | Mean Power | B.c.i. Cases Inclusion % |
|--------------|----------------|------------------|---------------|------------|--------------------------|
| 80 | 21 | 56 w. | 2 | 50 w. | 10 |
| 40 | 36 | 58 w. | 5 | 73 w. | 14 |
| 20 | 40 | 65 w. | 4 | 70 w. | 10 |
| 15 | 11 | 76 w. | 2 | 75 w. | (20) |
| 10 | 7 | 80 w. | 1 | 88 w. | (14) |
| 6 | 12 | 58 w. | 0 | — | (0) |
| 2 | 34 | 33 w. | 1 | 88 w. | 3 |
| Total | 161 | | 15 | | 9.3% |

Incidence of permanent b.c.i.—

| | |
|-----|-----|
| HF | 12% |
| VHF | 2% |

2. Incidence of b.c.i. causing limitation of Amateur activity.

8 of 62 (13%) in the group suffer at the present time from limitation of activity due to b.c.i.

3. Type of transmission causing b.c.i.

| | |
|----------------------|---|
| Amplitude modulation | 8 |
| Phase modulation | 1 |
| CW | 1 |

4. Relations with the complainant and P.M.G. Department notification.

| Relations with the Complainant | P.M.G. Notified | |
|--------------------------------|-----------------|-----|
| | No | Yes |
| Good | 4 | 0 |
| Bad or indifferent | 0 | 3 |

One case was reported to the P.M.G. Department, but relations with complainant not stated.

5. Previous history of b.c.i.

Of the 62 Amateurs completing the questionnaire, 16 (25%) had had b.c.i. which they had cured. Two of the group have amicable b.c.i.

The method of cure of the b.c.i. has been:

| | |
|------------------------|----|
| Transmitter adjustment | 5 |
| Receiver adjustment | 13 |
| Unstated | 1 |

6. Incidence of past and present b.c.i.

Of this group of 62 Amateurs, 21 (34%) have or have had b.c.i. trouble. If the two cases of amicable b.c.i. are added, this figure rises to 23 of 62 (37%).

We can draw some conclusions from the results of this survey, remembering, of course, the population from which the figures were obtained: One in three Amateurs have had b.c.i. at some time or another or still have it; 10% of Amateurs are restricted in their enjoyment of Amateur privilege because of b.c.i. which they have not cured. This permanent trouble is mainly confined to those using the h.f. bands and is almost absent from the v.h.f. bands. Look at what happens when the P.M.G. Department is notified! Finally, b.c.i. is not necessarily associated with the use of high power, except perhaps on 2 metres.

Now, there are two in this group who live in amicable relationship with their neighbours though still causing b.c.i. for which no cure has been requested. If it were t.v.i. this happy circumstance would not continue. It appears that interference with the t.v. picture will upset your neighbour much more than your voice coming in on his favourite b.c. programme—compare the large number of amateur art critics with the small number who dare to give an opinion on music!

One in three of the group surveyed have had b.c.i. trouble. You may be sure that the proportion who will suffer from t.v.i. trouble will not be smaller unless active steps are taken in its prevention.

Prevention depends in the first place upon an educational programme for Amateurs so that they can bring themselves up to date with transmitter construction practice in this television age. The Amateur must put his own house in order. This educational programme can be supervised by the State B.c. and T.v.i. Committee; the more prevention is instilled into the Amateur, the less will be the curative work required later. This is the approach of the B.c. and T.v.i. Committee of the N.S.W. Division.

In the second place, we look to the Federal Amateur body to do all that is possible to ensure that there are certain minimum standards of quality required for t.v. receivers, and that other relevant technical and legal details are brought to the notice of the appropriate governmental body.

Will your transmitter be free from t.v.i. troubles when the first broadcast comes on the air? We can solve this t.v.i. problem, but only if we are fully aware of the urgency of the matter and get ourselves organised before it occurs.



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AMATEUR CALL SIGNS

FOR MONTH OF JULY, 1955

NEW CALL SIGNS

- VK—**
2AVE—C. W. Meech, Officers' Mess, R.A.A.F. Base, Uranquinty, N.S.W.
Victoria
3LC—A. W. H. Chandler, 36 Seymour Ave., Malvern, S.E.3.
3OS—R. O. Scott, 38 Grey St., St. Kilda.
3YY—N. S. Smith, 14 Durham Rd., Surrey Hills, E.10.
3AGA—M. N. Russell-Clarke, 127 Manningham St., Parkville.
3ANH—J. C. Humphreys, Station: Miner's Rest, via Ballarat; Postal: Staff, R.A.A.F., Ballarat.
3ZBC—A. K. Hore, No. 8 Married Quarters, R.A.A.F., Ballarat.
3ZBY—A. L. Morrison, 72 Park St., 5th. Yarra.

- Queensland**
4DK—J. A. Kelly (Dr.), District Hospital, Ayr.
4FR—W. R. Franzl, 24 Mary St., Innisfail.
South Australia
5LP—R. L. Paech, 66 White Cres., Seacombe Gardens.
5ZBK—E. J. Kenny, 5 Perth St., Ferryden Park, Adelaide.

- Territories**
2AS—J. A. Whittaker, Station: A.P.C. Station, Morehead River, via Rokie, T.N.G.; Postal: Seismic One, C/o. Aust. Petroleum Co., Port Moresby, T.N.G.

CHANGES OF ADDRESS

- VK—**
2KW—L. D. Wilson, Lot 10, Ross St., Epping.
2QG—R. C. B. Lillie, 6 Grandview Gr., Seaforth.
2XO—J. M. Retailick, 248 High St., Coffs Harbour.
2AAQ—R. E. Hookway, Campbell Hill Rd., Chester Hill.
2AEJ—J. W. Smith, 260 Lakemba St., Lakemba.
2AJP—J. Weaver, 20 Coromandel St., Goulburn.
Victoria
3KI—T. P. Kirby, 79 Normanby Rd., Kew.
3AJU—W. D. Guild, C/o. Bedford Looker Rd., Montmorency.
Queensland
4XH—H. A. Perkins, 98 Queens Rd., Hermit Park, Townsville.
South Australia
5AF—A. S. Little, 2 Martin St., Northfield.
5CT—C. Hewitt, 31 Darlington St., Clearview.
Territories
9TZ—C. D'Evelynes, Rugli, via Baiyer, via Lae, T.N.G.

CANCELLED CALL SIGNS

- VK—**
2BB—A. H. Brown.
2RJ—J. C. Bray.
2SN—M. C. Griffin.
2VO—C. J. McPherson.
2AAS—J. A. Whittaker. Now VK9AS*.
2AGS—A. G. Sabin.
2AHO—G. J. Parker.
2AND—B. H. Anderson.
2ALA—A. G. H. Robertson.
2AT1—Newcastle Technical College.
3EG—I. V. Miller.
3FP—R. A. H. Russell.
3FD—D. Burkitt.
3NS—S. E. Levings.
3ZN—M. S. Israel.
3ACF—V. C. Forbes.
3AIK—J. B. Kelleher.
3APT—P. J. Tozer.
3AXM—E. J. Mulholland.
4DW—C. D. Wright.
4IC—M. N. Russell-Clarke. Now VK3AGA*.
4PM—C. W. Meech. Now VK2AVE*.
5FR—W. R. Franzl. Now VK4FR*.
6XE—F. H. Doherty.
 *See New Call Signs.

FOR MONTH OF AUGUST, 1955

NEW CALL SIGNS

- VK—**
2EG—W. J. Storer, 39 Ika St., Leichhardt.
2ER—P. C. James, 12 Stanley St., Chatswood.
2SN—M. C. Griffin, 183 Clarinda St., Parkes.
2AJQ—J. W. S. Edge, Wallace St., Coolamon.
2AKC—J. C. Kearnes, Post Office, Tomingley.
2APW—A. F. Pyett, 357 Maroubra Bay Rd., Maroubra.
2ATV—K. L. Green, Keats St., Byron Bay.
2ATY—E. H. T. Burt, 35 Paul St., Auburn.
2AUK—J. K. Fullagar (Dr.), 420 Orange Grove Rd., Booker Bay, via Woy Woy.
2AZG—J. R. Grouse, Brent St., Boggabri.
Victoria
3JP—W. J. Carlyle, 21 Purcell St., Benalla.
3SU—S. G. Edwards, R.A.A.F., "Frognall," via Canterbury, E.7. Vic.
3AJV—K. G. Avery, 426 St. Kilda Rd., Melbourne.
3AQH—L. W. Hoobin, Heatherset Rd., Sassafra.
3AXU—C. A. Cullinan, Snr., 6 Grant St., Colac.
3AYS—G. S. B. Horrocks, 31 Stockdale Ave., East Bentleigh.
3ZAI—J. L. Occolowitz, 128 Gaffney St., Coburg.
3ZBN—G. A. Lane, 12 O'Shannessy St., Nunawading.
3ZBP—E. D. Alexander, Station: "Wahroonga," Beaufort Rd., Skipton; Postal: Box 15, Skipton.
3ZBU—N. R. Dench, 27 Glenbervie Rd., Strathmore.

- 3ZBV**—J. Quigg, 29 Alamein St., Morwell.
3ZBX—J. R. Wales, 24 Park Lane, Mt. Waverley.
Queensland
4PJ—P. J. Chapman, 63 Bundoch St., Belgian Gardens, Townsville.
South Australia
5CW—W. C. Clifton, 11 Heathpool Rd., Heathpool.
5HR—W. L. Heinrich, 17 Roslind St., Kensington Gardens.
5ZBT—G. L. Taylor, 224 Goodwood Rd., Millswood Estate.
Western Australia
6EA—A. A. Entwistle, 22 Charles St., Midland Junction.
6ZAN—R. J. Skevington, 19 Bedford St., East Fremantle.
Tasmania
7ED—W. E. Bovis, "Skipton," West Tamar Rd., Tatana.
7WT—R. A. Milledge, 16 Winmarleigh Ave., Taroon.
Territories
9TZ—C. D'Evelynes, Rugli, via Baiyer, via Lae, T.N.G.
9XK—S. R. Coleston, C/o. D.C.A., Port Moresby, T.N.G.

CHANGES OF ADDRESS

- VK—**
2AM—D. G. Cuffe, 1 Caroola St., St. Ives.
2LY—H. C. Crisp, 449 Orange Grove Rd., Orange Grove, via Woy Woy.
2MU—L. J. Case, 37 Beach St., Woolongong.
2OX—J. Stewart, 53 Burwood Rd., Billfield.
2SJ—G. A. Cliphsham, Denison St., Finley.
2TC—H. J. Taylor, "Eastdene," Bunda Noon.
2WP—W. F. Potter, 2 Patricia Ave., Charles-town.
2AGR—A. Hughes, 10 Seaton Ave., Wahroonga.
2AHW—H. T. J. Stone, C/o. O.T.C.A. Radio Station, Bringley.
2AQW—J. S. Walker, 19 Lower Wycombe Rd., Neutral Bay.
2ASB—S. E. Brown, 12 Denman St., Yarralomba, A.C.T.
2AVT—V. E. Tierney, 6 Beach Rd., Edgecliffe.
Victoria
3DQ—C. S. Donoghue, 51 Bourneville Ave., East Brighton.
3QN—P. E. Maplestone, 42 Berkley St., East Oakleigh.
3ACV—J. T. Wilson, Bucknall St., Carisbrook.
3AJU—W. D. Guild, Block 237, Red Cliffs.
3ALZ—I. F. Berwick, Station: Lot 35, Loongana Ave., Glenroy; Postal: 19 Martell St., Moonee Ponds.
3APK—P. C. Perkins, Clifford Farm, Mt. Moriac.
3ARI—R. M. Tutton, 206 Stewart St., East Brunswick.
3ASH—R. R. Elkin, 496 Moorsbool St., South Geelong.
3AVZ—North Suburban Amateur Group, 6 Sylvester Gr., East Preston.
3AWJ—D. J. Williams, 8 St. Hubert's Rd., East Ivanhoe.

- Queensland**
4CW—J. Worth, Station: "Amshak," Sydney St., Bundaberg; Postal: Box 254, P.O., Bundaberg.
4PR—W. J. Rafter, 25 Willandra St., Alderley.
4WD—W. G. Dodd, 34 Lloyd St., Brighton, Brisbane.
South Australia
5AE—F. A. Eastick, Station: 148 Bath St., Alice Springs; Postal: C/o. P.O. Alice Springs.
5BJ—M. Bradley, 3 Coppin St., Dunleath Gardens.
5BX—A. L. Saunders, 2 Murdoch Ave., Plympton.
5ET—E. Van Tijn, Woodburn Ave., Blackwood.
5FF—R. F. Farmer, 18 Googona St., Woomea.
5HJ—H. J. Champion, 18 Tarranna Ave., Ascot Park.
5ZAA—I. B. Wall, 34 Church Ter., Walkerville.
Western Australia
6SK—A. A. Skinner, 106 Prinsep St., Norseman.
6WL—L. McGeoch, White St., Brookton.

CANCELLED CALL SIGNS

- VK—**
2EC—E. C. Crouch.
2KJ—K. C. Avery. Now VK3AJV*.
2TZ—C. D'Evelynes. Now VK9TZ*.
3EA—E. Anderson.
3KG—K. L. Green. Now VK2ATV*.
3KK—S. R. Coleston. Now VK9XK*.
3XQ—A. Baldock.
3ZQ—H. K. Hutchinson.
3AAC—W. C. Clifton. Now VK5CW*.
3AFU—J. K. Fullagar (Dr.). Now VK2AUK*.
5CR—C. R. Cheel.
6GS—G. S. B. Horrocks. Now VK3AYS*.
6RE—R. F. Carville.
7XW—C. A. Cullinan, Snr. VK3AXU*.
1EG—W. J. Storer. Now VK2EG*.
9AB—A. Bunting.
 *See New Call Signs.

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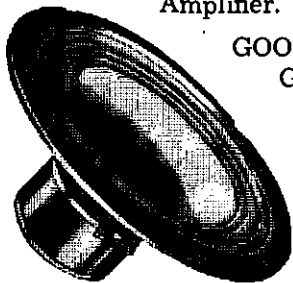
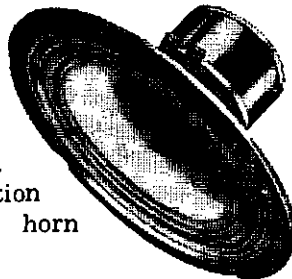
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DX ACTIVITY BY VK3AHH†

PROPAGATION REPORT

3.5 Mc.: Some good break-throughs were observed to a number of continents. Conditions to South Africa and Europe existed between 1900z and 2100z, while the North American continent was represented around 0730-1100z.

7 Mc.: Conditions on this band were in accordance with what can be expected for this time of the year. Europe was available on both the short path (1800-2200z) and long route (0800-0800z). Times for North America, the Pacific Islands, and the Far East were also quite normal (0800-1400z).

14 Mc.: The improved general conditions on this band held throughout the month of August. Long-path conditions to Europe (0500-0800z) were predominant, while North American stations appeared to be workable during the entire 24 hours. Long-path conditions to North America were noticeable between 2200z and 0000z.

21 Mc.: This band showed openings to North America and the Pacific Islands in the usual manner. Times were for North America 2300-0400z and for the Pacific Islands 2200-0700z, approximately.

27/28 Mc.: No reports were received on these bands.

NEWS AND NOTES

ZC5CT is expected to stay in British North Borneo for four months. He has been heard on 14 Mc. phone. (from WIA-L3007)

Comoro Island is supposed to be on the Amateur Radio map under the prefix FB8. Details will be given as soon as they become available. (from the N.C.D.X.C.)

AC3PT is reported to be active on 14100 Kc. phone, but changes to c.w. on request. (from S.C.D.X.C.)

OY7ML should now be active on 7020 Kc. (from 2AMB, ZL3KN)

Single sideband suppressed carrier operation is gaining more and more friends. There is no doubt that its DX efficiency is by far better than that of normal modulation. In this country as well as overseas a small percentage of Amateurs have been specialising in this field. Recently VK3WR contacted CP5EF on s.s.b., which is believed to have been the first two-way s.s.b. QSO between Bolivia and Australia. Congratulations!

Here is more comprehensive news on XW8AB. The operator is Marcel Zinck, ex-DL5BS. His operating frequencies are 14000, 14012, 14050, 14080, and 14100 Kc. Apparently, his correct address is now Box 165, Vientiane, Laos. (from 3AHM, N.C.D.X.C.)

BV1US replies to QSL cards on receipt. His frequency is 14250 Kc. where he uses phone only. (from N.C.D.X.C.)

Egypt is represented by SU1IC around 14050 Kc. (from N.C.D.X.C.)

Please do your part in the clean-up of our bands! Keep those reports on b.c. and other commercial stations operating in exclusive Amateur bands rolling in!!

QTHs OF INTEREST

(From 3JA, 3AHM, N.C.D.X.C., S.C.D.X.C.)
 SU1IC—Ibrahim M. Charmy, 1 Mohamet Pasha St., El Aguz, Egypt.
 BV1US—M/Sgt. G. Carlson, R.A. 33036702, Army Sect.-Formosa, A.P.O. 63, San Francisco, U.S.A.
 OY7ML—Martin Hassen, Box 184, Thorshaven, Faroer Islands.

† Hans J. Albrecht, 10 Belgravia Ave., Box Hill North, E.12, Vic.
 * Call signs and prefixes worked.
 ‡—zero time—G.M.T.

VQ3FS—Tierueq, Box 118, Jinja, Uganda.
 FY7YE—via W4ML.
 EA9DF—Adolpho Perez Real, Box 213, Melilla, Spanish Morocco.

ACTIVITIES

3.5 Mc.: Laurie 2AMB reports VK9AU, and Kel 8AEP follows with W7C around 0730z. Glen 3ZBJ heard KL7 on phone. Eric BERS195 mentions VK9AU, and 3AHH heard Europeans and ZS's.

7 Mc.: 2AMB reports on c.w. G6TC*, JA8AE*, C08FH*, KV4BK*, LU1EAJ*, LU4HU*, LUSYD*, DU7SV*, VE8*, KP4CC* and C08EN, KM6AX, XE2OK, KP4ZC, and on phone VR2CG*, KC6CG*, HP3FL*, and ZM6AR. Neville 2APL worked VE3*, and Jack 8WR phoned with HP3FL*. Tim 3ZBO heard JA1-5-6-8, VE2, VE3, DU7SV, YJ1AA, KL7s, KM6AX, KJ60J, ITBU VP2, BERS195 adds Europeans C06PP, KP4KD, KP4ZC, KR6LJ, KL7AKE, KM6AX, DU7SV, KZ5CS, XE2OK, YJ1AD. Dave Jenkin reports KP4CC, VE3, JA8AE, VP5DC, DU7SV, VE2, KM6AX, KP4BU, VE3PK, DU9WX, and LA1CB.

14 Mc. C.w.: 2AMB: DL6GP*, ON4FU*, G6VQ*, and XE2MJ. Jack 3JA: CS3AC*, DL3DU*, DL4EU*, DL1EE*, F3DM*, F3AD*, F8WK*, F8KS*, FKUAL*, FK5AH*, G6TM*, G6XK*, G6DQC*, HB1KU/HE*, KW6BS*, PK1EK*, VU2JG*, YU2HU*, ZS2ND*, ZS1BK*, ZS6CY*, ZC4PB, ZD2WAF*, ZS5L, YJ1DL, FASZ*, VR2CW*, 954AX*, F3BR*, ON4SN*, ON4FU*, 3R8AB*, VQ6AE*, ZB2I*, QD5AB*, Ivor 3XB: OE*, Allan 3AHM: XW8AB*, HB1KU/HE*, YU4BN*, John 5HI: ZS2BC*, DL1EE* and G6*, BERS195: CS3AC, CT1JS, DU1OR, DU1VQ, DU7SV, DL1HH, CE3DZ, FK8AB, FK8AH, FK8AQ, KJ6BH, KJ6FAB, KL7ADR, LUSJF, LUBXA, PA0BS, VR2BZ, VR2CS, YJ1DL, VS2EL, DJ1BZ, E13C, SM5AKH. Dave Jenkin: CR7AF, PJ2AV, DU7SV, DU3DO.

14 Mc. Phone: 2AMB: ZM6AT, 2APL: KW6BO*, Neil 3HG: CQ2BL*, 5A2TL*, G6*, KL7ML*, OE5JK*, SP3AK*, CN8EJ*, CT1IC*, TG9TU*, VE2*, DL7AG* and W6* over the long path. 3JA: CQ2YZ*, DL4XK*, EA9AZ*, FK8AB*, KG1AA*, HBVDV*, LIAMU*, XE2NT*, ZS6OY*, ZS2FA*, ZS2ND*, VS6CW*, ZS2BC*, TG9TU*, IIMD*, IIMT*, G3BM*, F8CH*, F8HC*, OHSNW*, GM3DHD*, OH6QI*, OH2OV*, OH3QN*, SM5MR*, OH5NK*, G2AMG*, LA5YE*, OH5SS*. Stan 3TE: CN8MM*, CO1AF*, ITBU*, KL7s*, KTIWX*, OHSOP*, PJ2CA*.

XE1DU*: Jack 3WR: CP5EF*, Harold 3AHC: CN8MM*, VQ4EO*, 5A4TX*, I1AMU*, I1ZCT*, ON4RC*, EA5E*, SM6SA*, HB9LU*, G3GYH*, CN8FI*, KL7s*, KA*, KX6*, KP4ACI*, VS2EW*, KR8AF*, CO1AF*, F3DJ*, F7AH*, YV5DL*, YV5AO*, KH6*, VS6BE*, KTIWX*, OH5OP*, OH1PN*, G6BS*, SM5RY*, G3DPJ*, I1CTE*, G6XL*, KZ5CS*, HC1EP*, Austin 5WO: CQ2CY*, G2HFO*, I1WN*, I1ZCT*, IIMD*, ZS15W*, ZS6CV*, ZS6YW*, ZS6AFA*, OQ5AO*, BERS195: KJ6FAB, VS6BE, VS6CW, ZM6AT, Ian WIA-L3007: I1BEM, KL7s, KJ6BG, MS4PB (?), ZC5CT.

21 Mc.: 2APL: KH6*, W5*, W6*, W0*, and VR2CG. Dave Jenkin: KH6, W7, W5.

27 and 28 Mc.: No reports have been received.

Rare QSLs were received by: 2AMB: COTPG, FK8AC, 3JA: KG1AA, C2ACK, KM6AX, 5WO: OD5LX, 5A4TK, MP4QAH, KV4BE, KG4AF, CN8MM, OA4ED, SA3TZ, BERS195: KJ6AZ, KP4YT, VS1GP, ZS3AC, ZC5CV, ZS6PM.

Thanks to W6YY, the Northern and Southern California DX Clubs, and VKs 2AMB, 2APL, 3HG, 3JA, 3TE, 3WR, 3XB, 3AEP, 3AHC, 3AHM, 5HI, 5RK, 5WO, 3ZBJ, 3ZBO and BERS195, WIA-L3007, Dave Jenkin.

Low Drift Crystals

FOR AMATEUR BANDS

ACCURACY 0.02% OF STATED FREQUENCY

3.5 Mc. and 7 Mc.
 Unmounted £2 0 0
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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. ries | Call | Cer. Cnt- No. ries |
|-------|-----------------------|--------|-----------------------|
| VK3BZ | 3 176 | VK3ATN | 28 153 |
| VK4HR | 12 176 | VK4KS | 9 152 |
| VK6RU | 2 168 | VK6KW | 4 150 |
| VK4FJ | 21 164 | VK3LN | 11 141 |
| VK3EE | 10 163 | VK4RW | 23 141 |
| VK3JD | 1 155 | VK3AWW | 14 140 |

New Members

| | | | |
|-------|--------|-------|--------|
| VK9DB | 31 105 | VK7RX | 32 107 |
|-------|--------|-------|--------|

C.W.

| Call | Cer. Cnt- No. ries | Call | Cer. Cnt- No. ries |
|-------|-----------------------|-------|-----------------------|
| VK3BZ | 6 222 | VK3CX | 28 175 |
| VK3FH | 15 205 | VK5BY | 45 172 |
| VK4HR | 8 200 | VK2EO | 2 170 |
| VK3KB | 10 200 | VK5RX | 23 159 |
| VK4FJ | 29 191 | VK6RU | 18 158 |
| VK4EL | 9 175 | VK5BO | 33 157 |

OPEN

| Call | Cer. Cnt- No. ries | Call | Cer. Cnt- No. ries |
|--------|-----------------------|-------|-----------------------|
| VK3BZ | 4 231 | VK2NS | 16 185 |
| VK2ACX | 6 225 | VK3HG | 3 181 |
| VK4HR | 7 214 | VK4EL | 10 175 |
| VK4FJ | 32 206 | VK6KW | 13 171 |
| VK6RU | 8 203 | VK2DI | 2 170 |
| VK3JE | 12 198 | VK4DO | 15 168 |

New Members

| | |
|-------|--------|
| VK7RX | 60 112 |
|-------|--------|

Amendments

| | | | |
|--------|-------|-------|--------|
| VK2ACX | 8 225 | VK9DB | 39 139 |
|--------|-------|-------|--------|

SHORT WAVE LISTENERS' SECTION*

VICTORIAN S.W.L. GROUP'S FIRST ANNUAL REPORT

It is now 12 months since the Short Wave Listeners' Group was formed within the Victorian Division. August, 1954, saw the first meeting in the Institute Rooms, when some 30 interested persons responded to an invitation to attend the inaugural meeting which successfully launched the Group. A monthly meeting was decided upon and was arranged for the last Tuesday in each month. This has provided members with a useful period each month to hear and to discuss activities during the previous month. Over the year these meetings have afforded members the opportunity of hearing an excellent series of lectures by the Secretary, Gerry Lane, on short wave listening, a very interesting demonstration by the V.h.f. Group and a demonstration of the beam antenna on v.h.f. A construction evening provided members with an evening to devote themselves to building new equipment or to watch others, thus providing others with ideas and evaluating the performance of their respective apparatus.

The S.w.l. Notes were inaugurated in "Amateur Radio" and your correspondent, John Wilson, has done a fine job with the little help from members. Unfortunately this page has received little support from members. It was for your benefit that the notes were commenced and it is hoped that your support will be more in evidence for this coming year. Your report, no matter how small, will be welcome, so chaps send in your monthly log. Your contribution will be acknowledged each month in the columns.

The first Contest was run during January and March, 1955, with three months for collection of QSLs. The response was disappointing, however those taking part were fully rewarded for their efforts. A new Contest was announced for September, 1955.

* Compiled by John Wilson, WIA-L3004, 37 Rayment Street, Alphington, N.20, Victoria.

In February a visit to the Australian Broadcasting Commission studios in Melbourne was arranged when a large party had an interesting time seeing for themselves what goes on behind the microphone. Further visits to places of interest will be arranged during the coming year.

Since the Group was formed, four members have obtained their Limited Licenses—David Rankin, VK3ZAQ; Ian Woodman, VK3ZBI, David Tanner, VK3ZAT, and recently, Secretary Gerry Lane, VK3ZBN. They are to be congratulated on their success. Our aim is to be a breeding ground for Amateurs and in the first twelve months we have made a good start.

Mention must be made of our enthusiastic members, Geoff Morris and Frank Nolan. These chaps have a great handicap in being blind, but their enthusiasm and excellent monthly reports are an inspiration to all members. It is indeed a pleasure to have them in our Group.

Finally I wish to thank each and everyone for their support and interest during the year. To Arthur 3AHD (who has been available at each meeting for advice and operation of 3WI), Ron 3OM, Col 3FO and others whose names and calls escape my memory—thank you chaps. Thanks also for all those on the executive for their co-operation during the year. Especially Secretary Gerry Lane, whose help and interest during the year have contributed towards the success of the Group. Thank you for re-electing me for the next year and I trust that the ensuing 12 months will see us grow still stronger.

Our strength is now 28 financial members and seven unfinancial members—I trust the latter will do the right thing. Your official numbers are available only to the financial members. We hope to see more and more become members. Bring your friends along to the meetings!

Our best wishes to the Groups in VK5 and other States contemplating forming Groups—VK4 and VK2. It is hoped other States will follow suit.

—Leonard Poynter, President.

VICTORIAN GROUP'S MEETING

This Group met in the club rooms, 191 Queen Street, Melbourne, on the last Tuesday of August and those present were allotted nights of duty at the VK3 Division's stand at the All Models Exhibition. To all the s.w.l.'s who gave assistance at the show we give you a big thank you for helping out.

A big welcome is extended to Ted Bayley, of 799 Macarthur Street, Ballarat. We welcome you to the VK3 Division and hope to hear lots of news from you. Ted uses a 9 tube Halli-crafters Sky Champion, beam is a W8JK, and he is also interested in 144 Mc. Ted, all the best of DX for the future!

SOUTH AUSTRALIAN S.W.L. GROUP

From WIA-L5004 we received a report of the last VK5 meeting. This meeting was held at the Central Methodist Mission room with an attendance of 10. Len took along his Eddystone receiver and tuned across the bands for all to hear.

HEARD ON THE BANDS

21 Mc.: Not so active.
14 Mc.: Very active between 1500-1700 EST and 2200-2330 EST. Ted Bayley reports hearing YV5, ZL1-2-3, W0-6-7, VR, VK1-9, YJ1, and KL7. From WIA-L5004: 457, DUI, JAI-2-3-6, KAO-2-3, KC6, KH6, KL7, KP1, KR6, KW6, KZ5, VE5-6-7, VR2, V56, VU7, W0-2-4-6-7-8-9, Y9B, YV4, ZL1-2-3-4, ZM6, ZS1. Tom Osborne heard VE7, VR3, KA3, G5, ZM6, KP4, VK1.
3.5 Mc.: WIA-L3004 reports hearing ZL, VK2-3-4-5-6-7-8, JA. WIA-L5004: ZL1-2-4, VK1-9.

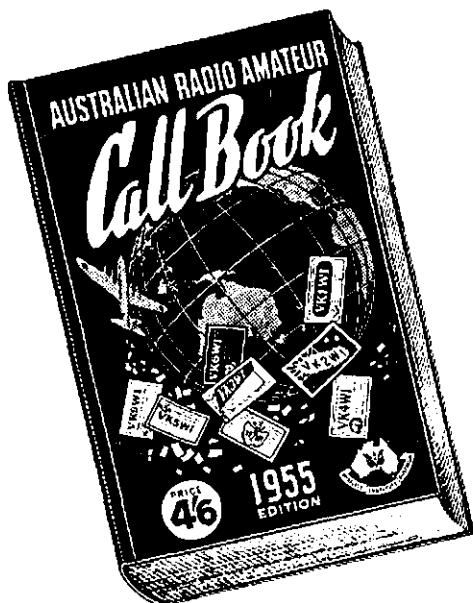
BROADCAST SHORT WAVE

Tom Osborne, WIA-L3022, reports Radio Thailand on 11.7 Mc. at S6 from 2045-2115 EST. Radio Ceylon 9820 Kc., S3-4, 2300 EST. Voice of Indonesia, 9710 Kc., S7, 2100 EST. Tokyo, 11750 Kc., S6, 1900 EST. Switzerland, 11865 Kc., S8, 1700 EST. VOA, 11790 Kc., S7, 2000 EST. United Nations, 9600 Kc., S7, 0630 EST. HCJB (Quito), 11915 Kc., S7, 1800 EST. VOA (Los Angeles) in the 19 metre band, with musical programme called "Music Line U.S.A." from 1730-1800 EST, strength 7-8, call sign is KCBR and KNGH.

Canada has changed its programme times from 1845 EST to 1830 EST, and now transmits the usual half-hour daily programme from 1830-1900 EST on stations CKLO (9.63 Mc.) and CKNA (5.97 Mc.) to Australia and New Zealand.

S.W.L. MAGAZINE REPORTS

If you tune your receiver across the bands at any time during your leisure, write down what you hear, even if you only listen for five minutes, and send your loggings to John Wilson, 37 Rayment Street, Alphington, before the first of each month.



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SOUTH WESTERN ZONE W.I.A. VK2 CONVENTION

to be held at
ALBURY

on
1st and 2nd OCTOBER

Programme:

Saturday, 1st October—
Tour of Hume Weir.
Catered Dinner, Saturday night.
Films, Pick-a-Box, and other competitions.

Sunday, 2nd October—
Transmitter Hunts on 144 and 3.5 Mc. bands.
Auction of Disposals gear.
One Hour Scramble.
Blindfold Transmitter Hunt on 144 Mc. band.

Further information can be obtained from VK2RS at Albury, or VK2AJ0 at Coolamon.

FIFTY MEGACYCLES AND ABOVE

FREQUENCY CHANGE FOR FIFTY MEGACYCLES BAND

56-60 Mc. available as from 1st November, 1955!

50-54 Mc. closes on 31st January, 1956!

NEW SOUTH WALES

At the last meeting of the V.h.f. Group, Dr. Bill Davis, of the C.S.I.R.O., delivered a lecture on the growing of Transistors. All present voted the lecture enlightening and instructive. A vote of thanks was given to Dr. Davis by Barry 2ZAG. Many specimens of different transistors were shown to the meeting and also a complete broadcast tx, which performed very well. There were 45 members present.

A night Hidden Tx Hunt was held on Wednesday, 31st August. 2ANF was the hidden tx and there were seven car loads of searchers out. The tx was found by 2LG/M, 1st, in 56 mins.; 2HL/M, 2nd, 58 mins.; 2AFM, 3rd, 76 mins. The start was made at Burwood Park at 8 p.m. and the tx was found on the northern side of the Sydney Harbour, at a place called Manns Pt. The distance from the starting point and the tx was 12 miles. This night proved to be most enjoyable and finished up with supper.

A most interesting Field Day is to be held on 11th Sept., when experiments will be conducted to prove the practicability of Slave Antennae. These are known as Passive Relays. Stations will be out at selected spots in the field, some will be high up in the Mountains, and others will be down in bad locations; signals will be sent over and around mountains by means of these slave antennae. Home stations are invited to be in the Field Day.

On 3rd October the big Spring Field Day will be held. An attempt will be made to put a signal into VK4, both via a North Western route, and also via a North Eastern route. All Northern Stations are asked to be on deck to help put this message through. Mt. Ebor will have a station located there, 5,250 ft. up, 2HO/V will be accompanied by 2APQ. Also, 2AOA will be up on Blue Knob, near Taree. 2ANF, 2HL, 2LG, 2ZAG and others will man the mountain tops to make this day a success. 2ATS at Inverell, 2AQI at Armidale, 2AHH at Kempsey, and we hope many other country and coastal Amateurs will show up and make the Field Day the best yet.

The 580 Mc. band has come to life again. Steve 2YR has been heard on xtal control; 2XX has been on with a mod. osc.; 2APQ has been playing around with a mod. osc.; 2HO and 2ANF have been listening; 2ABZ has also been busy getting ready for a flutter on this band.

2ZAR and 2ZAG have been working hard on a xtal cont. 1200 Mc. station each, and by some of the work done already, I understand that it's top notch. Good work, Barry and Bob.

Your late scribe, Harry 2AJZ, has resigned from the committee on account of personal duties and illness. We regret his resignation and we do hope that his stay in hospital will not be long and that some day he will be able to find time to rejoin the Group Committee. Thanks, Harry, for your past service, from all.

There will be a Hidden Tx Hunt on 19th October. Further details not yet available.

On 1st November there will be a Grand Opening Contest on the 56 Mc. band, in the form of a two-hour Scramble, starting at 8 p.m. The same rules as used on 2 mx band. Cross band will be permitted. Points to be awarded are as follows: 5 points for contacts on 58 to 60 Mc., 3 pts. from 50 to 56/60, and 1 pt. for 50 Mc. contact only. There are five possible ways to make points.

There will be a Fox Hunt on 27th November and 2AZO will be the Fox. No details as yet.

The next meeting of the V.h.f. Group will be at Petersham Technical College on 7th October, when Max Sobels will be the lecturer and his subject will be T.v.i. Suppression and Allied Subjects. This should prove a most interesting night.

VICTORIA

To add variety the last fox hunt was run in the form of a competition, two points being awarded for a catch on the run and one point for a catch while the fox was stationary, also penalty points were deducted for any difference in mileage to that of the fox car. The first hiding place was a very cunning one, it was by the Yarra River near the Melbourne High School and the car was well hidden from the road by steep embankment. The first one to eventually locate him was Graeme 3ZAA. The second hiding place was in a reserve in Hawthorn beside the Gardiner Creek. On discovering him they complained that the paddock

they had come across was very wet and muddy, not realising that they had tramped right through the creek; such is the enthusiasm on a fox hunt. At the final location, which was held at the home of David 3ZAY at St. Mary's Vicarage in Caulfield, the fox hid inside the grounds of the vicarage, which are very large and very thickly wooded. 3OJ acted as control station and was ably assisted by 3ZAJ, 3ZBJ and 3ZBE—many thanks chaps.

Twenty-eight attended the hunt and during supper the outright winner for the evening was announced. This was Ray 3KD and Norm Dench, second place went to David 3ZAY, and third place to Laurie 3ALY. We wish to thank the Rev. and Mrs. Cooper and David for their friendly hospitality in making their home available to the Group to conclude a pleasant evening.

At the last V.h.f. Group meeting we had a very welcome visitor in the person of Barry 2ZAG who gave a very interesting talk on the activities of the Group in his Division. Several of the members brought in pieces of equipment and gave a demonstration and short talk. They included 3ALZ with his grid dip meter, 3ZAC who demonstrated the modifications of a glide path rx for the 288 Mc. band, 3ZAJ with his grid dip meter and power supply, and 3YS displayed 3DG's home-spun, but very professional looking, microphone. Dick has used a 105 millimeter shell case for the base and a piece of tubing for the stem which support a crystal insert mounted in a circular case, the whole being chrome plated and in all an excellent piece of workmanship.

A discussion also took place on the Olympics and it was resolved that the Group would co-operate with the committee.

Ron 3ZBH who recently spent a week-end in Adelaide visited several of the VK5 v.h.f. men whom he found were most enthusiastic about 288 Mc. Ron informs us that 5MT and 5RO who both operate on 6, 2, 1 and ½ mx. 3RI is very active on 288 Mc. Amateurs meet in at the 3RI rooms every Thursday evening and any who are interested are most welcome. New calls heard on 2 mx recently are Reg 3ZAD at Canterbury, Tim 3ZBO at Frankston, and also 3EL, Warrick 3ZBD, who has his tx working on 288 Mc. has had crossband contacts with Lance 3AHL and Evan 3AAP on 144 Mc. David 3ZAC has invested in a QQ003/20 and expects to run about 45 watts. Keep a lookout for 3ZBM and 3AWC who are active on 2 mx from Bendigo and are hoping to make some Melbourne contacts. The good wishes of the Group are extended to Jim 3ABA, whose wedding is to take place shortly.

Evan 3AAP back after 2 yrs., now has XYL and new QTH; runs 15w. to p.p. 7193s; rx is 6J6 with lines ¼ inch dia. and ¼ inch space; ant. 4 el. Yagi. Reg 3ZBK is using 6AK5 r.b. with ¾ inch bars and has dipole 30 ft. up; no tx as yet. Bert 3AAF has tx trouble. Geoff 3AUX been on holidays. Bob 3ZAN is putting 832 final on tx. Mac 3QO repairing antennae. Ron 3ZBH and Lance 3AHL also active—as usual. Dreamed that 3AFV was on 288 Mc.—'Twas only a dream though Sir!

The V.h.f. Group had a very excellent display at the All Models Exhibition, in fact over 60 per cent. of the exhibits were from the V.h.f. Group members. Pride of place was taken by two tx's, one built by Fred 3YS, and the other by Joe 3TO. Joe's complete station was of his usual excellent workmanship, displaying on the rx home-built Collins type dial mechanisms and every detail displaying perfect finish. The tremendous activity on the v.h.f. bands certainly impressed many of the low frequency addicts and a number expressed the desire to build equipment for the 2 mx band.

SOUTH AUSTRALIA

50 Mc.: There is nothing much to report on 50 Mc. as there are only a few stations operating on this band and then only for short periods. The usual regulars are 5RO, 5KC, 5AX and 5MT.

144 Mc.: The main line of activity last month has been in the mobile field. Many tests have been carried out by Col 5RO and your scribe. One night during August, your conductor went mobile on 144 Mc. using a very temporary hook-up incorporating an SCR522 tx and rx, complete with a three el. beam. This set-up

worked very well as might be expected; the only bad part was the auto ignition noise due, of course, to poor shielding and by-passing. Ken 5KC is progressing steadily with his mobile gear which will consist of a xtal converter using 6AK5s as r.f. stage and mixer into a car b.c. set. The tx will be a modified SCR522; this should be a good combination.

Clem 5GL has completed his mobile gear and he is using a xtal converter as above, but the tx in Clem's case is a low powered job using 6J6s throughout. Input to the final runs at about 2 watts.

Neil 5ZAW has just about completed his 100w. final using p.p. 6140s. He plans to use the existing low powered tx, both for mobile and home station use. Bob 5RI at Mt. Bryan has completed his 6140 final and has been heard in Adelaide at good strength by 5RO and 5MT. Ern 5EN at Pt. Pirie has also been heard in Adelaide on 144 Mc. Your scribe has not had the opportunity to listen, but Col reports an S3-S6 signal at his QTH. Ern is using an 828B running about 80w. Input and I believe the antenna is a 5 over 8 stacked array.

288 Mc.: Jack 5LR reports this band as being fairly active, with stations to be heard on every night of the week. Those stations operating are 5LD, 5FM, 5PU, 5IZ, 5LR, 5WR, 5ZR, 5BY, 5LN and 5LB—5MT.

WESTERN AUSTRALIA

At the last meeting of the V.h.f. Group, Don 6HK gave a very interesting talk on the development of mobile operation on v.h.f. in this State and the types of gear used. Don showed the meeting Don 6TR's mobile tx and xtal converter for 50 Mc. and Don's own 144 Mc. rx. These were viewed with much interest. Don gave many suggestions to those interested in building up similar gear. Frank 6CC then showed his "halo"—a folded dipole wrapped into a circle. Checks with this on 50 Mc. showed that it gave excellent all round coverage and had the advantage of horizontal polarisation. As Frank's for 6 mx was only about 18 inches in diam. (the used two capacitive end loading plates about 5 inches in diam. and pruned them till the dipole loaded), the suitability of such an antenna for mobile operation was very evident. The thanks of the Group went to Don and to Frank and his XYL, who were our hosts.

144 Mc.: This month two new call signs appeared on the band. Dave 6ZAC is using an 832 final and an AR301 rx. Antenna is only a dipole at the moment, but plans are afoot for a beam. Ron 6ZAR is using a QQ04/15 tripler final, a 4 el. beam and a double converted AR301. John 6ZAC is busy building his rx and hopes to put out a signal as soon as studies permit. Rolo 6BO has had further checks with Wally 6WG in Albany without success. Wally has not yet got the QQ06/40 in operation, so the chances of contacts are still low. However, the more encouragement we in the city can give to the country boys the better it will be for us all! Thanks Rolo!

288 Mc.: Don 6ZAV has joined the xtal controlled group with an 832 final running about 15w. Don has worked all the active 288 Mc. stations with the exception of Wally 6ZAA in Fremantle. Frank 6FB is a new one using this band and has worked a number of the boys. He is using a mod. osc. Len 6ZAT is using a 6J6 mod. osc. and no antenna. Len has not assembled a beam yet and is using the lechers he used to measure his frequency to radiate his signal. Despite this, he has put very strong signals to Rolo 6BO and Don 6ZAV. Frank 6CC has now worked both 6ZAV and 6BO. Don 6HK has revamped his xtal converter and may re-build his tx after he finishes his mobile 2 mx station. Wally 6ZAA has a QQ04/15 tripler final on 288 Mc., but has yet to work out of Fremantle. What about a portable jaunt to Rottnest someone?

Stan 6ZAS has been asked by the V.h.f. Group to determine the v.h.f. records made by Western Australian Amateurs. Anyone with claims should contact Stan. It is hoped to publicise these records so that those new to the v.h.f. bands can strive to do better.—6ZAA.

50 Mc. W.A.S.

| Call | Cer. Add. No. Cntr. | Call | Cer. Add. No. Cntr. |
|-------|---------------------|--------|---------------------|
| VK2WJ | 13 4 | VK2AEZ | 10 1 |
| VK3PJ | 5 3 | VK3XA | 11 1 |
| VK3VW | 9 3 | VK3ACL | 12 1 |
| VK4RY | 2 2 | VK3ACL | 14 1 |
| VK4HR | 4 2 | VK3ZL | 16 1 |
| VK5LC | 1 1 | VK2HO | 17 1 |
| VK6DW | 3 1 | VK2ABC | 8 |
| VK3RR | 6 1 | VK2WH | 15 |
| VK3HT | 7 1 | | |

"ACOS" CRYSTAL MICROPHONES and MICROPHONE INSERTS

A Complete Range For Every Purpose

DESK OR HAND MICROPHONE

MIC 36



£6/18/6

Housed in attractive plastic case, this Microphone is ideal for home recording and public address, etc. Response unexcelled for its size and price. The performance is not affected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s. Recommended load resistance not less than 1 megohm dependent on low frequency response. Can be supplied complete with switch and floor stand adaptor as required at a small extra cost.

TABLE AND STAND MICROPHONE

MIC 22



This omni-directional Microphone is robust in construction, with a pleasing appearance. Vibration, shock or low frequency wind noise will not affect the performance. The low frequency cut-off is dependent on the load resistance. The cut-off is given by the quotation, $F = 80 \div R$, where $F =$ c.p.s., $R =$ megohms. An adaptor (floor mounting) is available at low extra cost.

SPECIFICATION

Output level = -50 db ref. 1 volt/dyne/cm².
Output impedance—equivalent to approximately 0.002 uF. (0.8 megohm at 100 cycles).
Frequency response—substantially flat from 40 to 6000 c.p.s.
Recommended load resistance—not less than 1 megohm, dependent on low frequency response.

£9/18/6

HIGH QUALITY MICROPHONE

Designed to meet even the most exacting requirements, this Microphone incorporates the world famous floating crystal sound cell construction. Its special characteristics are that its fine performance, is not affected by vibration or shock. The fidelity is not impaired by low frequency wind noise.

SPECIFICATION

Recommended load resistance—not less than 1 megohm.
Output level -65 db ref. 1 volt/dyne/cm².
Frequency response—substantially flat from 30 c.p.s. to 10,000 c.p.s.
Directivity—non-directional.
Size—2½" spherical diameter.
Connector—Standard international 3-pin.

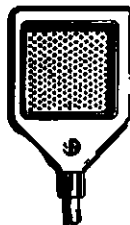
MIC 16



£24/19/6

LAPEL MICROPHONE

MIC 28



£5/19/6

Designed to give freedom of movement, this Microphone is small and non-directional. Housed in a soft moulded rubber case, which gives protection against shock, it is provided with a pin at the rear of the case for pinning to the lapel.

SPECIFICATION

Output level—approx. -55 db ref. 1 volt/dyne/cm².
Recommended load resistance—5 megohms.
Frequency response—level throughout the whole of the audible spectrum.
Capacity—0.0015 uF. at 1000 c.p.s.
Impedance—100,000 ohms at 1000 c.p.s.
Cord—6 ft. shielded cable.
Size—1-9/16" wide x 2¼" long x ¾" thick.

GENERAL PURPOSE MICROPHONE

MIC 35



£2/15/-

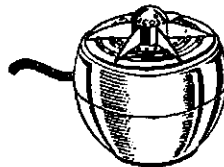
substantially flat response from 50 to 5000 c.p.s.

SPECIFICATION

Output level: -55 db ref. 1 volt/dyne/cm².
Cable—approx. 4 ft. of co-axial supplied.
Weight—6 ozs. unpacked, 7 ozs. packed.
Dimensions—microphone only 2¼" x 2¼" x ¾"

HAND OR DESK MICROPHONE

MIC 33



£6/18/6

This Microphone has been designed for the high quality public address and home recording field. High sensitivity and flat characteristics are obtained by a specially designed acoustic filter. Housed in an attractive plastic case with an unexcelled response for its size and price. Unaffected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s.

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(MIC 32 illustrated)

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MIC 19/4 and MIC 32 Inserts, £2/15/6; all others, £1/19/6.

MICROPHONE INSERTS



(MIC 23 illustrated)

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FEDERAL, QSL, and DIVISIONAL NOTES



FEDERAL

AMATEUR RADIO IN THE ARMY

It has been noted with interest that Army Headquarters will consider granting permission for the establishment of Amateur Radio Stations on Army property. Active support of Amateur Radio Clubs is indicated and in view of the circumstances, some excellent opportunities for experimental work will be available to Service personnel.

LIST OF SUCCESSFUL AMATEUR CANDIDATES

The following is a list of candidates who were successful at the examination for the Amateur Operator's Certificate and Amateur Operator's Limited Certificate, held on 19th April, 1955.

- New South Wales**
 E. Pearce, 19 Mehan Gardens, Narrabundah, Canberra, A.C.T.
 *W. J. Stewart, Hotel Acton, Canberra, A.C.T.
 F. W. Fowler, 4 Thompson Cres., Tamworth.
 R. D. Martin, House No. 20, Radium Hill, S.A.
 *J. T. Jarrott, Gordon St., Culcairn.
 A. Maxwell, 24 Coleman St., Westmead.
 *B. H. Ridley, 4 Woodstock St., Bondi Junction.
 *F. J. Caton, 23 Jeffery Ave., Nth. Parramatta.

Victoria

- J. C. Humphreys, Staff, R.A.A.F. Station, Miner's Rest, via Ballarat.
 *A. K. Hore, No. 8 Married Quarters, R.A.A.F. Ballarat.
 V. G. Wyatt, 38 Queen St., Cobram.
 G. A. MacFarlane, Pearsondale, via Sale.
 F. Clark, 164 Middleborough Rd., Blackburn.
 N. A. Town, "Weald Cottage", Leith Road, Montrose.

- *R. A. Bailey, 15 Riverside Rd., Ivanhoe.
 *E. L. McLean, 1 Acacia St., Murrumbena.
 *J. L. Ocolowitz, 128 Gaffney St., Coburg.
 *A. I. Morrison, 72 Park St., South Yarra.

Queensland

- *J. B. Hargreaves, 5 Herbert St., Wandal, Rockhampton.
 J. A. Kelly, District Hospital, Ayr.

South Australia

- *J. McG. Moffatt, 8 Swan Ter., Port Adelaide.
 *L. E. Coombe, 44 King St., Mile End.
 *G. L. Taylor, 224 Goodwood Rd., Millswood Estate.

- *P. M. Williams, 42 Harrow Rd., Somerton Park.

Western Australia

- *J. F. Chambers, 17 Leon Rd., Dalkeith.

Tasmania

- D. Johns, 28 Waterworks Rd., Dynnyme, Hobart.
 *P. J. Edwards, 9 King St., Sandy Bay, Hobart.

REGION I. DIVISION

In view of the present interest being taken in Regional Conferences, it seems appropriate to publish the Constitution of Region I, Division of the International Amateur Radio Union (I.A.R.U.).

Article 1: The name of this organisation is the Region I. Division of the International Amateur Radio Union, hereinafter called the Division.

Article 2: The objects of the Division are to promote the general interests of all the I.A.R.U. Societies in Region I. (as defined by the International Telecommunications Union) and to represent their interests at I.T.U. Administrative Conferences.

Article 3: The membership of the Division shall consist of Member Societies of I.A.R.U. in Region I.

Article 4: A Conference of Member Societies shall be held at an interval of not more than three years in one of the countries within Region I.

Article 5: Every Member Society of the Division is entitled to appoint representatives to attend Region I. Conferences and each Member Society shall have one vote at Plenary meetings.

Article 6: The President of each Region I. Conference and the Chairmen and Secretaries of the Committees set up at the Conference shall be elected at the first Plenary meeting and shall act only for the duration of the Conference.

Article 7: At each Conference an International Executive Committee, consisting of a Chairman, Vice-Chairman, Honorary Secretary and at least two (2) members, shall be elected by the Member Societies present. The Committee shall have full executive powers between Conferences.

Article 8: The Honorary Secretary of the Executive Committee shall act as the Conference Secretary.

Article 9: The Chairman of the Committee shall have general supervision of the affairs of the Division and shall preside at meetings of the Committee.

Article 10: The Vice-Chairman of the Committee shall act in the absence or disability of the Chairman.

Article 11: The routine affairs of the Division shall be undertaken by a Secretariat, hereinafter known as the Region I. Bureau.

Article 12: The Honorary Secretary of the Committee shall be responsible for all funds belonging to the Division and for the management of the Bureau. He shall deal with all general correspondence appertaining to the Division and shall maintain a record of all actions taken and shall keep minutes of all meetings of the Committee. He shall maintain a close liaison with I.A.R.U. Headquarters and shall forward to the Secretary I.A.R.U. reports on the proceedings of the Division.

Article 13: Neither of the Division nor the Committee shall make decisions which are contrary to the Constitution of the I.A.R.U. and they shall not interfere with the internal affairs of Member Societies.

Article 14: Member Societies at a Conference may represent and submit proxy votes on behalf of Member Societies not present.

Article 15: Decisions taken at Conferences shall be by simple majority of votes. Decisions regarding financial matters require a two-thirds majority.

FEDERAL QSL BUREAU

RAY JONES, VK3RJ, MANAGER

Applications for all Awards that are handled through the W.I.A., should now be made to the recently appointed Awards Manager, Gordon Weynton, VK3XU, 30 Park Street, West Brunswick, N.10. Previously applications for W.A.C., W.B.E. and D.U.F. were handled initially by the Federal QSL Manager. The alteration has been effected to introduce uniformity.

Norm Buzacott, VK3TD, recently made a trip to New Caledonia and New Hebrides on an inspection of Meteorological and Radio Stations. He met local Amateurs at both places.

Bill Fouhey, ZL2LB, the N.Z.A.R.T. QSL Manager, is having a spot of bother with his local authorities over postage rates on outward QSLs. If the anticipated losses prove too high, it is possible that they may have to drop their outward department.

George Delahoy, VK3ADZ, ex-VK1DY, has broken the silence that has surrounded his whereabouts since his return from Heard Island early this year. George, writing from his home address, Eden Park Road, Whittlesea, Victoria, under date of 4th September, states he has had a quiet but very busy time since his return. Besides acquiring a new car, he has built a new shack and garage. Unfortunately the batteries of the 32 volt home lighting plant are in too poor condition for George to get VK3ADZ on the air at present, but he is assembling 12 volt power gear and expects to be active by the end of this year. He has had 1000 VK1DY cards printed and is moving them out as opportunity permits.

A poignant note is struck on the unusual QSL card of JA1AA. On the face, besides a picture of Hisao and his four motherless children, there is a Scripture quotation from Job 1:21. On the reverse, in addition to the usual contact particulars, there appears details of his departed XYL Michiko who lost her life when run down by a taxi on her way home from a women's Amateur Radio class held at JA1CO in 1954. The QSL card is a memorial to her memory and was designed by a daughter, Kumiko. We all feel deeply for you Hisao, in the tragic loss of your loved one.

The QSL Manager for Malta advises that the published address of the Malta Bureau is incorrect. The correct address is Robert F. Galea, ZB1E, "Casa Galea," Railway Road, Birkirkara, Malta.

KP4YT, P.O. Box 1447, San Juan, Puerto Rico, complains of the difficulty in extracting cards from VK. He has had a total of 10 contacts with VK2, VK3 and VK4 stations and so far not one card received. He would like a little action by some of the operators concerned.

Frank Eilesmere, VS1GP, of R.A.F. Changi, Singapore, is active on 7 Mc. and is particularly desirous of contacts with VK3APP and VK2AUD.

ZC3AC, V. E. Mathews, of Christmas Island, in a recent QSL states he is still active on 14 Mc. c.w. He adds that ZC3AA is the only other ZC3 station but is inactive at the moment.

FEDERAL AWARDS

D.X.C.C. AWARD

The following are the alterations and additions for the month:—

| | | | |
|--------|--------|---------------|----------------|
| No. 6 | VK2ACK | Open Division | 225 Countries. |
| No. 59 | VK9DB | " | 139 " |
| No. 31 | VK9DB | Phone | 105 " |
| No. 32 | VK7RX | " | 107 " |
| No. 60 | VK7RX | Open | 112 " |

Congratulations to VK9DB and VK7RX who are the first in their Divisions to gain the Phone D.X.C.C.

W.A.V.K.C.A. AWARD

The following have qualified for this award during the month and their Certificates are in the mail:—

| | | |
|------------------|-------|-------------------|
| Vincent L. Rosso | W5KC | Certificate No. 4 |
| R. F. Czeikowitz | W6ATO | " " 5 |
| Harold A. Boyd | ZL1CH | " " 6 |
| Albert H. Hix | W8PQQ | " " 7 |
| Mark H. Churton | ZL1TB | " " 8 |

V.H.F. CENTURY AWARD

Applications for this award will be receivable after the rules have been published in "Amateur Radio." Aspirants for this award are requested to withhold their cards in the meantime.

—G. Weynton, VK3XU, Awards Manager.

NEW SOUTH WALES

The August meeting of the N.S.W. Division was held at the usual venue on 26/8/55, the meeting being opened by the President, Jim Corbin, 2YC, shortly after 8 p.m. In the absence of the Secretary, his place on the rostrum was taken on this occasion by Charlie Quin, 2AWQ. A notable visitor in ZL1BY was welcomed by the President and the members assembled.

The evening was then devoted to the lectures arranged, in the first place the Divisional B.C.I. and T.V.I. Officer, Bob Black, 2QZ, gave a very interesting lecture on the suppression of b.c.i. and t.v.i. Bob stressed the need for members to report their b.c.i. to the committee so that advice may be given to rectify the fault wherever it lies, to give those who have volunteered for duty with the committee practice in curing the cases of b.c.i. reported and in providing the committee with material on which to work to make the organisation efficient and to give the committee the necessary information so that their method of approach to manufacturers and dealers can be formulated. More volunteers are required to help in this matter which will indeed become a vital one in the future.

Norm Beard gave a lecture on the Trials and Tribulations of T.V.I. and dealt with the generation of harmonics in transmitters very effectively. Following on this, Joe Reed, 2JR, gave a talk well illustrated with slides on his recent visit to New Guinea, which of course was well received as usual.

The meeting closed at the usual late hour and was concluded in the usual manner, in Gloucester Street.

DOINGS OF THE TOWN

2ID had a cubicle quad, but dropped it down gently following the windy days. 2APT still doing things to the modulator with good results. 2AUR gets out reasonably well even on the long path; some of you fellows should look to your laurels, if any, George will be QRU Inverell soon. 2AAB made a reappearance on 20 m recently, same old signal. 2AGW has been suitably welcomed to the home hearth again following on his trip overseas. 2ACD has been off colour, now learning all about v.f.o.'s. A present visitor to Sydney is VR3C, Phil is having a good time and getting around the western suburbs.

2SV back on the air after holidays among the snow, sounds in the pink. 2FM back at work after illness and hospitalisation, better now. 2JP still going strong, putting a fine signal out these days. 2ADL gets on late at night these days. 2GE has a real beam up atop the towers now, seem to have seen one of those somewhere Max. 2ACN rarely heard, what is the matter Ralph? Now that the bands are opening we hope to hear a few more of the boys around. 2YI doing well with the new beam, knocks them off like nobody's business.

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BY JOHANSEN

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For VALVES:
807, 8T66a,
etc.
Saltable Conversion
"WILLIAMSON" to U.L.
See "Audio Engineering" of Jane,
1952.

20 WATTS: 30-30,000 c.p.s.
Primary: 6,500 ohms.
SCREEN TAPS: 19% of Plate Z.
F.R.: Plus or minus 1 db 10-60,000
c.p.s.
Leakage Inductance:
1/4P/1/4P: 13 mH. maximum.
Prim./Sec.: 20 mH. maximum.

★ TYPE 931 (931-8: 2 or 8 ohms; 931-15: 3.7 or 15 ohms)

For VALVES:
91A, EL37,
KT66, etc.
See "Radio and Hobbies" of Feb-
ruary, 1965, 17 watts U.L.
Amplifier.

20 WATTS: 30-30,000 c.p.s.
Primary: 4,500 ohms.
SCREEN TAPS: 19% of Plate Z.
F.R.: Plus or minus 1 db 10-60,000
c.p.s.
Leakage Inductance:
1/4P/1/4P: 13 mH. maximum.
Prim./Sec.: 15 mH. maximum.

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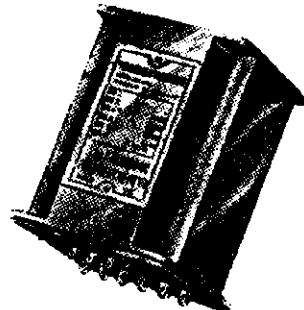
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100 Clarence Street
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196 Bunde St, Adelaide

QUEENSLAND:
A. E. Harrold,
123 Charlotte St., Bris.
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220 Elizabeth St., Hobart
WEST. AUST.:
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★ Ultra Linear—
Output Type

Type 916—12 watts.
Prim.: 8,500 ohms p.p. (with
screen taps).
Sec.: 916-8: 2 or 8 ohms;
016-15: 3.7 or 15 ohms.

Type 940—12 watts.
Prim.: 8,000 ohms p.p.
Sec.: 2, 8, 12.5 15 ohms.
Response: 10—50,000 c.p.s.
Valves: 6V6, 6BW6, KT61,
EL84, etc.
10% Screen Taps.



LOOK FOR THE SILVER-GREY TRANSFORMER

SOUTH WESTERN ZONE

By the time this is read the South Western Zone Convention at Albury will be only days off. We are expecting a good attendance to do battle for the trophies.

The gale force winds of last month played havoc with beams and antennae, not only in this zone but we hear in others. Your scribe had to dismantle 144 and 20 mx stacked beams. Don 2RS also suffered, losing his 144 Mc. beam while away on holidays; not a good sight Don on returning. Don had quite a time with his 144 Mc. portable gear on his holidays, working about 30 to 40 144 Mc. stations around Sydney and further afield; good work Don.

From Griffith news is that the Z boys are at long last getting gear to go on 144 Mc.; hope to hear signals from Griffith soon lads. Another Z call will be soon on 144 Mc. in the name of Jim Pratt, of Ilabo; should be easy to get a few contacts when you fire up the 329 Jim. From here, when we get the 144 Mc. beam back again on the tower, we hope to give the v.h.f. gang a better signal with the new p.a. QQQ06/40. Ray 2APZ is leaving us in September, bound for Broken Hill. We are sorry to lose you from the zone Ray. On behalf of the zone gang, I would like to wish you all the very best in your new venture. We hope to hear the familiar voice from Broken Hill when you get settled in.

VICTORIA

STATE CONVENTION

As most members of this Division will already know, this year's State Convention is to be held in Bendigo on Saturday and Sunday, 19th and 20th of November, 1955. If you intend coming to Bendigo for that week-end, I would appreciate it if you could write me a letter or note on the back of a QSL informing me of the following details:

1. Number of people coming to the Convention, OMs, KYLs, and harmonics.
2. Number who will be attending the Dinner.
3. Number who will require hotel accommodation reserved for them. (Please enclose 10/- per person, booking fee.)

I would like those people to write by 28th October, at the very latest. Until anybody is responsible for the organisation for a Convention, they cannot realise just what is involved. The hotel proprietors are very helpful, but we do require these definite details by 28th October, so please help by writing promptly in order that adequate first-class accommodation may be secured for all.

Name and address to forward particulars is: Neville Stilwell, 263 Boundary St., Bendigo.

Details of the programme and meeting place, also confirmation of your accommodation, will be sent immediately all details are known. Please send your QSLs by 28th October.

VICTORIAN DIVISION ANNUAL DINNER

Friday, 4th November, at 6.30 p.m.

The Annual Dinner of the Victorian Division will be held at the Hardware Club, Cr. Hardware Street and Little Bourke Street (just around the corner from the Institute rooms) on Friday, 4th November, at 6.30 p.m.

Tickets at £1 per head are available from the Secretary and early application is requested.

NEW ADDRESS FOR VK3 QSL BUREAU

As from 1st October, 1955, all QSL Cards for VK3 (both Inwards and Outwards) will be handled from the Victorian Division's rooms.

QSL Bureau Managers and members are requested to forward all future cards and correspondence to VK3 QSL Bureau, C/o W.I.A. Victorian Division, 191 Queen Street, Melbourne, C.I.

Those members who wish their cards forwarded on to them by post, are requested to forward a stamped addressed envelope to the above address.

SOUTH WESTERN ZONE

Once again there isn't a great deal of activity in this zone, in fact not as much as we would like, so what about it, chaps? Kevin 3AKR was heard on 80 mx the other night, which is the first time for a while, so let's hear you on the hook-ups Kevin as you were very regular once. Norm 3EQ was unlucky with the windy weather as it cleaned up his antenna farm, but we have them all installed again and hope to be active once again. 3WI was heard here in Warrnambool whilst on the air from the All Models Exhibition with fair strength, 5 and 8/9.

There still seems to be the same few on the Sunday morning hook-ups, 3AGD, 3II, 3YW, 3HG. We never seem to get Bill 3AMH on it these days; what's the matter Willie, is the b.c.l. a problem? Bill Wines has completed the

144 Mc. beam so hopes to hear something there soon, although has been doing alright on 20 mx, having received QSLs from PY2CK, PY5DP, VE7ADF, W0CXC, W0JFI and a few others. Ed 3AKE, from Geelong, was heard on the band recently, but there is not enough Geelong boys on the hook-ups. 3IC is on a fair bit.

Gordon 3AGV, at Colac, will soon have to be busy making the necessary arrangements for the Convention which is to be held there on the first week in November. If you require any assistance, contact some of the chaps as we are all willing to help.

CENTRAL WESTERN ZONE

Our Zone Convention will have been held by the time these notes go to press, but we will be very pleased to welcome everybody who can "make" the State Convention to be held in Bendigo on 19th and 20th November. Neville 3ACN will be organising our "wants" at Bendigo and details of programme will appear in "Amateur Radio."

Most of the local active Amateurs took part in the R.D. Contest and all seemed to have enjoyed it very much. Conditions on the 80 mx band have improved of late, so our hook-ups are well patronised and those interested in DX say that they are able to work a fair amount. David Goldsworthy made a trip to town recently and brought back some disposals equipment so we have been busy the last few days checking and talking about the items which we were lucky in obtaining. I guess most of the chaps have been so employed recently.

NORTH EASTERN ZONE

Des 3BP has been on 80 mx lately. Jack 3AKC is active, having recently constructed a 20 mx converter. Howard 3YV expected to be off the air for a period, at time of writing, and Col 3WQ has been away on school holidays. Frank 3ZU has an interesting time travelling round the district as part of his job. Ken 3KR is chasing the DX lately, and Hugh 3AHF is understood to prefer that activity. Bill 3JP has been exercising the plate modulated converted AT5 on 80 mx.

It is not known how Vic. 3ABX is going with 2 mx. Des 3CO has quite an interesting rig to work 20 mx DX, while Syd 3CI has been having a go on 15 mx as well as entertaining a recent welcome visitor in Hughie 5BC from Renmark. Tom 3TS is moving on with the tower to carry his beam antennae, and George 3GD is interested in 15 and 20 mx. Jack 3PF, like Jim Harrington, has been quiet lately. Brian 3ASF has been active. Ted 3AOB is probably about, and our Secretary, Earle Scones, definitely is, but without that BC348 yet. It is not known how John 3ZEG is going in Numurkah with his 2 mx equipment.

Norm McDougall is to be congratulated on joining the Institute as an associate member. Jim Muntz has not got around to doing anything with his 32v. power yet. Vern 3AXW

A.O.C.P. CLASS

The Victorian Division A.O.C.P. Class will commence on Thursday, 17th November, 1955. Morse and Regulations are held on Monday and Theory on Thursday evenings from 8 to 10 p.m. Persons desirous of being enrolled should communicate with the Secretary W.I.A., Victorian Division, 191 Queen Street, Melbourne (Phone FJ 6997 from 10 a.m. to 4 p.m.), or the Class Manager on either of the above evenings.

has had quite some interest with the floods along the Murray River. Alex 3AT is finding it very hard to keep up his radio at the moment. It is pleasing to note that Jim 3JK is moving about again, and once more Doug, now 7LJ, was heard on 3700 Kc. this time in the R.D. Contest.

QUEENSLAND

MARYBOROUGH

4AI plans a xtal controlled converter for 2 mx. Works well with his 40 ft. high double extended Zepp. 4CB was indignant at "A.R." notes depriving him of 4 elements of his 2 mx beam, so here it is, there are 12, not 8 elements, so now you have your four missing elements back. Arch. 4BG says anyone wanting standing waves can call and collect some from his 14 Mc. beam feeder lines. Don't rush, chaps, there are plenty to go around. Ron says he has had standing waves so long they must be tired. Is trying a Gamma match and co-ax feeders instead of 300 ohm ribbon.

Grahame Pooley only has to pass the theory paper at the next examination to collect his ticket; meantime is re-building his AT5. 4GH has not been on lately.—4BG.

SOUTH AUSTRALIA

Pansy's warning that he would no longer be writing these notes puts me at a grave disadvantage. I shall now have one less reader than he had. My wife was, to my knowledge, the only person who for some reason or other, always dived on "Pansy's Page."

Incidentally, your Council was much taken aback when the rotund gentleman made his announcement that he would be unable to continue as scribe. It is true that for some time we had all secretly believed that the old fellow was losing his touch and that each and every one of us could do better. Alas there was but one present with the courage of his convictions. This one was misguided enough to put his signal on the air.

Talking of convictions. The good Doctor had been in a state of jubilation and anticipation for the past month. He had ground plans to be erected v.h.f. converters to be built and what not. Norm Colman had reserved a room with all the trimmings. But the plans of mice and men . . . The magistrate took into consideration my previous good citizenship and contented himself with a donation.

It was quite an education to hear those two fishermen, 5QR and 5BY discussing their recent catches. The conversation went something like this: "Did you work that Leichenburger last week?" "Sure, and wasn't he down in the mud! Just managed to copy him! But he's promised to airmail the QSL. I gave him 599."

Ole Black Joe gave me a ring today (I call him Ole Black Joe because he always seems to be coming when there's a job to be done. Not only coming, but a stayer) to advise that the Brompton Methodist Mission Youth Radio Club is coming along fine. The boys are aged from nine to fifteen years and are most enthusiastic. They are also most appreciative of the books which have been sent along. The club meets alternative Fridays and Joe assures me they are making good progress. Many of the lads had never used a soldering iron before, but they have succeeded in constructing xtal sets already. It is hoped to hold an exhibition of their work during the Xmas holidays.

Joe sounded very excited on the phone and now I have a feeling I know the reason. It seems to me that Joe will soon be moving the shack into the house. His daughter is to be married on 15th October to Brian Winkler, whom I believe, is well known to the VK3s. Congrats. Brian, and all the best to you, Joyce. And Joe, nothing less than a keg.

It will be seen that I am not given to boasting as was my predecessor. I have not yet mentioned the general meeting which was undoubtedly the best I have ever attended. Naturally this meeting was held in Adelaide—the Queen City of the South (no comment from the nautical types, please). The main attraction at this meeting was a display of equipment which had been constructed by members. Each exhibitor spoke for approx. five minutes on his gear and mighty interesting it was. General comment was that there should be more of it. Perhaps I should apologise to those who won prizes, but it just did not occur to me to obtain their names for this record. However, I have no doubt they will forgive me on this occasion.

Pete Bowman made some very pertinent remarks on the matter of the v.h.f. bands and t.v. This matter is to be taken up with F.E. with a view to having it pressed most strongly.

I have been informed that the Magazine Committee have plans for improving our publication. Would members please note those last two words? "OUR PUBLICATION." It is ours. Whilst a competent Magazine Committee is important, the committee must have assistance from me . . . YOU and YOU. If you do not feel up to contributing an article, why not assist by making a subscription in the name of one of your DX mates? 5FO tells me that the mag. is much appreciated in Islands known, once upon a time, as our Near North.

And now for our country notes. It is with regret that I admit that these consist solely of notes from the South East. Southeasters, please don't take my regrets in the wrong way, I'm new at the game. I just want to needle those guys in other parts of the State. How the devil am I going to maintain this State's supremacy against the onslaught of the Pin-cotts and others who would deprive us of our heritage?

It seems to me that the folk in the Mount have a real tale of woe. My correspondent mentions severe commercial QRM on 7 Mc. and even more severe QRM in the form of high winds. The latter being responsible for much damage to antennae. In regard to this 7 Mc. QRM, please remember that F.E. is most anxious to have details which will enable them to make representations to the proper authorities. This request applies to all Amateurs. My correspondent's remarks just reminded me of F.E.'s longstanding invitation.

5KU suffered severe damage from the high winds in addition to damage from lightning which seemed to pick out his remaining antenna for particular attention. Ventilators were blown out, meters and other components damaged; bad luck, OM. 9MS also lost his beam. Just a week before the R.D. Contest. However, I understand that Stuart was able to effect repairs and make his presence felt in the Contest.

5TW has moved to a new QTH. Any improvement OM? Most of us pick the new site with a view to bigger and better operations, but if you have read the paper in the last couple of days, your heart will bleed for me. 5FD got a flying start in the Contest with an antenna hooked to the fowl house. Yeah, I know that's corny, but they grow a lot of corn or something in the South East and the rest of the State hasn't given me a lot of dope.

Leo SZAQ or should it be SZAG? Blame my informant's ball point. Leo also lost his beams but there does not appear to be as much sympathy in this letter for you, OB. They reckon your beams are just babies. Nice guys, aren't they?

John, you have my sympathy. Let's sing together, "You forgot to remember."

Stuart, my esteemed correspondent, if you have read the notes this far, you will appreciate that your suggestion, under our present leadership, is unlikely to be acted upon.

I have just been reminded that a certain VK3 is of the opinion that our former scribe was not capable of filling a page of log in any Contest. This statement has been hotly contested by those present. Some maintained that he was incapable of making an entry. The Chairman called the meeting to order and insisted that this important matter be put to the vote. This resulted in the meeting conceding his ability to record half a page of log. We trust that this decision will meet with the approval of the aforesaid VK3. We would remind all VK3s that we VK3s are capable of copying all types of morse from the Lake Erie Roll to mediocre.

Before closing I would like to thank all those who have assisted me. My special thanks to those VK3s who provided material and to one Doug Bowie who encouraged me with a case of whisky.

My present headache is due entirely to my maiden efforts as a scribe.—SJD.

PAPUA—NEW GUINEA

Another Remembrance Day Contest has come and gone with the majority of the VK9 gang still flat on their backs trying to get over the arduous 24 hours. Yours truly, after toiling for something like 18 hours, could only manage a croak and any questions were answered with a mute look of despair. Haven't as yet heard how the gang fared in the points score, but from the amount of QRM going on would hazard a guess that some fairly good scores were totalled. Never have so many VK9s been heard on the air at one time. They were all there. VKs 8FN, 9DB, 9WK, 9RM, 9RC, and 9VP just to mention a few heard. Guess that the VK9 Division worked pretty hard, but it is doubtful if we could manage to scrape enough points together to cause any concern to some of the VK States wherein scores of something like 300 contacts were not rare.

Our Secretary, Doug, 8OQ, requests information from those interested in non-Amateur activity in the 7 Mc. band. All reports will be welcome.

Two new members to go before Council next meeting are Murray Ewen (9CK) and E. Penikis (9VP), both of Port Moresby. We welcome you to the VK9 Division fellows, and trust you find DXing from this part of the world to your liking. Hope to see you both some Sunday on the Island Net, 7080 Kc., every Sunday at 1000 hours.

We hear, too, that Frank Mollinger, of Lorengau, Manus, is starting an operator's school for natives and one of our associate members, C. Fonceca (Fon to the boys) is joining to brush up his technical course. Trust you make the grade soon and congrats to Frank Mollinger.

Another likely starter for A.O.C.P. is G. King, of Lae, who has applied for membership to the VK9 Division. Membership is steadily growing and it looks as though we may soon have our fortieth member.

It is with regret that notice of resignation from 9BS was received recently. The junior operators at 9CW, Wau Radio Club, are fast brushing up on their geography. They should, too, with Peter 9RM putting them through their paces and showing how DX is worked.

CORRESPONDENCE

The opinions expressed in these letters are the individual opinions of the writer, and do not necessarily coincide with those of the publishers.

SIX METRES—A SHARED BAND?

Editor "A.R." Dear Sir,

It must be assumed that t.v. programmes in Australia for some considerable time will be of rather short duration and limited to a few hours in the evening and, I suppose, to Saturday afternoon, to cater for sundry sports' enthusiasts.

Obviously then, 50-54 Mc. will be unoccupied by t.v. broadcasts for the major portion of the 24 hours. It seems to me, therefore, that there is no reason whatever why the band should not be allocated for Amateur use during certain defined periods of the day.

I, for one, and I am sure there are many other Hams, would like the W.I.A. to approach the powers that be and see just what can be done about allocating the band to Amateurs. (A period from 0500 to 1700 suggests itself.)

I suppose the reason behind this line of thought may be considered rather piffing and selfish, but the fact remains that no VK has yet worked into the America's on six and, by golly, no VK ever will if we do not have the band on a shared basis.

It seems unlikely that the m.u.f. will rise to 80 odd megacycles before January, 1956, but it is also known that it certainly will during the coming three or four years.

In any case, a cross-band QSO, 6 and 5 mx, would entail quite a bit of fooling around at both ends with receivers and not every Ham has a nice rhombic or vee beam on hand, which would seem the simplest way out on the antenna problem.

Further to this, I notice in a monthly magazine ("R. & H.") that channel 2 has been allocated for both Sydney and Melbourne. Why the big hurry to pinch 6 metres then?

Of course all right thinking Hams will wonder why channels 1 and 2 were allocated where they are in the first place.

Anyway, OM, I still think the shared band idea a darn good one (we share other bands with Commercials now, however unwillingly) and I request that you place the idea before the Federal Council or whoever deals with such matters.

—MAX LINDSAY, VK4HD.

LIMITED LICENSE

Editor "A.R." Dear Sir,

Your correspondent, Roth Jones, VK3BG, has added fuel to the fire of controversy when he belittles the efforts of experimenters in the v.h.f. field and elsewhere in Amateur Radio.

He has confused "experimenter" with "innovator." The only outstanding innovation in the scientific field over the last two decades is man-made nuclear fission, everything else amounts to the better application of old ideas, thanks to the experimenter.

The dolings in the locked laboratories of Woomera are of no interest to that mentally alert, progressive individual, the experimenter, and his work towards the technical betterment of Amateur Radio is only limited by lack of time and finance. After all, he does not exist to furnish ideas for commercial interests, so it is irrelevant if his findings are not new to them. How extraordinary is it that the pro-

fessionals, after their unwise choice of 30 Mc. for a certain purpose, seek to perpetuate this error by determining to use 50-54 Mc. and 63-70 Mc. for t.v.?

Commercial interests, again, have kept very quiet about their knowledge of the diode n.b.f.m. modulator, automatic receiver, low-noise v.h.f. front ends, and ground to ground v.h.f. communication of daily occurrence between Sydney and Forbes—all resulting from the painstaking efforts of that outmoded individual the experimenter (who also writes articles for magazines such as "A.R.").

I fear that Mr. Jones seeks to represent a class of "Ham" who has grown old and tired in the pursuit of the hobby, who resents new people (limited licensees) and new ideas.

Even the most outstanding aim and object in inaugurating the Wireless Institute of Australia—to encourage scientific research into radio communication, which is the only purpose for which an Amateur Radio License is issued—has been forgotten.

This W.A. controversy is of far more than just parochial interest to the new experimenter, the Z call holder, in view of the above, and, as I see it, these new fellows are affording an overdue blood transfusion to our anaemic body.

Recently a limited licensee delivered an enthusiastically received lecture on beams to the Divisional V.h.f. Group and his time had to be extended to cope with the numerous questions asked. Requested to do so, he repeated the lecture at the General meeting. Result—audience apathetic, two fellows near me asleep (no doubt, dreaming of DX and international goodwill), no questions.

—ADRIAN ROFE, VK2HE.

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GUEST EDITORIAL



"Nation Shall Speak Peace Unto Nation"

runs the inscription over the portals of the B.B.C. Headquarters in London.

It was with mixed feelings that one listened to sundry broadcasts on the "Big Four" "pow-pow" at Geneva. At that slightly sinister gathering of individuals in whose hands the very existence of civilisation balanced precariously, the result was hailed by newcasters far and wide, to the effect that the "future outlook for negotiations in less brittle!"

Memory surges back to Munich, with hopes of "peace in our time," and the ranting fulminations from Zeesen by one in whose hands the peace then lay. It is difficult to believe that today, those on one side of the fence are contemplating the other in benignity for h.f. radio channels indicate otherwise.

The state of affairs in most of our 40 metre allocation is ironical. In view of the aura of goodwill displayed at Geneva, perhaps one may be pardoned for wondering why those saw-tooth oscillators driving megawatts of pulsed power have been, and still are, weaving their belligerent pattern?

For years now the "cold war" has included this radio version, with the skipping about of "QRM factories,"

whilst the B.B.C., and others, try to dodge by frequency "cuddling." This goes on in the s.w.l. 31, 25 and 19 metre bands, but probably with severest intensity in our 150 Kc. of "40." From 7100 Kc. higher, is torn to shreds by juggernauts with no heed for Amateur Radio.

If leaders of nations in this world are sincere about goodwill, effective procedure would be to ensure unhampered inter-communication between youth of all nations. It should be a top priority.

The present restricted frequency snippets in the useful DX regions should be superseded by far more generous allocations. Amateur Radio should be given scope to spread its beneficial influence throughout the younger generations, with bands wide enough to permit congestion-free DX working. Is it too much to hope that there may yet arise statesmen with enough foresight and courage to realise that non-commercial communication between individuals by the medium of Amateur Radio can be a potent factor for future international understanding and the effective removal of man-made barriers?

—D. B. KNOCK, VK2 Division.

THE CONTENTS

| | | | |
|---|----|--|----|
| A Transmitter with Low Harmonic Output, Part II. | 2 | Ross Hull Memorial V.h.f. Contest, 1955-56 | 14 |
| A V.h.f. Automatic Tuner | 5 | Olympic Games Communication Demonstration | 15 |
| Lightning Protection for the Transmitting Antenna | 7 | VK3 Award for 100 V.h.f. Contacts | 15 |
| Prediction Chart for Nov., 1955 | 8 | Fifty Megacycles and Above | 17 |
| Use of Electronic Valves | 9 | DX Activity by VK3AHH | 19 |
| Anti TVI Filters for the Amateur Transmitter | 10 | Federal, QSL, and Divisional Notes | 20 |
| | | Correspondence | 24 |

A Transmitter With Low Harmonic Output

PART TWO

BY HANS RUCKERT,* VK2AOU

POWER AMPLIFIER STAGE

Fig. 3: The plate circuit of the driver valve and the grid circuit of the p.a. are equipped with multiband tank circuits which are ideal for this purpose. No bulky coil switching is required. A simple small split-stator variable capacitor of 2×100 pF. and two fixed coils are all that is needed to cover the range from 3.2 to 34 Mc.

When adjusting the coils of these tanks it is important to make sure that the 3.5 and 14 Mc. and the 7 and 28 Mc. settings of the variable capacitor are not the same. If they are, the stage may not only amplify the lower frequency, but may also act as a frequency multiplier, upsetting the purpose of the stage. This test can be easily carried out with a grid dip meter.

Two link lines with coax cable are needed, one for the small coils and one for the two big coils. The highest voltage is always at the spot where the two coils meet (hot end), but the inductive coupling has to be done with two links. The 3.5 and 7 Mc. band uses the big coil (30 turns), whilst 14, 21 and 28 Mc. use the small coil (13 turns).

These two multiband tanks can be coupled with the link lines so closely that again a band-filter effect is achieved, permitting a change of oscillator frequency over a certain range without having to retune the driver multiband tanks.

The two Telefunken valves LS50 are all-glass radar pulse valves with about the same ratings as the 807, but they have half the volume. With 100 watts input the valves are not fully loaded, but this is a precaution against overload and damage to the cathodes if by accident the tank should be not properly tuned or the coupling should be too tight.

The regulated grid bias is set to -130 v. The screen voltage can be reduced from 250v., normally, to 150v. for tuning purposes. To achieve effective and low distortion modulation, it is necessary to modulate the screen grid as well. This can be easily carried out by putting a small power supply choke (20 hy. at 30 Ma.) in the screen grid lead and by-passing the screen grids only for r.f. with a 1000 pF. capacitor each.

To prevent any self oscillation of the p.a. stage, if the antenna is switched off when receiving, the "T or R" relay disconnects the screen supply. No neutralisation was required.

The best parallel feeding choke is still by far the single layer coil of about $3''$ diam. and about 60 turns to get 160 μ H. This choke represents about 100,000 ohms impedance over the range from 3 to 35 Mc. without showing any resonances in this range. Usually r.f. chokes have far too much inductance and sharp pronounced series and parallel resonances. It is hopeless to use those chokes with different coils in series

because you never know if you have 3,000,000 or 3,000 ohms impedance on the different bands. Multilayer coil chokes are very likely to go up in smoke.

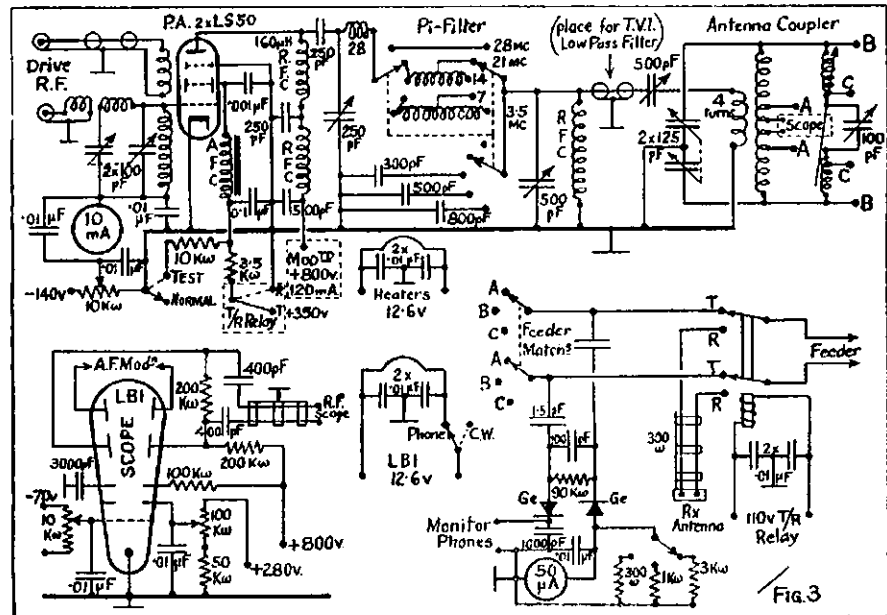
Three ceramic high voltage disc capacitors of 250 and 500 pF. are used to couple the pi-tank to the p.a. or to by-pass r.f. behind the two r.f. chokes. These t.v.-type capacitors are very small and their breakdown voltage is near 30kv. d.c.

The pi-filter is also band-switching. This version of the old Collins filter with its 70 ohm impedance parallel to the output capacitor has several important features: Band-switching is easily done because no coupling coils have to be changed. The 28 Mc. coil is used in place of the lead from the main tuning capacitor to the switch around which the two other coils are arranged. $\frac{1}{2}''$ wide silvered copper strips are used

The place for the low-pass filter is only marked on this circuit. The filter has a cut-off frequency of 35 Mc. and high attenuation from 41 Mc. and higher of at least 50 db. to suppress the third harmonic of 14 Mc., the second harmonic of 21 Mc. and also other harmonics which may otherwise get out to the aerial. No measurable losses by inserting the filter have been found and only the coils of the filter did show a very slight increase in temperature whilst the NPO ceramic disc type capacitors remained cold (power factor better than 0.04% on short waves). This filter will be described in all details in a later article.

ANTENNA COUPLER

To feed any feedline from this transmitter with an unsymmetrical p.a. and pi-filter tank, to assist the low-pass filter in suppressing harmonics, and to



Erratum.—The p.a. stage should show two tubes in parallel. The circuit components are designed to operate under these conditions. Each p.a. tube screen is separately by-passed.

as leads to reduce inductance to wire the pi-network. A ganged three wafer switch with heavy spring contacts (five per wafer on the same contact) changes the coils or taps on the coils and connects also different fixed ceramic capacitors parallel to the output variable capacitor. This capacitor is a 500 pF. receiver type because at 70 ohms we are not likely to have a higher r.f. voltage than 100 volts parallel to this capacitor, even with some mismatch.

Maximum output from the pi-network is obtained with about 300 pF. output capacity at 28 Mc., 400 pF. at 21 Mc., 550 pF. at 14 Mc., 800 pF. at 7 Mc., and 1,200 pF. at 3.5 Mc. A mismatch in the antenna coupler or feeder of the aerial is certain if very much smaller capacity values are giving better results.

have a simple means to couple r.f. to the scope for modulation control, an antenna coupler was used. Here again a multiband tank circuit was employed so that no coil changing or switching of turns was required.

The writer did not have the often-used four-gang capacitor for tuning this symmetrical multiband tank, so the split-stator capacitor between the halves of the small coil was replaced by a single air capacitor using a ceramic extended spindle. For 3.5 to 7 Mc. the hot ends of this tank are the ends of the big coil at "B." here we would have to connect tuned feeders, but 300 or even 70 ohm feeders would be connected closer to the centre of the big coil at "A." The centre of this coil is always r.f. cold, and here we couple the four-turn link, coming from the

*25 Berrille Road, Beverly Hills, N.S.W.

p.a. stage or low-pass filter, via the 500 pF. variable capacitor to the antenna coupler.

This single fixed link is a satisfactory compromise for all bands from 3.5 to 28 Mc. and helps to simplify the matter a great deal. The feeders for the higher frequency bands, like 14 to 28 Mc., have to be put on the two small coils symmetrically. Only the 28 Mc. feeder may be in some cases also placed on the big coil.

The small coils are nearly r.f. cold at their outside ends, but hot at the 100 pF. capacitor "C." The two halves are closely coupled to each other. They are like a single coil with an interruption in the middle. They have to handle all the power at 14 to 28 Mc. and should be wound with heavy wire or tubing.

If the coils of the coupler get hot, then not much power is being transferred to the aerial but is being lost due to mismatch and standing waves. Try different taps.

The writer was using a 130 ft. Zepp antenna for all bands with this coupler and a piece of double co-ax cable 22 ft. long. This cable acted as a quarter wave tuned feeder on 7 Mc., and tuning with the coupler, it works similarly at 3.5 Mc. or any other band up to 30 Mc. The same coupler and piece of double co-ax cable was used as a part of the 70 ohm feeder, extended by 70 ohm twin lead cable, to operate a three element 14 Mc. beam. The shielding of the cable was earthed and helped to prevent the radiation of r.f. from the feeder to other cables and gear in the shack, an important part of the efforts to reduce b.c.i. and t.v.i.

CHECKING MODULATION

It is extremely simple to install a scope to check the modulation. The author would not like to operate a phone transmitter without a scope, because before we can hear distortion and splatter, we are most likely causing trouble to fellow Amateurs.

The scope uses the same power source as the p.a. stage. In this case the deflection plates have to be put on high tension, too. The r.f. deflection plates of the scope (Telefunken type LB1 2½" diameter screen) are coupled via two high voltage ceramic disc type capacitors of 400 pF. and a piece of double co-ax cable to the antenna coupler.

In the receiving position the scope gets a high negative bias so that the screen cannot get burnt.

A section of Fig. 3 shows the circuit of the scope and in another section the output connections with the antenna relay, etc., can be seen. The switch positions A, B or C indicate the different connections the antenna relay can have to the antenna coupler coils, depending on the type of feeder or aerial used. The same aerial is used for the receiver which is connected to the relay via 300 ohm double co-ax cable.

After the thermocouple meters had been burnt out when making tests much earlier, the writer decided to use Ge diodes to measure the r.f. voltage instead of the current. Now two 1.5 pF. bead type ceramic capacitors take a small amount of r.f. to the diodes where one acts as rectifier to feed a headphone to monitor the phone transmission, and the other diode forms the r.f. voltmeter

together with a 50 microamp. instrument. This method is just as good and most likely more accurate at 30 Mc. because not many thermocouple amp-meters are correct over a frequency range of more than 1:3.

GENERAL REMARKS

Before concluding the description of the h.f. part of the transmitter, a few more general remarks may be made. The v.f.o., the five frequency multiplier stages, and the driver stage are built on one chassis, using three sub-chassis, which are arranged in such a way that the v.f.o. and driver are close to the front panel and the multipliers are at the back of the chassis. In the middle are the a.f. stages of the modulator pre-amplifier and the stages of the clipper filter.

The upper chassis carries the p.a. and the antenna coupler, whilst the scope is in the middle and the modulator final is built at the back of the chassis. There are several shielding compartments.

In both chassis all wiring, except certain h.f. leads, is done with shielded wire or co-ax cable. This takes much more time to do, but it pays in the time saved looking for r.f. or a.f. where they should never be. This very important step, together with effective by-passing, using entirely ceramic disc type capacitors, is so necessary to confine r.f. generally, and harmonics especially, to the chassis compartments where they have been generated.

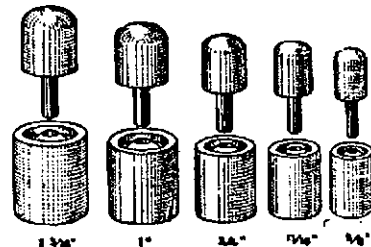
That is why even a very sensitive absorption type frequency meter with a Ge diode and 100 microamp. meter will not detect any harmonics at the grid of the driver, the grid circuit is not tuned to. The same applies to the driver plate and p.a. plate circuit.

All capacitors up to 0.05 uF. are ceramic dielectric capacitors. It may have been even better to use 1,000 pF. and not 10,000 pF. by-pass capacitors to work closer to the self-resonance frequency of these by-pass capacitors. These are so small that 30 would not require more space than a cigarette.

It would be of little value to give accurate coil winding data because a different layout, other capacitors or valves would cause too great variations. The multiplier stages use receiver type plastic coil formers where a plastic screw holds a short wave iron slug. These formers are ¼" diameter. The coupling of the band-filter coils has to be made as tight as possible, especially at 3.5 and 7 Mc. as it would have been impossible to achieve enough coupling without the slugs. This would be simpler if a bigger coil diameter is used. These coils have no stray field because they are so small and the slug helps, too, in this regard.

The coils of the three multiband tank circuits and those of the pi-network are at first wound as estimated, using some old wire of a burnt out transformer. Checking with the grid dip meter shows if the turns are right or if the diameter and coil length have to be changed. When the proper coil dimensions are found, which does not take long with a calibrated grid dip meter, the right wire gauge or copper tubing may be used. In this way all stages can be aligned without switching the transmitter on.

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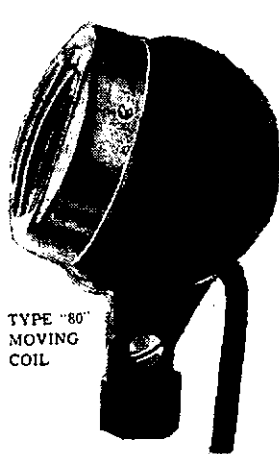


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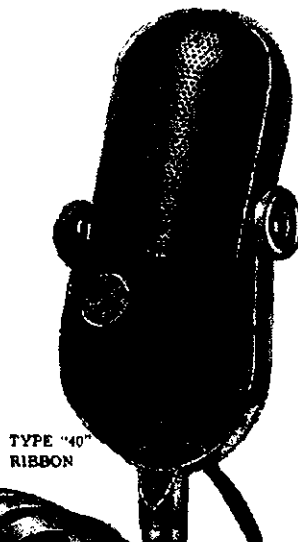
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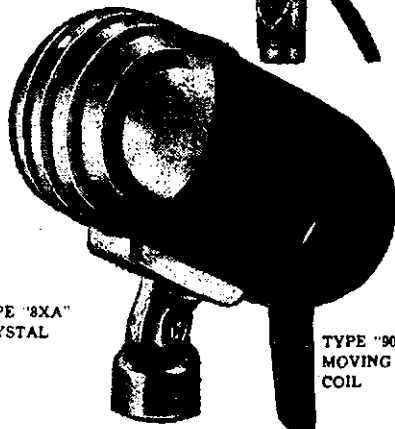


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A V.H.F. AUTOMATIC TUNER

BY DR. H. A. F. ROFE,* VK2HE

ONE wet Saturday afternoon, I was working on some gear in the shack with the 2 metre receiver running, prepared to talk to anyone who came up on the band, but unwilling to devote more than a few scant seconds in every five minutes to tune the receiver. By tea time I had heard and worked no one. The following week I was talking to a local fellow who said, "I called CQ several times last Saturday afternoon and could not get a contact."

On another afternoon last summer, I tuned over a quiet 6 metre band for that elusive DX at 1630 hours, then engaged in a minor task which was completed at 1646 hours. An inspired hunch prompted me to look over the band before leaving the shack. Three hours and many contacts later, after the last signal had disappeared, I retired happily to a belated evening meal. How about an automatic tuner that would draw attention to itself, like the telephone, when a signal came up?

A forward-reading v.t.v.m. type S meter using a 0-1 Ma. movement can be adjusted to give f.s.d. on an S7 to S9 signal with considerably less than a half scale reading on local noise. Could not this 1 Ma. be used to operate a relay, which, in turn, would control an electric motor and, if desired, a warning device?

Out of the junk box came a slow speed motor, a continuously-rotatable three-gang condenser and a very sensitive relay, and around these essential components was built a receiver tuning from 4 to 6 Mc.

The motor is made by a well known firm of electric clock manufacturers and designed to operate a slowly revolving demonstration turntable. This one has a speed of one revolution per five seconds and operates from 240v. a.c.

The gang condenser came out of unidentified v.h.f. gear and has a maximum capacitance of about 100 pF., ideally suited to the LC ratio of each tuned circuit for which special coils were wound to cover exactly 2 megacycles.

The relay derives from the readily obtainable BC357L and can be adjusted to operate over a wide current range from 50 microamperes to about 2 milliamperes. Its field coil has a resistance of 10,000 ohms, and, as its s.p.d.t. contacts will handle up to 10 amperes, they will easily cope with the few mills. drawn by the motor at 240v. a.c. No sparking suppression has been found necessary and the motor causes no electrical interference on the bands used.

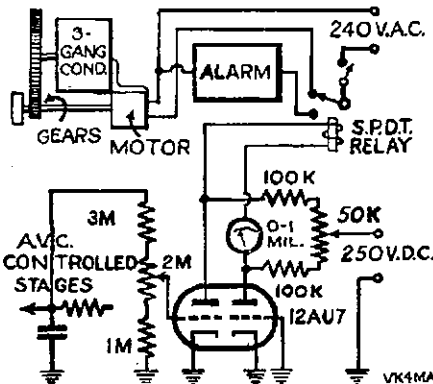
The receiver itself is conventional average Amateur design with an r.f. stage, converter, an i.f. stage at 455 Kc., 2nd detector, a.v.c. and noise limiter, p.a., and provision for Q multiplier, b.f.o., a gated-beam n.b.f.m. discriminator and a 6 metre front end.

Referring to the circuit diagram, it will be seen that the relay field coil replaces the usual 10,000 ohms resistor

in series with the 0-1 Ma. meter. The relay is adjusted to operate at 0.75 Ma. A component in the balanced-bridge circuit, the 50,000 ohm potentiometer, is used to adjust the meter needle to zero. The 2 megohm pot. is related to the 6 megohm bleeder resistance across the a.v.c. line according to the sensitivity of the meter used and to the a.v.c. voltage available. It is the sensitivity control and is adjusted so that the highest prevailing noise peaks will not stop the motor.

The motor is geared to the gang condenser to give it a speed of one revolution per 25 seconds, during which time two megacycles are scanned twice. It can be switched off for manual tuning.

The operation of the device is very smooth on the 2 metre band and at maximum usable sensitivity, that is, when the relay is just insensitive to noise, even a 5 and 7 signal will be tuned in.



The alarm could be a buzzer, bell, siren or what have you.

A fascinating application, suited to the lazy "mail reader," is when two fairly strong stations, in contact, are the sole occupants of the band. When the sensitivity control is set at the minimum level required for the weaker signal to operate the relay, the whole QSO is heard without stirring from the couch until both stations QRT. The tuner then proceeds with its job of scanning the band.

As the receiver is used in conjunction with a crystal-locked 2 metre converter, a few relevant comments would seem appropriate.

The Jones or "Shure Fire" fundamental oscillator is used with a 7.7778 Mc. crystal and a 6J6, first triode tripling and second triode section doubling. A second 6J6 is tripler and mixer. A series cascode 6BQ7 is inductively coupled to a 6AK5 r.f. stage, which is inductively coupled to the mixer.

The converter has its own power supply and is completely isolated from the h.f. receiver, except for the co-ax input lead. These precautions have completely eliminated "birdies" and "break-through" of commercials.

For 6 metre a 7.6667 Mc. crystal, multiplied six times, would bring 50 Mc. in at approximately 4 Mc. Better

still, if the tuner were designed to operate from 3 to 5 Mc., a 7.833 Mc. crystal, multiplied six times for 6 metres, and 18 times for 2 metres, would bring both 50 Mc. and 144 Mc. in at 3.002 Mc. and 3.006 Mc. respectively, the first 6J6 being used for both bands.

If we wish to combine 5 metres and 2 metres at some future date, the problem is easily solved from the equation:—

$$56 - XY = 144 - XZ$$

where X = fundamental crystal frequency.

Y = total crystal oscillator multiplication factor for 5 metres (6, a multiplier of 18, is convenient).

Z = total crystal oscillator multiplication factor for 2 metres (18 is selected).

$$\text{hence } 56 - 6X = 144 - 18X$$

$$\text{therefore } X = 7.3333 \text{ Mc.}$$

To find where 56 Mc. will appear in the h.f. spectrum:—

$$\begin{aligned} \text{I.F.} &= \text{sig. freq.} - \text{osc. freq.} \\ &= 56 - 6 \times 7.3333 \\ &= 12.0002 \text{ Mc.} \end{aligned}$$

Checking on 144 Mc.:—

$$\begin{aligned} \text{I.F.} &= 144 - 18 \times 7.3333 \\ &= 12.0006 \text{ Mc.} \end{aligned}$$

Therefore our h.f. receiver will be required to tune from 12 Mc. to 14 or 16 Mc. to cover 2 or 4 Mc. of the 5 or 2 metre bands.

For those, who are not yet prepared to build a crystal locked converter, or prefer a generally simpler design, the electric motor could be coupled to the small split-stator condenser of a tunable oscillator for either band.

A.O.C.P. CLASS

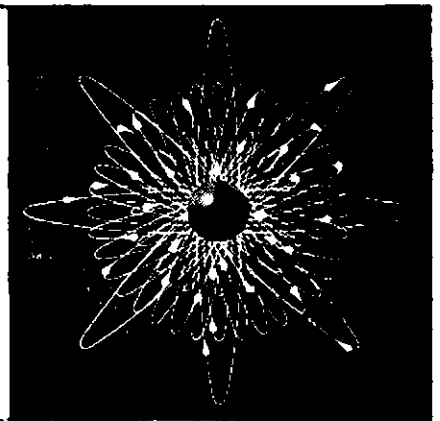
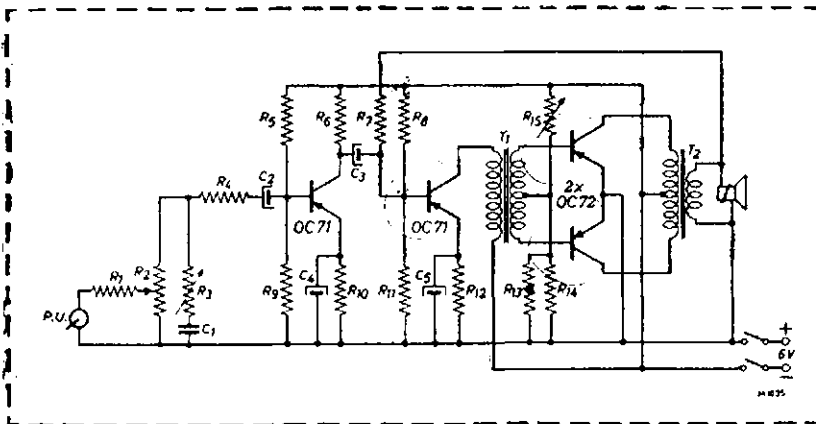
The Victorian Division A.O.C.P. Class will commence on Thursday, 17th November, 1955. Theory is held on Monday evenings, and Morse and Regulations on Thursday evenings from 8 to 10 p.m. Persons desirous of being enrolled should communicate with the Secretary W.I.A., Victorian Division, 191 Queen Street, Melbourne (Phone FJ 6997 from 10 a.m. to 4 p.m.), or the Class Manager on either of the above evenings.



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Lightning Protection for the Transmitting Antenna

BY R. C. CORDERMAN, W4ZG

AN old adage says lightning never strikes twice in the same place. You may not agree with this, but if it strikes you once it won't make any difference whether you do or do not agree.

Radio Amateurs for the most part invite destruction by lightning by neglecting to provide any protection against it. The antenna usually associated with Amateur Radio transmitting equipment is most vulnerable to lightning due to its length and height. To validate your insurance, your antenna installation must comply with the National Board of Fire Underwriters Electrical Code which says:

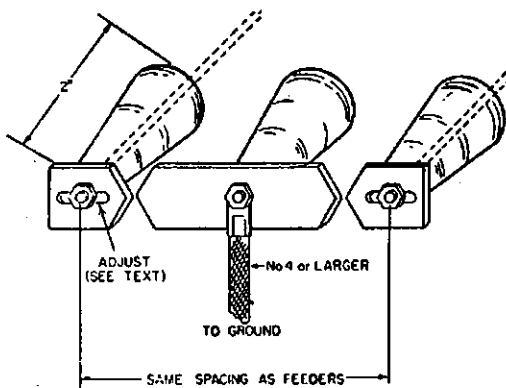
Lightning Arrestors.—Transmitting Stations. Except where protected by a continuous metallic shield (co-ax), which is permanently and effectively grounded, or the antenna is permanently and effectively grounded, each con-

• Lightning protection for the Amateur transmitting antenna, especially when open-wire feeders are used, has been largely neglected. W4ZG points out the dangers involved and offers some simple solutions.

Penna., an experience was observed which will be of interest in this connection. The antenna at 8XC consisted of 10 wires 600 feet long, approximately 165 feet above the ground at its centre. It ran across a gully, at the bottom of which was a mainline railroad track. When locomotives pulling heavy trains passed under the antenna, the static charge built up was sufficient to cause flash-over of an 8-inch gap. The flash

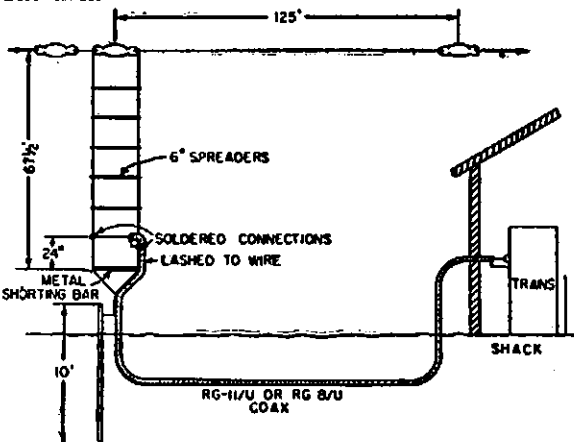
of lightning arrestors provided for residential broadcast and television antennae may be suitable for very low power installations, but where higher power is used, they are inadequate, since the radio frequency voltage on the transmission line is usually enough to cause them to operate, i.e. flash over.

During the early Thirties, advice was obtained from the Naval Research Laboratory at Washington, D.C., on a suitable grounding arrangement for lightning protection for a 1-kw. installation. It was their suggestion that a spark gap be provided between each of the two open-wire feeders and a centre contact, grounded with No. 4 or larger wire. It was recommended that $\frac{1}{8}$ " x $\frac{1}{8}$ " flat brass rod shaped as shown in Fig. 1 be used for the gaps. Each of the gaps should be set sufficiently far apart so as to prevent flash-over during normal



← Fig. 1.—A simple lightning arrestor made from three stand-off or feed-through insulators and sections of $\frac{1}{8}$ " thick brass or copper bar.

→ Fig. 2.—Sketch of co-axial fed grounded Zepp antenna. Adjustment is discussed in the text.



ductor of a lead-in for outdoor antenna shall be provided with a lightning arrestor or other suitable means which will drain static charges from the antenna system.

A similar requirement is applicable to a receiving antenna should it extend outside the building in which the receiving equipment is located.

Many years ago my antenna was struck by lightning. At that time, there was an insurance requirement which said that a 100-ampere switch should be used for grounding the antenna when the station was not in operation. The lightning completely destroyed most of the antenna wire, burned the wooden base of the lightning switch and burned the insulation off the No. 4 copper grounding wire between the switch and the ground stake. As the switch was in the grounded position, no damage to the house or radio equipment resulted.

Without adequate grounding, hazardous voltages can build up on an antenna due to other causes. About 1920, while attending Carnegie Tech., Pittsburgh,

repeated approximately every five seconds while the engine was immediately beneath the antenna and less frequently when it was approaching or leaving the area below the antenna.

LIGHTNING ARRESTORS

What steps should we take to protect ourselves and our equipment against these hazards? You will observe that the Electrical Code specifies that the lead-in may be a coaxial cable, the shield of which is permanently and effectively grounded. This means that a ground connection, using No. 4 wire or larger, should be made to the shield of the co-axial cable at the point where it is nearest to the ground outside of the house. If the cable can be run underground, a grounding stake should be located at the point where the cable enters the ground. The grounding stake, to be effective in soils of average conductivity, should be not less than 10 feet long, and if possible, plated with a metal which will not corrode in the local soil.

When open-wire feeders are used, a lightning arrestor is required. The type

operation of the transmitter. It was found that because of the standing waves on the open-wire line a gap of approximately $\frac{3}{16}$ inch was necessary.

This device worked very well during thunderstorms as it would start sparking intermittently when a storm was approaching. As the storms passed over the immediate area, the frequency of discharge would increase. During heavy thunderstorms, there was a steady stream of sparks at the gaps. It was possible to operate the transmitter with relatively little effect on its performance even while the static charges were jumping across the equipment, but this was seldom done because of a personal reluctance to be so close to the antenna system.

It has been my belief that a properly installed spark gap on an antenna system drains off sufficient static from the immediate area to prevent a direct hit. This view stems from the fact that during the twelve years these gaps were in use there was never an occasion when a lightning hit came closer to our house than a half block when a neighbour's house was struck. This

* Reprinted from "QST," July, 1955



"THE LANDING OF CAPTAIN COOK" by PHILIP FOX. By Courtesy of the NATIONAL GALLERY OF VICTORIA.

"CAPTAIN COOK DISCOVERS NEW CONTINENT"

This was stirring news to the world of 1770, but it was three months before King George III of England heard about it.

Today, news like this would be flashed round the world by radio.

In Australia, from Cape York to Hobart, from Brisbane to Perth, radio listeners hear immediately about any dramatic national incident:

"RADIO AUSTRALIA flashes daily news around the world. **Jocelyn Terry** is shown here broadcasting messages from home to Australians in lonely outposts in Antarctica.

RESEARCH AND THE ELECTRICAL INDUSTRY

For years Shell scientists have worked to improve various parts of electrical equipment, such as enamelled wires, insulating materials, and resins which effectively seal radio condensers.

Shell also helped in the initial development of low vapour pressure oils, greases and sealing compounds necessary to create the required vacuum in valves. These and other problems solved in SHELL laboratories have enabled radio manufacturers to produce the high-fidelity electrical goods marketed today.



could have been a happenstance, but it is the fact, nevertheless.

In the Pennsylvania Dutch country around Lancaster and York, most barns nowadays are protected from lightning by a length of old trolley wire mounted on poles extending about 10 feet above the roof. Both ends of the wire are grounded and, so far as can be learned, no barn so protected has suffered lightning damage.

DIRECT GROUND CONNECTION

Many of our modern antennae permits relatively simple methods of direct ground connection, which do not interfere with the operation of the antenna. Rotary beams using a T or gamma match may have the centre of each of the elements, including directors and reflectors, grounded to the tower on which they are mounted. Two and six metre beams should have the supporting pole grounded. If the antenna is mounted on a wooden pole or on the top of a house, a No. 4 or larger wire should be extended from the beam to the ground, using insulators where the wire comes close to the building. The ground wire should be spaced away from metal objects such as gutters, etc., or should be solidly grounded to them. If the connection to such objects is not a good one, but is variable in resistance, it may be a source of spurious signals when excited by the transmitter. This often results in interference with your

own or your neighbours' broadcast or television reception.

For the past seven years, the antenna shown in Fig. 2 has been used at W4ZG, Winston-Salem, N.C. It gives what appears to be good lightning protection. It hasn't been hit yet. And best of all, signal reports have been more than satisfactory on power comparisons made with other stations under like conditions.

The antenna may properly be called an end-fed Zepp. Since much of the work done here is on the Tar Heel Net frequency of 3865 Kc., the antenna was cut to centre on this frequency. Operation is not confined to this frequency, however, as many contacts are made even at the high end of the band without any retuning or adjustment of either the driver or final stage tuning circuits.

The antenna is 125 feet long and the quarter wave Zepp feeders are 62½ feet long, spaced 6 inches apart. The feeders are tied together at the lower end and grounded. A metal rod 6 inches long is used as the lowest spacer. RG-11/U (72 ohm) co-ax is used to feed the Zepp feeders. The shield of the co-ax is attached to the feeder which goes to the antenna and the centre conductor goes to the other feeder which dead ends at the antenna. The point of attachment is about 24 inches from the shorting bar. The co-ax is tied to the feeder to which the shield is connected and follows it back to the shorting bar and then follows the grounded lead to the ground stake and from there runs underground to the house.

By now you are wondering why the shield is connected to the feeder which goes to the antenna instead of being attached to the feeder which dead ends. Actually, it makes no difference which way you do it, except that if you use a bridge to check the standing wave

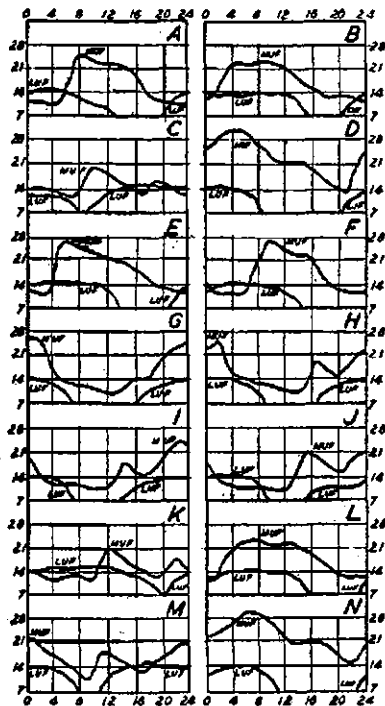
ratio, you will have more trouble induced voltages from local broadcast stations if you reverse the connection since the feeder plus antenna picks up much more of this broadcast field voltage than the dead-ended feeder will pick up.

Another benefit from this antenna which was entirely unexpected is the reduction in harmonics reaching the antenna. At the desired frequency, the 4 feet of wire between the ends of the co-ax and the shorting bar serve as a transformer to match the impedance of the co-ax to the impedance of the open-wire feeders. At other frequencies, however, this is not the case, and the higher-order harmonics are effectively suppressed. No other filter is used as W4ZG for this purpose and there is no observable interference on a television receiver connected to an antenna just 15 feet away from the Zepp feeders.

Should you wish to use this antenna on other bands, you may do so by reducing the dimensions in accordance with standard antenna formulae. The point of connection of the co-ax to the Zepp feeders is not critical and may vary somewhat under different surrounding conditions. It can best be done by measuring the s.w.r. at the transmitter end of the co-ax at several different test positions, but if no bridge is available, the connection of the co-ax to the Zepp feeders may be made 24 inches from the shorting bar for 80 metres, 12 inches for 40 metres, 6 inches for 20 metres, and 3 inches for 10 metres. It is desirable that the feeder spacing be reduced at the higher frequencies as the length of the shorting bar is a factor in the impedance match.

1 For antenna systems in which the antenna and feeder lengths are the same as above in terms of wavelength.—Editor.

PREDICTION CHART FOR NOV., '55



A—Eastern Aus. to West. Europe—Short Route.
B—Eastern Australia to South Africa.
C—Eastern Aus. to West. Europe—Long Route.
D—Eastern Australia to Far East.
E—Eastern Australia to Mediterranean.
F—Western Australia to Western Europe.
G—Eastern Australia to North West U.S.A.
H—Western Australia to North West U.S.A.
I—East. Aus. to North East U.S.A.—Short Route.
J—Western Australia to North East U.S.A.
K—East Aus. to North East U.S.A.—Long Route.
L—Western Australia to South Africa.
M—Eastern Australia to Central America.
N—Western Australia to Central America.

USE OF ELECTRONIC VALVES

Recently, while building a small transmitter, the valve driving the 807 would not seem to function correctly. It was one of the miniature 9-pin all glass types. Investigation showed a short between the control grid pin and another pin. This other pin was labelled, in the handbook, "IC," which we know stands for "internally connected." It was assumed this meant connected to cathode and it had been strapped to the cathode tag on the bottom of the valve holder for convenience in wiring and layout.

On reading through the "British Standard Code of Practice on the use of Electronic Valves" it is learned that any pin labelled "IC" should be severely left alone. This pin, or any pin labelled "IC" may be connected anywhere or to any other electrode in the valve without the connection being specified, in fact, it states that valves of the same type, but of different manufacture, will most likely be connected differently internally. It even states that valves from the same manufacturer may be connected differently, depending on when they were made.

There is a lot of interesting "dope" in this book for those who employ a large number of valves and for Amateurs, too. For instance, it recommends that the cathode to heater capacity never be

put across a tuned circuit. This is quite common practice with Amateurs and probably accounts for some of the unsatisfactory signals.

It further recommends that cathode keying should not be so arranged as to leave the cathode "in the air" when the key is up. A maximum resistance of 0.25 megohm should be connected between cathode and heater. Similarly with screen grid keying. This, of course, is not generally used anyway as it does not always kill the signal when the key is up.

The book has plenty to say about over-running valves—which in any language is to be depreciated. It is well known that the envelope should be kept cool by either plenty of natural air circulation or forced draft. Since reading this, a small fan has been arranged to blow the final! It is probably not so well known that it does not matter much—within reason—what the ambient temperature of air is that circulates around and past the valve, that is, tropics or the North Pole, as long as there is sufficient air.

One final tip. It is bad practice to use spare valve holder contact lugs as anchoring points in circuit wiring. Sometimes the pins go inside the valve and although not connected, the application of h.t. can upset the functioning of the valve.

—Reprinted from "R.S.C. Bulletin," March-April, 1955.

ANTI

ANTI-TVI FILTERS FOR THE AMATEUR TRANSMITTER

BY H. F. RUCKERT,* VK2AOU

cannot be said often enough that we must first build the transmitter with as low harmonic power output as possible and the chassis and shielding cabinet must be free of r.f. or the best low-pass antenna filter and mains line filter will be of very little help. The filter will not cure all ills we may have built into our transmitter. How this cure can be effected, before we use filters, was described by the writer in an earlier issue of "Amateur Radio." The filter on our transmitter will not offset the design features the neighbours' t.v. receiver may lack, making it hard to prevent t.v.i.

The following description of a typical low-pass filter shows how we can plan, calculate, build, test and use these filters. In spite of a few formulae there are no more mathematics involved than our children learn now at school. If you know how to use a slide rule and a grid dip meter, it will not take you longer than 20 minutes to calculate the filter components and frequencies, and the aligning can be done in a further 20 minutes.

Fig. 1 shows how a low-pass filter can be inserted between the pi-filter network final of our transmitter and the antenna coupler.

The pi network helps to reduce harmonic output, so does the antenna coupler. The coupler permits us to use any aerial we may have and still have the benefit of the filter. The filter can only work efficiently if we have a specified impedance on both filter terminals. Of course there must be a low standing wave ratio of less than 2:1 or we will overload the filter components, causing their failure or excessive losses.

The filter we will describe now can be placed anywhere in a 70 ohm flat co-ax line, even 52 ohm cable will not make much difference to the filter performance.

If we do not use the antenna coupler we can go directly from the filter output terminal to the flat line (52 to 70 ohm cable), which may be twin lead or co-ax cable. If a pi-network tank is not used a link coil has to be placed at the filter input and coupled to the tank circuit. The method shown in Fig. 1 has several advantages over other possibilities as outlined above, because any band below the filter cut-off frequency and any aerial may be used regardless of the type of feeder we may have.

Fig. 2 is the attenuation curve we can expect with the type of filter we are planning now.

The h.f. DX hunter will be interested in suppressing the 3rd harmonic of 14 Mc., the 2nd harmonic of 21 Mc., and of course any higher harmonic frequency. Therefore he does not want any attenuation below 30.5 Mc., but he wants full attenuation at 41 Mc. and higher.

The v.h.f. Amateur wishes to get 60 Mc. and 148 Mc. without losses, but the

3rd harmonic of 60 Mc. should be attenuated and also any harmonic of higher order.

Attenuation of about 60 db. (1000:1) of the undesired harmonic between the input and output terminals of the filter is usually regarded as sufficient. A filter with more sections and a higher theoretical attenuation, may not pay because the transmitter chassis may not be free enough of r.f., including harmonics, that may be radiated to the mains, water pipes, gutter, etc.

Fig. 3 shows the low-pass filter, now an integral part of practically any Amateur transmitter, home-built or manufactured, in U.S.A. at the present time.

The filter starts, from left to right, with an M-derived section, there is a constant K-pi section in the middle, and again symmetrically an M-derived end section.

The formulae we find in the A.R.R.L. Handbook, and in other text books, are always correct for a chain of similar filter sections. If we use only one of each, we have to change the formulae as follows:

$$L1 = m \times Lk$$

$$L2 = \frac{1 - m^2}{2m} \times Lk$$

$$m = \sqrt{1 - \left(\frac{fc}{f\omega}\right)^2}$$

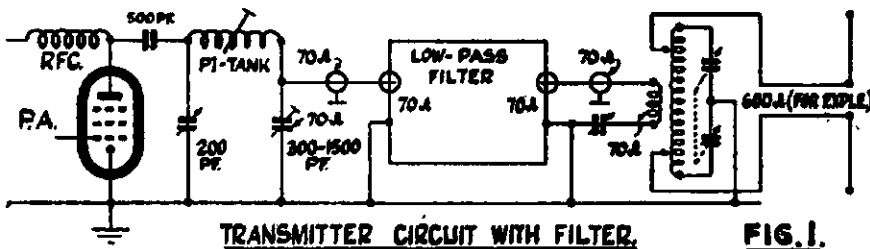
L1, L2, and Lk—See Fig. 3.
m = values between 6 and 8 (often used), m = 6.5 in our example.
fc = the cut-off frequency where the attenuation begins to rise steeply (in c.p.s.).
fω = a high frequency with extremely great attenuation (in c.p.s.).

$$Lk = \frac{R}{\pi \times fc}$$

$$Ck = \frac{1}{\pi \times fc \times R}$$

$$C2 = \frac{1}{2} m Ck$$

where—
Lk, Ck is in henries.
Ck, C2 is in farads.
R in ohms.
fc in c.p.s.



TRANSMITTER CIRCUIT WITH FILTER. FIG. 1.

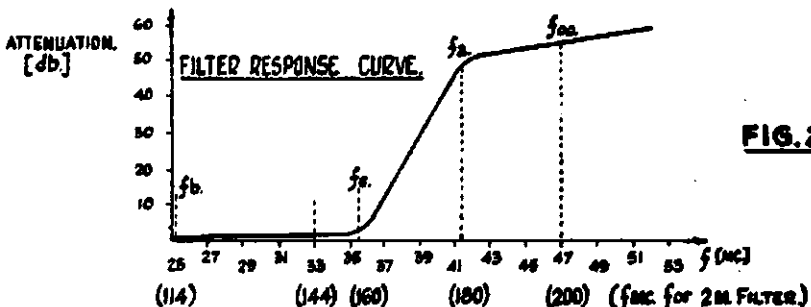
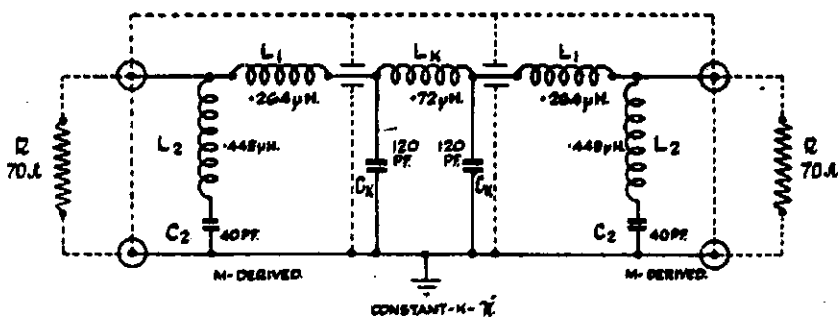


FIG. 2.



COMPONENTS OF THE FILTER. FIG. 3.

* 25 Berrille Road, Beverly Hills, N.S.W.

R is the input and output impedance, 52 or 70 ohms for example, depending on the type of cable and feeder used.

C2 and Ck are filter capacitors, see Fig. 3.

We get so far if we study the Handbook, but we would like to know how to find fa where the attenuation has the first high value. Making a filter with the formulae given above and m near 6.5, we will find that:

$$f_a = \frac{1}{2} (f_c + f_m)$$

when we check the completed filter with the grid dip meter. Since we like to determine fa first and calculate fm we can say:

$$f_m = 2 f_a - f_c$$

With these formulae we can calculate all filter components. We only need now to find out the frequency fb to be able to tune the constant K section of the filter.

COIL TABLE

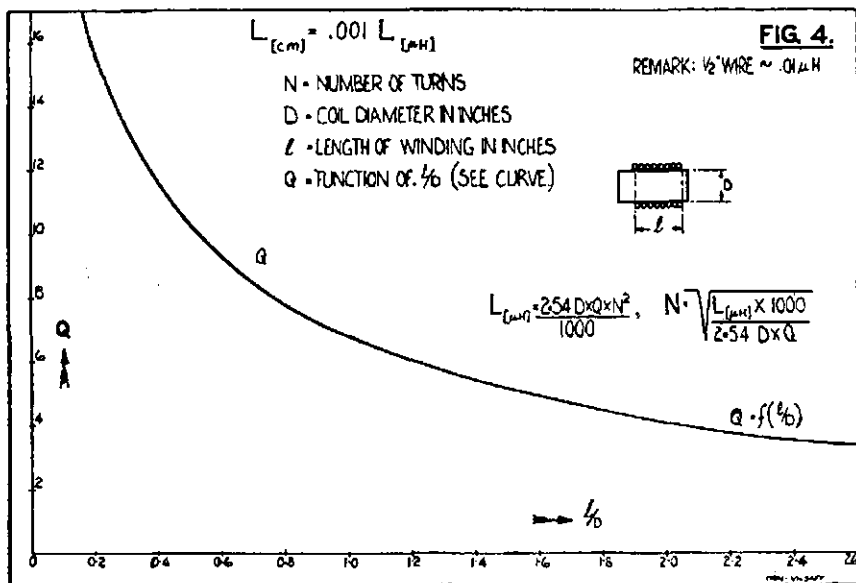
| Coil | Coil Diam. | Coil Leng. | Turns | Inductance |
|------|------------|------------|-------|------------|
| L1 | 1/2" | 3/4" | 6.5 | 0.264 uH. |
| L2 | 1/2" | 3/4" | 9 | 0.445 uH. |
| Lk | 1/2" | 1 1/4" | 13 | 0.720 uH. |

No. 14 to 18 s.w.g. wire.

The capacitors C2 and Ck are preferably NPO (temperature coefficient of the capacity zero) ceramic disc type capacitors with a power factor better than 0.05%. For Ck, tubular stand-off capacitors of NPO dielectric are very easy to mount. With a standing wave ratio on the co-ax line where the filter is installed of not more than 1.3:1, receiver type capacitors are satisfactory for transmitter of several 100 watts input.

ALIGNING FILTER

The alignment of the filter is no problem with a calibrated grid dip meter using the following procedure:



$$f_b = \sqrt{\frac{25.33}{Lk \times \frac{1}{2} Ck}}$$

where f is in Mc., L in uH., C in pF.

With m values of about 6.5, fb will be about as follows:

$$f_b = \frac{f_c + f_m}{3.2}$$

We know now all C and L values and the three frequencies, the filter sections will have to be tuned to. We have also determined the frequency where we can expect full attenuation (fa).

Fig. 4 gives us the formula and the curve for the coil form factor [Q = f(1/D)] and it is only a matter of minutes to calculate the coil turns and dimensions if we have a slide rule. All explanations are on that graph.

For our special example a coil table may be given with the dimensions of the coils used in the filter after these had been correctly tuned so that any lead inductances are already taken into account, as these do not appear in the coil calculations. Half an inch of wire represents about 0.01 uH.

high we get holes in the attenuation curve at high frequencies which may make the filter useless.

3. The third step is to disconnect the already tuned coils from Lk and use only the components as shown in Fig. 8.

By changing the spacing of coil Lk we can tune this section to fb = 25 to 28 Mc. Comparing measurement and calculations we will see that they agree even at these frequencies up to within 10%, proving that theory and practice must not always be hopelessly apart.

We now connect a three-turn link to the filter input and the Ge diode r.f. voltmeter (calibration is not required) to the output terminals of the filter. Also parallel to the terminals we have to put 50 ohm low inductive carbon resistors which will have a somewhat higher impedance depending on their



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Fig. 5 demonstrates how the g.d. meter can be coupled with a single loop link to the small coils in their shielding compartments. For aligning we do not need the three turn link on the left side, the two 50 to 70 ohm matching resistors nor the Ge diode r.f. voltmeter on the right side of the circuit.

1. The first step is to separate L2 on each filter end from the rest of the circuit and we have to make a very short short-circuit connection at the co-ax cable connectors. This is shown in detail on Fig. 6. With the g.d. meter we check the tuning of L2 to fm = 47 Mc. by varying the spacing of the coil turns. This is done on both filter ends with the L2 coils.

2. The second step is to wire the two filter sections as shown in Fig. 7, which means that Lk is removed as well as the short over the co-ax terminals. With the g.d. meter coupled to the L1 coils (one after the other), we adjust only L1 to the cut-off frequency fc = 35.5 Mc. by spacing the coil turns correctly. If we tune L1 to a too low frequency we get attenuation in the 28 Mc. band. If we tune this coil too

construction. Coupling the g.d. meter now direct to the three-turn link and tuning from 3.5 Mc. up to 30 Mc. will not show any attenuation at all if we take into account that our g.d. meter does not give a uniform output of r.f. over the whole range. There is a very slight attenuation at 30.5 Mc., of less than 1 db. Three db. will be observed at 35.5 Mc., and now comes a steep drop in reading of the output meter. At 40.8 Mc. we can increase the coupling to the g.d. meter and by carefully tuning the generator we will see that the sharp peak of high attenuation is near 41 Mc. Even the tightest coupling to the g.d. meter will not give any output voltage reading. This shows that the attenuation must be at least 40 db. and 50 or more db. can be expected.

It is a good idea to tune up to 200 Mc. to ascertain if there are any holes in the attenuation curve caused by self resonance of capacitors with their leads. Re-arranging of components will help.

The low-pass filter is now ready to be placed in the transmitter as indicated by Fig. 1. A test run with different transmitter output frequencies will

prove that there is no attenuation on any band which may effect the DX efficiency.

The writer had a small electric globe parallel to the dummy antenna and was checking the output, with or without the filter, maintaining the same drive and input to the final, with a photo electric exposure meter. There was no detectable difference.

After running the transmitter with full power for 30 minutes with the filter inserted, the lid was opened, and only the coils showed a very slight increase in temperature of not more than 30°F. whilst the ceramic capacitors remained cool.

If our transmitter was shielded, as outlined before, the rest of the radiated harmonic energy should now be attenuated by a ratio of 300 or 1000 to 1, which should be enough in most cases.

These filters may be built for other impedances or symmetrically as well or with more constant K π sections.

Fig. 5 shows the layout of the components. It is important that C2 and L2 are soldered as closely as possible

to the co-ax connectors. L2 should be placed at right angles to L1 to reduce magnetic coupling.

The writer used, as shielding for the filter, three paper capacitor cans which were soldered together to give the right size of 2 x 2 x 7/8 inches. Ceramic feed-through insulators were used between L1 and Lk. The lid should have good electrical contact to the walls between the sections and all the way around the edge and should be bent over the cans. At least six screws should hold the lid in place. The filter box must have a very good contact with the r.f.-free transmitter chassis.

A MAINS LINE FILTER

The now described untuned filter (Fig. 9) is mainly used to prevent r.f. from the transmitter power supplies escaping along the mains cable. Similar filters are recommended for use in all cases where r.f. may try to leave the shielded h.f. stages via the cables going to the power supplies.

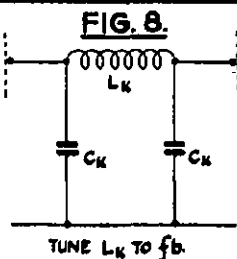
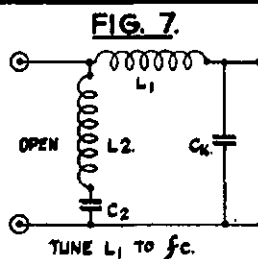
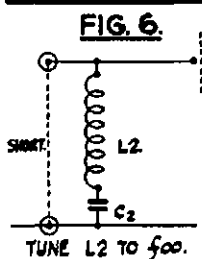
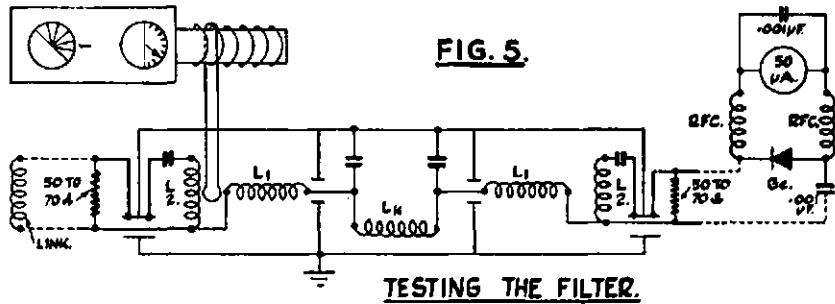
With equal results we can, and should, filter microphone, morse key, monitor or other control cables coming from the transmitter. For the microphone cable we would have to use 100 pF. capacitors to avoid by-passing the a.f.

There is not much to say about the construction of these filters. The coil or coils are wound on 1/4 inch formers which could be bakelite tubes. The winding is 3 inches long, using No. 16 or 18 gauge copper enamelled wire.

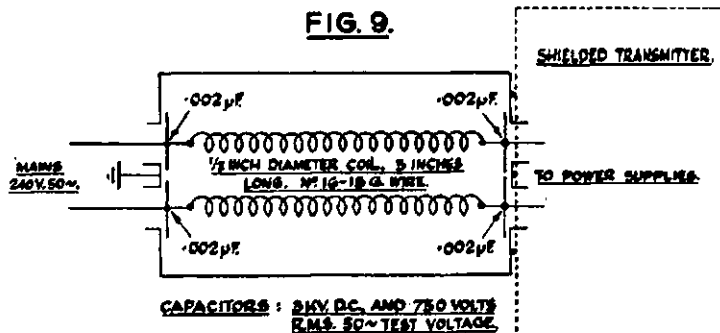
It is important to use only co-axial capacitors because no other style will have short enough leads, not even H-K ceramic discs, and therefore a low enough inductance to be effective at the frequencies which must be by-passed.

Ceramic button type capacitors of about 2000 pF. capacity, which are directly soldered to the shielding can, are ideal. The coil leads are soldered to the centre rivet. H-K ceramic capacitors can now be made to take any d.c. or 50 c.p.s. voltage we may have in our Amateur transmitters. Tubular feed-through capacitors of sufficient wall thickness to work safely can be used too.

Even a t.v. receiver advertised to be "the world's best receiver" may lack front end selectivity and a high-pass filter could help. This type of filter may be described later.



HOW TO TUNE THE FILTER SECTIONS.



MAIN LINE FILTER.

DRN-VK2AFF.

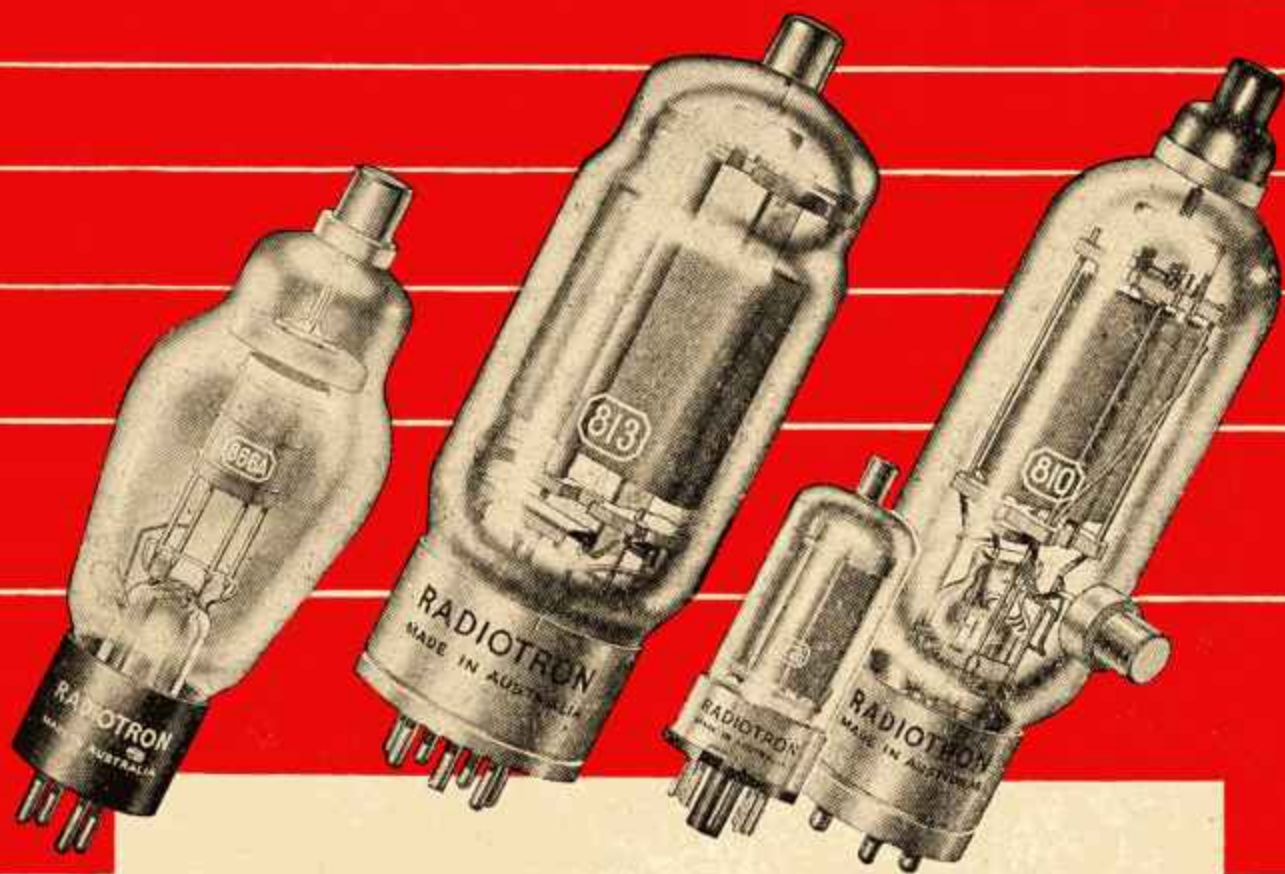
AWARDS FOR TECHNICAL ARTICLES

Following the announcement in the November, 1954, issue of "A.R.," Awards for Technical Articles have been made to: N. L. Southwell, VK2ZF, "Wide Band Audio Phase Shift Networks," June; J. R. C. Miller, VK2ANF, "The New Look in Frequency Modulation," October; G. M. Bowen, VK5XU, "Twin Lead Sprigs," April.

DO NOT FORGET!

The closing date for copy for the January issue is 2nd December.

RADIOTRON POWER VALVES



Today's high standards of radio performance are dependant upon the use of first quality components.

Radiotron valves are manufactured to exacting standards which ensure you of the ultimate in performance at all times.

Be sure of the quality and consistency of your signals by using Radiotron Power Valves.

Important: When ordering valves, be sure to mention "Amateur Radio" so that priority can be given to your order.



RADIOTRON

AMALGAMATED WIRELESS VALVE CO. PTY. LTD.

Ross Hull Memorial V.h.f. Contest, 1955-56

RULES

1. The Contest will take place in the 50-54 Mc., 56-60 Mc., 144-148 Mc., and 288-296 Mc. bands, and will commence at 0001 hours E.A.S.T. on 1st December, 1955, and will continue until 2359 hours E.A.S.T., 31st January, 1956. Interstate, Intrastate and Overseas contacts are allowed. Cross-band working is not allowed. L.A.O.C.P. licensees are encouraged to work on the 144 Mc. and 288 Mc. bands.

2. Only one contact on each band with any one station, per twenty-four hours, commencing midnight E.A.S.T., to count for scoring purposes.

3. Exchange of a serial number will constitute a contact.

4. The serial number of five or six figures will be made up of the RS (telephony) or RST (telegraphy) report plus three figures which may commence with any number between 001 and 100 for the first contact and which must increase in value by one for each successive contact, e.g. if the number chosen for the first contact is 050, then the number for the second contact must be 051, for the third 052, and so on. If any contestant reaches 999, then he must start again 001, and continue as above.

5. Scoring.—Points allotted, apply to each band worked.

Interstate and Oversea Contacts: 5 points for the first contact with any particular station, 4 points for the second, and so on to the fifth contact for 1 point, after which no more scoring

contacts with that particular station can be made on that band, for the duration of the Contest; e.g. VK5ABC may work VK2XYZ five times on each of the four bands, for a total of 20 contacts.

Intrastate Contacts (for VK Call Areas only).

(i) Five points for the first contact with any particular station, four points for the second and so on to the fifth contact for one point, after which no more scoring contacts with that particular station can be made on that band for the duration of the Contest.

(ii) Stations located beyond a radius of 100 miles of any Capital City (Federal Capital excepted) will double their score for ALL contacts; e.g. VK3ABC (Mildura) works VK3XYZ (Melbourne) for the first contact: VK3ABC scores 10 points, while VK3XYZ scores 5 points. If VK3ABC works VK3PQR at Red Cliffs, both score 10 points for the first contact.

6. Logs shall contain the following information: Date, time (E.A.S.T.), band, call of station contacted, serial number sent, serial number received, points claimed for the contact, and at the foot of each page the total points claimed; and at the end, the grand total.

Logs shall be signed by the competitor, together with a declaration to the effect that the station was operated strictly in accordance with the rules, and spirit of the Contest. The decision

of the Federal Contest Committee shall be final and binding.

Logs must be received by the **Federal Contest Committee, Box 1234K, G.P.O., Adelaide, South Australia**, not later than **1st March, 1956**.

7. Entries will be accepted from all States of the Commonwealth and Districts of New Zealand. Check logs from other countries will be appreciated by the Contest Committee.

8. The regulations governing the control of Amateur Radio in each contestant's country must be observed.

9. Awards: (a) For the purpose of Awards, Northern Territory will count as a separate call area.

(b) The outright winner of the Contest within the Commonwealth of Australia will receive an appropriately inscribed Certificate.

The top financial member of the W.I.A. will hold the Ross A. Hull Memorial Trophy for a period, and in addition will receive an appropriately inscribed photograph of the Trophy.

(c) The highest scorer in each call area in Australia and New Zealand will be awarded a Certificate. The Federal Contest Committee reserves the right to make any additional Awards.

(d) A Certificate will be awarded to the L.A.O.C.P. licensee who gains the highest score in each call area. (Operation must be confined to the 144 Mc. and 288 Mc. bands with A3 emission, to conform with the Departmental Regulations.)

10. The decision of the Federal Contest Committee will be final and binding upon all matters pertaining to this Contest.



SPECIAL
BRIGHT STAR RADIO are pleased to announce an addition to their line of Crystals. We are now manufacturing—

VACUUM MOUNTED CRYSTALS

for general communication frequencies in the range 3 to 14 Mc.
Higher frequencies can be supplied.

ADVANTAGES OF THIS TYPE—

- (1) Approximately three times the activity of normal plated crystal due to the absence of air damping.
- (2) Better frequency stability due to the absence of air friction.
- (3) Plating cannot deteriorate with time and cause frequency shift.
- (4) Two or more crystals can be mounted in the one envelope and thus save space.

Price depends on the tolerance and frequency required, and will be quoted upon request.

BRIGHT STAR CRYSTALS may be obtained from the following Interstate firms: Messrs. A. E. Harrold, 123 Charlotte St., Brisbane; Gerard & Goodman Ltd., 192-196 Rundle St., Adelaide; A. G. Healing Ltd., 151 Pirie St., Adelaide; Atkins (W.A.) Ltd., 894 Hay St., Perth; Lawrence & Hanson Electrical Pty. Ltd., 120 Collins St., Hobart; Collins Radio, 409 Lonsdale St., Melbourne; Prices Radio, 5-8 Angel Place, Sydney.

BRIGHT STAR RADIO

46 EASTGATE ST., OAKLEIGH, S.E.12 UM 3387



OLYMPIC GAMES COMMUNICATION DEMONSTRATION

Following an approach to the W.I.A. by the Olympic Games authorities, the 2 metre gang was organised by Len Moncur, 3LN, to demonstrate the possibilities of conducting radio communication between the Melbourne Cricket Ground and various spots along the route of the marathon walking events of the forthcoming Olympic Games. The route is to Springvale via Dandenong Road and return to the M.C.G.

The basic requirement was for a 144 Mc. base station set up at the M.C.G. working to mobiles along the route. Past experience of field days, mobile tests, fox hunts, etc., gave full support to the suitability of v.h.f. for the job. After several discussions at the V.h.f. Group meetings, it was decided that, at least for this test, a better base station location than the M.C.G. site would not be amiss, and Alf 3IE, checking with a contour map, came up with the suggestion of the Malvern Town Hall clock tower, this being not only suitably situated, but also of considerable altitude. Alf arranged access to the building and our thanks are due to him and to those who gave the necessary permission.

Being now assured of good signals from the mobiles, it was deemed that it would be a simple matter to relay two way via radio link direct to the M.C.G. if necessary.

3IE and 3YS, armed with a 2 metre transmitter and receiver and a 5 over 5 portable beam, set up the base station in the small room above the clock, with the beam mounted on the open top landing. The wonderful view obtainable from the tower provided compensation for the long climb and visual justification for the selection of the site. The weight of the equipment and general set-up of the stairs made it necessary to remove the various sections from the transmitter and receiver rack and carry them up piece by piece and re-assemble. The convenient construction of 3TO's rig made this a relatively easy

matter, and by 12 noon the base station was in operation. 3ZBJ and friend, John Hamilton, provided a test contact, and responded willingly to a request for assistance in the afternoon when the gear had to be dismantled and removed.

At 2.30 p.m. four mobiles, 3VZ, 3ALY, 3ZBU and 3APB, met two officials of the Olympic Games Athletic Committee at the M.C.G. 3LN was unable to participate due to a bereavement in his family. It was arranged that one of the officials would accompany 3VZ on a tour of the route, followed at intervals by 3ZBU and 3APB; all to maintain contact with the base control station operated by 3IE. 3ALY remained at the M.C.G. to enable the other official to hear the base station contacting the mobiles with their position reports. 3ALY later moved off along the route, and all cars maintained contact with the base station throughout the test, with excellent signals both ways.

On the return journey, further tests were made including working between the cars. Tests from so-called "dead spots" were quite successful.

All gathered at the Town Hall for a discussion and inspection of the base station site. Officials were extremely pleased and enthusiastic with the results and voted it the best and most successful demonstration they had witnessed. Their congratulations to the Institute were very encouraging and provided compensation for the members' efforts. We, in turn, thank all those who participated so enthusiastically. It is hoped that outside interests will not preclude the Institute from putting its efforts and results into practice.

The advisability of all mobiles working on a spot frequency for such a job was evident, but lack of time did not permit this to be arranged. The above account provides another indication that the W.I.A., when faced with a job, can, and will, do it with the co-operation of its members.

VK3 AWARD FOR 100 V.H.F. CONTACTS

Since this award was originally announced in 1951, three of these certificates have been issued, firstly to Jim 3ABA, then to Col 3FO and Fred 3YS. This award is available to those in VK3 who make 100 or more contacts above 100 Mc.

The rules are as follows:—

(1) Awarded to those VK3 Amateurs holding either the limited or the full license, who submit evidence of having contacted two-way, at least 100 other stations on Amateur bands above 100 Mc., dating from 1st January, 1946.

(2) Confirmations to show the usual QSL information including call sign and location, date contact was made, band used and report.

(3) All authorised bands above 100 Mc. and any authorised type of emission may be used, provided always that the Amateur Regulations are observed.

(4) The claimant licensee may have operated anywhere within Victoria and

either he or the station worked may have operated mobile, portable or fixed or may have changed address.

(5) Only one contact per licensee may be claimed regardless of band used or method or location.

(6) Claims to be submitted in writing to Secretary, Vic. Div., together with a legibly written list of the confirmations submitted. The confirmations should be forwarded by registered mail and return postage should accompany the application.

(7) An attractive certificate to be awarded to each successful applicant.

(8) The V.h.f. Group reserves the right to modify the rules if necessary (subject to sanction of Vic. Division Council).

(9) In case of any dispute concerning a claim, the scrutineers' (at present the Chairman and Secretary of the V.h.f. Group) decision to be accepted as final.

JANUARY ISSUE

This time every year a plea is made to Advertisers and Contributors to forward copy early for the January issue.

To explain once again, as the printers close down for annual holidays from just before Xmas until the middle of January, it is necessary, if the magazine is to be posted to you on the 1st of January, for the magazine to be printed before Xmas.

Therefore it is requested that material for the January issue must reach 191 Queen Street, by the SECOND OF DECEMBER.

Your co-operation in this matter will be appreciated.—Editor.

Low Drift Crystals

FOR
AMATEUR
BANDS

ACCURACY 0.02% OF
STATED FREQUENCY

3.5 Mc. and 7 Mc.

Unmounted £2 0 0
Mounted £2 10 0

12.5 and 14 Mc. Fundamental
Crystals, "Low Drift,"
Mounted only, £5.

THESE PRICES DO NOT
INCLUDE SALES TAX.

Spot Frequency Crystals
Prices on Application.

Regrinds £1 0 0

MAXWELL HOWDEN
15 CLAREMONT CRES.,
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VICTORIA

"ACOS" CRYSTAL MICROPHONES and MICROPHONE INSERTS

A Complete Range For Every Purpose

DESK OR HAND MICROPHONE

MIC 36



£6/18/6

Housed in attractive plastic case, this Microphone is ideal for home recording and public address, etc. Response unexcelled for its size and price. The performance is not affected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s. Recommended load resistance not less than 1 megohm dependent on low frequency response. Can be supplied complete with switch and floor stand adaptor as required at a small extra cost.

TABLE AND STAND MICROPHONE

MIC 22



This omni-directional Microphone is robust in construction, with a pleasing appearance. Vibration, shock or low frequency wind noise will not affect the performance. The low frequency cut-off is dependent on the load resistance. The cut-off is given by the quotation, $F = 80 \div R$, where $F =$ c.p.s., $R =$ megohms. An adaptor (floor mounting) is available at low extra cost.

SPECIFICATION

Output level = -50 db ref. 1 volt/dyne/cm².
Output impedance—equivalent to approximately 0.002 uF. (0.8 megohm at 100 cycles).
Frequency response—substantially flat from 40 to 6000 c.p.s.

Recommended load resistance—not less than 1 megohm, dependent on low frequency response. £9/18/6

HIGH QUALITY MICROPHONE

Designed to meet even the most exacting requirements, this Microphone incorporates the world famous floating crystal sound cell construction. Its special characteristics are that its fine performance is not affected by vibration or shock. The fidelity is not impaired by low frequency wind noise.

SPECIFICATION

Recommended load resistance—not less than 1 megohm.
Output level -65 db ref. 1 volt/dyne/cm².
Frequency response—substantially flat from 30 c.p.s. to 10,000 c.p.s.
Directivity—non-directional.
Size—2½" spherical diameter.
Connector—Standard international 3-pin.

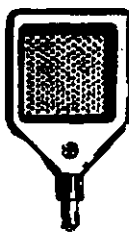
MIC 16



£24/19/6

LAPEL MICROPHONE

MIC 28



£5/19/6

Designed to give freedom of movement, this Microphone is small and non-directional. Housed in a soft moulded rubber case, which gives protection against shock, it is provided with a pin at the rear of the case for pinning to the lapel.

SPECIFICATION

Output level—approx. -55 db ref. 1 volt/dyne/cm².
Recommended load resistance—5 megohms.
Frequency response—level throughout the whole of the audible spectrum.
Capacity—0.0015 uF. at 1000 c.p.s.
Impedance—100,000 ohms at 1000 c.p.s.
Cord—6 ft. shielded cable.
Size—1-9/16" wide x 2¼" long x ¾" thick.

GENERAL PURPOSE MICROPHONE

MIC 35



£2/15/-

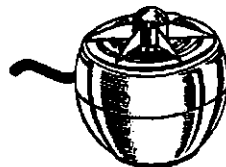
substantially flat response from 50 to 5000 c.p.s.

Output level: -55 db ref. 1 volt/dyne/cm².
Cable—approx. 4 ft. of co-axial supplied.
Weight—8 ozs. unpacked, 7 ozs. packed.
Dimensions—microphone only 2¼" x 2¼" x ¾"

SPECIFICATION

HAND OR DESK MICROPHONE

MIC 33



£6/18/6

This Microphone has been designed for the high quality public address and home recording field. High sensitivity and flat characteristics are obtained by a specially designed acoustic filter. Housed in an attractive plastic case with an unexcelled response for its size and price. Unaffected by vibration, shock or low frequency wind noise. Omni-directional frequency response substantially flat from 30 to 7000 c.p.s.

MICROPHONE INSERTS



(MIC 32 illustrated)

CRYSTAL MICROPHONE INSERTS

These inserts are available in varying sizes ranging from as small as 15/16" square to 1-13/16" round, with various thicknesses from 7/32" to 9/16". Suitable for every purpose such as hearing aids, public address, tape recording, amateur broadcasting, etc., they have responses from 2250 c.p.s. to 3500 c.p.s. at 5 db to 30 db. Insert can be supplied with or without 10 meg. resistor as required.

MIC 19/4 and MIC 32 Inserts, £2/15/6; all others, £1/19/6.

MICROPHONE INSERTS



(MIC 23 illustrated)

EXCLUSIVE AGENTS: **AMPLION (A'SIA) PTY. LTD.** SYDNEY, AUSTRALIA

FIFTY MEGACYCLES AND ABOVE

FREQUENCY CHANGE FOR FIFTY MEGACYCLES BAND

56-60 Mc. available as from 1st November, 1955!

50-54 Mc. closes on 31st January, 1956!

NEW SOUTH WALES

The passive relay or slave antennae experiment was carried out by the Group on Sunday 11th Sept., with some success and interesting information was gathered for future tests. Portable stations taking part were 2HL in the Hartley Valley with 2AOA operating the slave antenna on Mt. York above. 2ZAR and 2DB at the Hawkesbury Lookout with slave antenna and 2IC on the flats below. 2ATO, 2AZO and 2LG on Mt. Tomah with slave antenna. 2ANF, near Dural, acted as control station.

Several tests were made during the day. 2HL was heard by 2ANF direct, which was expected to be impossible, however an increase in 2HL's signal was detected when the slave antenna on Mt. York was brought into use. 2IC's signal, via 2ZAR and 2DB's slave antenna, was being sent back to 2ANF over the top of him. 2IC, incidentally, was not being heard direct. Funny things were happening to the signal, but it is not known whether it was coming from the antennae which were set up on rock walls which Bert was firing his sig at or from the many cars which were moving around the lookout.

On Mt. Tomah two three over three beams were used to re-direct Newcastle signals to Sydney. 2ANU, 2VU and 2ADS co-operated in the Hunter district. Several tests were carried out with no results. However 2ADS reported being able to hear 2ADA via the slave ant. but not direct.

A surprise Scramble was held on Sunday night, 18th Sept., after the 2WI broadcast, about 28 stations taking part. After about two hours' QRM and much turning of beams, scores were taken and Peter 2JX filled first place with 24; 2ZAR, 2APQ, 2LG, 22; and 2HE with 21.

The Spring Field Day held on Sunday, 2nd Oct., was held in conditions approaching mid-winter. The very strong wind which blew all day gave those out on mountain tops a real job keeping beams up and pointing in the right direction. Bad luck overtook some of the field stations. 2HL and 2VL started out for Rylston but had to return due to car breakdown. 2ATO and 2AZO were unable to make Barrington. 2ZAR took 2HL's location, making an all night trip on the Saturday night of 150 miles through storms and high winds, only to give the location away with no signals heard and the threat of some snow. 2HO at Ebor could not get to his favorite spot on the top due to high winds which may have accounted for some of the stations in the North not hearing him, although 2HO heard 2NY at Grafton SB, but did not contact him.

Stations in the link which was hoped would extend to VK4 were 2OA, 2ANF, 2ALJ, 2AWZ/P Mt. Tomah, 2JX, 2ANU/P Murundi, 2AZO/P Hassans Walls, 2WH, 2ZAR/P Sofala, 2HL/P Razorback, 2LG/P Mt. Gibraltar, 2HO/P Ebor, 2ADT, 2AQL. The message to VK4 was passed direct to 2HO/P by 2JX over 263 miles, but Roy 2HO could not pass it any further North. Conditions seemed to be against the operations as 2WH was not heard by any of the stations which had never happened before, however better luck on the next attempt.

The November meeting of the Group will be held on Friday, 4th, at the Petersham Technical College.—2LG.

VICTORIA

The last fox hunt proved a lot of fun for those competing. The fox, 3LN, set off towards the eastern suburbs and for the first location hid in amongst long grass and trees behind a football oval near the Studley Park Reserve. He was able to remain there undiscovered for quite a while watching hound car headlights flashing all around him, but was eventually discovered by Roy 3ARY to make the first catch of the evening. He then made off over the Chandler Highway, but was caught at the outer circle bridge while waiting for the traffic lights to change by Ray 3KD and Norm with his brand new call sign of 3ZBU. A little later he was caught on the run in East Kew by Lance 3AHL and Ron 4ZBH on their motor bike. The second hiding spot was in a reserve off Burke Road in East Kew where the first to locate him was 3KD and 3ZBU followed by 3ARY and 3ADU.

The fox then headed off towards Ivanhoe way and apparently led 3ALY, 3ZAY and Ray Price up a blind lane, or from what they told us, up several blind streets. These three competitors got mixed up in the Heidelberg housing estate and just couldn't find their way out of it. After leaving this district the fox turned towards the western suburbs on route to the final location. He travelled at 10 miles per hour the whole way without making any stops and wasn't caught up with till he reached West Northcote where he made a brief stop to call control station and was then pounced on by 3ADU and 3ARY, which proves that the fox on the move is a far more difficult target than when stationary, even when he is only travelling at 10 m.p.h. 3OJ, 3IE, 3YS and 3ALZ all helped from their home locations giving cross bearings and directions to the hounds whenever they were called on. At the final location, which was held at the home of Norm 3ZBU, 23 of the Group had supper together and held a post mortem on the hunt.

The outright winner for the evening was Roy 3ARY, second place went to 3ZBU and 3KD, and third place to 3ADU. We wish to thank Mr. and Mrs. Dencip for their friendly hospitality in making their home available to the Group to finish off the evening which all voted was a most enjoyable one.

At the v.h.f. meeting Fred 3YS displayed and gave a talk on the equipment belonging to Alan 3UJ, which was exhibited at the recent All Models Exhibition. It is a particularly nice 2 mx portable station. The rx and tx are on separate chassis, each 13 x 7 in. with 8 in. panels, contains all the facilities of a home station set up with provision for phone and c.w. The rx utilises a cascode 6AK5, 6J8 xtal control end using a 7550 Kc. xtal with a multiplication of 18 times. This feeds into a tunable i.f. and mixer with a range of 6.3 to 10.3 Mc., thence via a standard i.f. channel of 1615 Kc. to the audio end. The tx operates with an 8 Mc. xtal osc. on its fundamental frequency with a 6AG7 which triples to 24 Mc. and its capacity coupled to a 6BW6 to 72 Mc. This in turn being capacity coupled to a 5763 doubling to 144 Mc. Link coupling is used to the p.a. tube, a 6QE04/20 (the equivalent of an 832). Parallel lines are used for both the grid and plate circuits of the p.a. A pair of 6F6s and an SCR522 modulation transformer provide the modulation. The equipment is powered from a 12v. accumulator and genemotors with an input of approx. 15w. to the tx final tube and it performed very successfully on the occasion of the recent VK2 field day and v.h.f. relay when contacts were made to both Melbourne and across to the N.S.W. stations.

It was also decided to make a full discussion of field days at the next v.h.f. meeting when it is hoped to introduce some form of a competitive side into the events this year.

Keep a lookout for 3AWC, of Bendigo, who is operating on 144.94 Mc. and is looking for contacts. Roy 3ES has been heard on the 2 mx band several times lately, putting out very excellent signals.—Phyl Moncur.

SOUTH AUSTRALIA

144 Mc.: Last month activity on this band reached a peak with no less than 12 different stations active. The main incentive to all this activity was the appearance of Ern 5EN on 2 mx. Ern is located at Pt. Pirie and his frequency is 144.12 Mc. plus or minus a few Kc. of drift until the rock settles down. Ern has been having many excellent contacts with Reg 5QR who, incidentally, has put in an appearance after about 12 months absence. Reg is well located to work into Pirie and signals both ways average S7-8 with peaks to SB. 5MT is second best in this direction, due of course to an inferior location (must have some excuse Reg). 5EN has also contacted Col 5RO and Clem 5GL on phone.

Another country stalwart is Bob 5RI at Mt. Byron. So far Bob has only worked two or three stations and last month he had his first phone contact with Adelaide, viz., 5MT. Apparently signals over this difficult 100 mile path are at their peak about 10 a.m. in the mornings. Your scribe relays 5WI every Sunday morning on a frequency of 144.63 Mc. with the beam due North. This is a compromise in direction between Pt. Pirie, Gawler and Mt. Byron.

Speaking of Gawler, reminds me of Les 5AX and Comps 5EF. Les is transmitting a nice clean signal on 144.42 Mc., however Comps is still having difficulty in "taming" a pair of 6146s. Heard Comps calling 5RO one night but no contact resulted, your scribe called instead but apparently Comp's rx dial jammed as no answer was received.

Last month Hugh 5BC paid a visit to Adelaide and called in to see the junk at 5MT. We had a good long yarn which was unfortunately cut short by the dinner gong. However, Hughie informed me that all his 2 mx gear "is a going concern" and he will be on the air again in about two months when he moves into his new home. Another piece of good news from last month is the fact that Ern 5EN actually heard Ken 5KC on 2 mx (good show Ken, keep it up).

Col 5RO paid a visit to Broken Hill last month, also did Ian 5ZAA. Col had some very interesting gossip to tell me about v.h.f. activity in that area which I understand is almost non-existent, except for the test transmission on 145 Mc. beamed on Adelaide. The set up in use is: 100w. input to push-pull 2E26s (complete with glowing plates), 3 el. beam fed with 100 yards co-ax about 40 ft. high.

Stations active last month were: 5GL, 5AX, 5EF, 5RO, 5QR, 5RI, 5ZAW, 5ZAA, 5EN, 5MT, 5GB and 5KC.—5MT.

WESTERN AUSTRALIA

Don 6ZAV and his wife were the hosts for the October meeting of the V.h.f. Group. About 20 members were present. Welcomed was Ron 6FM after a long absence due to shift work. Frank 6CC was our lecturer and spoke of his experiences with the effect of moisture on receiving. He mentioned its effect on the antenna and feeders and the loss of sensitivity which does result if a rx is not regularly warmed to drive the moisture out.

Amongst items of gear passed around were Don 6HK's miniature converter for 2 mx on a chassis 4 x 3 in. and your scribe's "pot" osc. for 1 mx. The latter was made from two jam tins. Comments that if I could not work anyone with it, I should rattle the two tins together was not appreciated!

50 Mc.: Conditions are improving and the band should open very soon to the East. Signs of the improvement are Don 6HK's contact on 28 Mc. to 4X4 and John 6GU's to VS6 on the same band. Kevin Bicknell reports building a converter but complains that there are no signals to listen to. The introduction of the Limited License has certainly resulted in 6 mx being neglected.

144 Mc.: Ron 6FM is progressing with his phase modulator exciter and hopes to get his 82B6 going for the summer DX. Don 6ZAK is building up a new tx and plans for a 100w. final. Stan 6ZAS has completed his new rack and his plans for a 288 Mc. xtal tx have collapsed into the form of a car. What about a mobile station Stan instead? Cecil 6ZAZ, after re-building his converter, is commencing a t.v. rx with the idea of checking reception of Melbourne and Sydney National stations. Ralph 6ZAD tells an amusing story of how a photographer close to the new radar weather station lost 40 flash bulbs when the tx was switched on. The 100kw. peak pulse power set them all off!

288 Mc.: Len 6ZAT appeared on the band with a 5J6 mod. osc. and his "twin." Don 6ZAK, followed with a QCC04/15 tripler.

V.h.f. Records.—The following are believed to be the v.h.f. records in the West:—

50 Mc.—VK5HK/VK2CG, 3/1/55, 3928 miles.
144 Mc.—VK6BO/VK5GL, 31/12/51, 1328 miles.
VK6BO/VK5GL, 9/2/52, 1328 miles.
VK6BO/VK5QR, 9/2/52, 1328 miles.
288 Mc.—VK6BO/VK6DW/P, /49, 25 miles.

Any new claims should be forwarded to Stan Stewart, 95 Railway Road, Mt. Lawley.

Finally, remember that Don 6HK, using slow m.c.w., will be pleased to work anyone at 7 p.m. Thursday and Sundays. He will be on 144.29 Mc.—6ZAA.

HAVE YOU HEARD OF A GIGACYCLE?

How many cycles per second in one Gigacycle?

One Gigacycle per second (Gc.) equals 1000 Mc.

Authority: Journal of the Colombo Institution of Electrical Engineers for February, 1955.

The Widely Acclaimed MULLARD "5-10"

High Quality Low Cost Amplifier

Comes to Australia!

The need for a well designed, low cost, high quality amplifier is reflected by the already unprecedented wide acceptance of the Mullard 5-10 amplifier. The popularity of the design, both in England and America, has resulted in the amplifier being now available in many kits forms—even a printed circuit version.

A brief specification of the amplifier is as follows:—

Power Output: Rated output 10W. Max. output 12-13W.

Total Harmonic Distortion: The total harmonic distortion is less than 0.4% at 40 c/s measured for 10W. output with normal loading and sine wave input.

Hum and Noise: -73db relative to 10W.

Frequency Response: ± 0.5 db, 10 c/s to 20,000 c/s.

Sensitivity: An input of 50mV to the first valve gives 10W. output. This output power is produced by an input of 600mV to the tone control circuit.

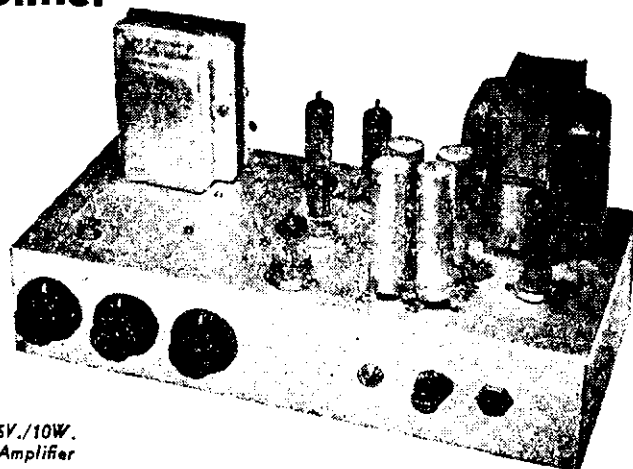
Treble Control: Continuously variable control of treble from +10db to -10db at 10,000 c/s.

Bass Control: Continuously variable control of bass from +11db to -5db at 20 c/s.

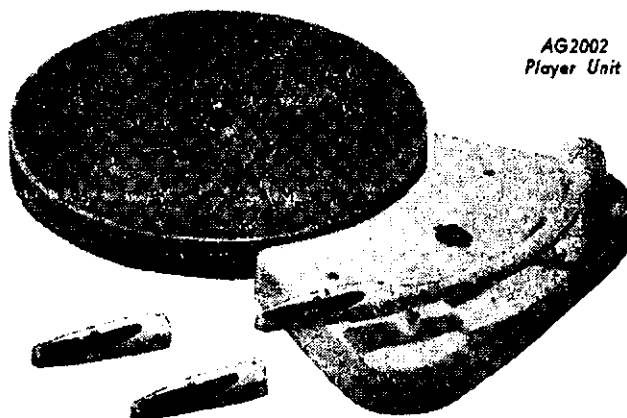
Companion unit to the Mullard 5-10 amplifier is the AG2002 low cost, 3-speed player unit. This world-wide popular high quality player is now made in Australia and features an extremely low rumble level yet high torque. Standard equipment is a dual stylii head but individual microgroove and 78 r.p.m. plug-in heads giving an even wider range are available. For the most fastidious, there is a microgroove head with a diamond stylus.

Designed by valve applications engineers for quality performance at low cost, the construction of the amplifier is fully described in Mullard publication MV8104 now available in your State for 3/9 (post-paid, 4/3).^{*} This booklet also contains details of the AG2002 player, equalisation networks and an outstanding horn-type loud speaker enclosure. The latter enables the use of low-cost speakers — surprising performance from the inexpensive, locally made speakers recommended in the Australian section of the booklet.

^{*}Mullard does not supply the assembled amplifier or a kitset, but the complete 5-10 amplifier kit including an approved output transformer can be obtained from Electronic Products, Box 28, Post Office, Punchbowl, New South Wales.



5V./10W.
Amplifier



AG2002
Player Unit

Mullard



MULLARD-AUSTRALIA PTY. LTD.
35-43 Clarence Street, Sydney. BX 2006
592 Bourke Street, Melbourne. MU 2366

Associated with
Mullard Ltd., London Mullard Overseas Ltd.



Mullard
Publication
MV8104

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DX ACTIVITY BY VK3AHH†

PROPAGATION REPORT

3.5 Mc.: Again, conditions were quite reliable as far as times of break-throughs were concerned. Signals were best during the following periods: 2000-2100z for Europe, and 0730-1200z for North America, with the possibility of break-throughs from other parts of the American continents.

7 Mc.: The interference from broadcast and other commercial stations in the exclusive Amateur band 7000-7100 Kc. has now reached such a calamitous degree that the all-important Amateur propagation observations are extremely difficult.

Judging by the Amateur activity in the narrow spots between interfering transmissions, this is the report for the month: Europe via short route around 1900-2130z, and 0600-0800z over the long path; North and South America between 0800z and 1400z, and the Far East and the Pacific Islands around 0800z and 1400z.

14 Mc.: Conditions were reasonably good and reliable during the month of September. Good openings took place to all continents of the world. Stations in North America were present around the clock, while South American conditions peaked between 0300 and 0800z. With some occasional break-throughs over the short path, European were best over the long path (0500-0900z). Africa could also be worked during that period.

21 Mc.: Here conditions were good to very good when an opening occurred. Normally, conditions followed the pattern typical for this band: The American continents around 2300-0400z, with Europe between 1900z and 2200z. The Far East and the Pacific Islands were likely to be workable at any time between 2200z and 2200z.

27 and 28 Mc.: These bands showed a marked improvement during the month, as was to be expected. Good openings were reported to North and Central America.

NEWS AND NOTES

Can you listen on 7 Mc.? OK, let's have your report on anything you can identify between 7000 and 7100 Kc. Note the time of reception and the call or name of any non-Amateur station operating in that range! Old-timers and short wave listeners alike, this is a job for all of us! After all, it is our 7 Mc. band!

It is reported that ON4QX, at present in Japan, will soon be active from AC4 land. (from N.C.D.X.C.)

According to ZS6AJH, the only ZS9 station now active is ZS9BD (14 Mc. phone). (from W6YY)

Further details are now available on ZD9AD, Gough Island. This is a sub-Antarctic island about 260 miles south-south-east of Tristan da Cunha. The operation is intended to be on all bands with possible emphasis on 21 Mc. c.w. and phone. According to the itinerary, the station should now be in operation and remain active for six months. (from 3YS)

The five stations presently active from Martinique are FM7WD, FM7WF, FM7WH, FM7WP, and FM7WQ. (from W6YY)

VS2DQ expects to go to Christmas Island (ZC3). (from N.C.D.X.C.)

FW8AB, Wallis Is., is still available on 14 Mc. c.w. The best time is apparently between 0430z and 0455z. (from W6YY)

Well known s.w.l. and contributor, Jim Hunt, presently in England, mentions these VK3 signals as being among the best on phone over there: VKs 3AD, 3QK, 3VA, 3X1, 3ZL, 3ACE and 3AHC on 14 Mc. and 3ADP on 21 Mc. (from 3ZE0).

† Hans J. Albrecht, 10 Belgravia Ave., Box Hill North, E.12, Vic.

* Call signs and prefixes worked.

z - zero time - G.M.T.

QTRs OF INTEREST

(from W6YY, N.C.D.X.C., VKs 3PG, 5WO, 1LZ, and Rod de Bulfour)

HK3PC-C/o. Apartado Aereo 3418, Bogota, Colombia.

VP8BD-Via International Short Wave League, London, England.

FB8XX-Via R.E.F.

CRCSW-C/o. Airport, Goa, Portugese India.

FB8ER-Box 730, Tananarive, Madagascar.

ZP5IB-C/o. American Embassy, Asuncion.

ETSIF-Box 114, Addis Ababia, Ethiopia.

ZS8L-Via ZSIPD.

SV0VS-A.P.O. 206, New York (W7PKS).

5A1TJ-A.P.O. 231, New York.

HB1KU/HE-Via HK9KU.

5A1TL-Box 372, Tripoli, Lybia.

VR3B-Deane Laws, C/o. Cable and Wireless, Fanning Island, via Suva.

Ex-ZC5VR-Via VS2EW.

ACTIVITIES

3.5 Mc.: John 3ZC reports Ws. Jack 6EJ heard ZS6PM on phone (August). Eric BERS 195 adds W7 and FK8AR/MM. Dave Jenkin heard W1, W3, W7 and 8. 3ABH worked W8 and W9.

7 Mc.: Laurie 2AMB heads the list with YV1AD* and VS8CG, F18AC, VS6CQ, ZS5OX on c.w., and HP3FL* and JA1ALL on phone. Noel Z80 heard HP2, while Frank 3ZU reports JA1, JA3, JA5, HP3FL, HRI, XE1LN, HC1FS. Kel SAEP heard FM7WQ. Les 4XJ spoke to JA1AMZ* and a series of Ws*. Jack 6EJ worked on c.w. JA5CP*, JA8AE*, VETKX*, VP6CT*, VS2ET*, ZD6BX*, ZSSBF*, ZS5PK*, ZSSQD*, and on phone ZS5JM*. Tim 3ZE0 listed JA and KH6. BERS195 reports FK8AR/MM (on phone) and DL4ZC, DU7SV, EA4CS, FBHV, G2OF, I1EC, JA8AE, JA6SS, KH6C, KL7FAG, OH7NE, VE2BN, XE1UW, YU3BC, YV1AD (1045z), ZB1CU, SM8ER. Dave Jenkin follows with HB8NL, KP4ABA, GJF, F3TJ, G6UT, PA0KE, KZ5YS, DL8TJ, G6ZO, F8QJ, and G3DMG.

14 Mc. c.w.: Alan 3CX: PX1EX*, XW8AB*, HR4AS*, HR4WH*, HK4BD*, KP4*, VP8*, CM9AA*, ZB1BF*, VU4EO*, HB1KU/HE*, ZS8*, ZS5*, XE1MB*, SQ10E, XE1OE*, VS6*, CN8AP*, and EA8BH, AC5PN, ZD2NWW. Neil 3HG: VQ8CB*, Allan 3HL: Gs*. Jack 3JA: SM*, F*. DL*, Gs*. II*. DU3DO*, VU2MA*, VU2RC*, HB9*, ON4*, HH2FL*, HRIAT*, ZS6C*, KTIEXO*, VS*, LA1*, VU2SX*, OH*, FB8*, CR9*, ZS2*, GW*, FT5TP*, AP2Q*, HB4*, Ken 3KR: HB1OF/HE*, OZ*, Gs*, F6*, EA*.

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 |
|-------|-------------------------|--------|-------------------------|
| VK3BE | 3 | VK3ATN | 26 153 |
| VK4HR | 12 176 | VK4KS | 9 152 |
| VK6SR | 2 168 | VK6KW | 4 150 |
| VK4FJ | 21 164 | VK3LN | 11 141 |
| VK3EE | 10 162 | VK4RW | 23 141 |
| VK3JD | 1 155 | VK3AWW | 14 140 |

C.W.

| Call | Cer. C'tnt- No. ries | Call | Cer. C'tnt- No. ries |
|-------|-------------------------|-------|-------------------------|
| VK3BZ | 6 222 | VK3CX | 26 175 |
| VK3FH | 15 205 | VK6BY | 45 172 |
| VK4HR | 8 200 | VK2EO | 2 170 |
| VK3FB | 10 200 | VK5RX | 23 189 |
| VK4KJ | 29 191 | VK6RU | 18 168 |
| VK4EL | 9 175 | VK6BO | 35 157 |

New Members

VK3XU .. 48 142

Amendments

VK3YL .. 39 145

OPEN

| Call | Cer. C'tnt- No. ries | Call | Cer. C'tnt- No. ries |
|--------|-------------------------|-------|-------------------------|
| VK3BZ | 4 231 | VK2NS | 16 195 |
| VK2ACX | 6 225 | VK3HG | 3 181 |
| VK4HR | 7 214 | VK4EL | 10 175 |
| VK4FJ | 32 206 | VK6KW | 13 171 |
| VK3RU | 8 203 | VK2DI | 2 170 |
| VK3JE | 12 198 | VK4DO | 15 168 |

New Members

VK3XU .. 61 150

VK4CC .. 62 117

OE*, PJ2AN*, LA*, VR2*, VS6*, 1134, XE1MJ*, DJ/DL*, YU*, KG4AV*, SM*, OH*, PYTWO*, 4STWP*, ZS6*, CO2WD*, MP4QAH*, MP4BBL*, ZM6AS*, HZ1HZ* and XW8AB, Mart 3MH: KV4AA*, Europeans: Albert 3PG: F*, HB9*, 9S4AX*, Gs*, I*, OE*, DJ/DL*, ON4*, YU*, EA*, PA*, KV4AA*, ET3LF*, VP8BD*, FB8BR*, VP8EM*, YJ1DL*, HB1KU/HE*, Ivor 3XB: PJ2AV*, EA*, John 3ZC: XE*, DL*, JA*, Allan 3ABH*: ZC5CT*, PJ2AV*, 8S4AX*, HH2FL*, F80A*, YV5BJ*, XE1CM*, DU61V*, CT1*, I1*, G*, OH*, DL*, PA*, KR6*, F*, OE*, EA*, OZ*, YU*, SM*, VS6*, KR6*, KA*, Bob 4RW: VO8AE*, KP4TF*, F*, ON4*, YU*, DL*, T12PZ*, VQ4EO*, FP8AJ*, EA*, HB1PM*, ZES*, VP3VN*, 4X4IE*, PJ2AV*, CT1*, CE3RE*, John 5HI: T12BC*, T12EZ*, KP4ACB*, F80AL*, IS1FIC*, Austin 5WO: YU*, OH*, DL/DJ*, SM*, SL*, II*, ON4*, G*, PA*, OEI*, HB9*, KV4AA*, FB8XX*, CR1CI*, ZS6IK*, JA*, Jack 6EJ: AP2V*, DJ/DL*, EA*, F*, Gs*, GW*, HB9*, I1*, JA*, KA000*, KL7PI*, MP4BBE*, OEs*, OH*, ON4*, PA0*, SM*, VS1G*, VS2DG*, VS2EK*, VP8BM*, VP8EM*, VU2CP*, VU2HF*, VU2NR*, YU*, Tim 3ZBO: HH2FL*, YU*, OE, HB9*, F*, G*, GM, VY5EZ, ZS5CY, XW8AB, CO2CT, ZB1BF, FK6, KH6, KV4AA, Eric BERS195: CESAW, DL, E1BY, DU1VC, FB8XX, F8BCF, FK8, JA, KC6C, KJ6, KL7, FK4KD, KR6B, KW6B, KV4BK, LA1, LU2MAC, OE, OH, FY1BFR, SM, VS1G, VS2EF, VS6DG, VQ8CB, VU2HM, XW8B, XZ2AD, 9S4AX, Ian W1A-L3907: LU5K, LU5XA, Dave Jenkin: VR2B, KJ6, DL, VU2MA, KV4A, YU, XE1GM, OZ, F, II, KV4BK, J, KP4TF, PJ2AQ, YV5BX, OH, HH2FL, FK6, HB9, CO2, CT1, DU1AQ, 8AHN: OE*, G*, YU*, SM*, XE1MJ*, I1BCB/Trieste*, DL1DJ*, 8S4AX*, I1*, HB9*, EA*, PA*, and FW8AB.

14 Mc. Phone: 3HG: Gs*. ZB1DHF/V1*, ZC5CT*, GW*, 5A3TZ, PA*, HK4DP*, CE2DD*, CT1*, 3HL*, Gs*. 3IA: ON4*, FK8AR/MM*, CT1*, GW*, SM*, HB1OF/HE*, CN8MM*, I1*, XZ2SS*, GM*, 4SYL*, VU2RC*, TG2AD*, HC1ES*, PY2CK*, PY2AHS*, PY1NC*, PY4VX*, PY4ZS*, HK3PC*, HK4DP*, LU4DMG*, LU7AA*, HK3PC*, DL*, P11J*, F*, EA*, LU1FA*, CX5PV*, KJ6*, 3KR: OE*, HK3PC*, G*, BFG, VY4CB, HK4DP*, Stan 3TE: CE2DD*, CO2EL*, DJ/DL*, F80A*, FMTW*, Gs*, HB1KU/HE*, HB9*, KV4BC, KV4BE, HP1HE, HK4DO, I1*, KP4ACS, KV4BE, KZ5CS*, OH*, OE*, ON4*, CZ*, P11J*, SM*, T12RMA, VP8G, VS2CV, VU2BR, XE2NT, 5A1TA, 5A1TZ, Harold 3AHC, KIACC, VS2EW*, KR6*, CO1AF*, F*, VQ4EO*, 5A4TX*, I1*, ON4*, EA*, SM*, HB9*, CN8FI*, CN8MM*, KL7*, KA/JA, DL*, Y1ZAM*, LA*, KZ5CS*, KV4BE, HK4DP, 4X4DK*, GW*, PA0*, CT3AA*, CR9AH*, OH*, V15W*, 4S*, XZ2KN*, PJ2X*, 9S4AX*, GD5ENK*, OZ*, KJ6*, TG9AD*, 4RW: OD5AB, 5HI: OQ5FH, ET2US, KR6*, OE*, II*, YU*, F*, G*, SM*, HK3FV*, TG9AD*, KZ5CS*, 5A3TZ*, OH*, ZS5PM, HB1KU/HE*, TG9MB*, ON4*, 5WO: 5A3TZ, 5A1TL*, I1*, F*, HK4DP*, KV4BB*, HK5ER*, T17MH*, DL*, OE*, SM*, EA*, HB9*, G*, CT1*, CX2AX*, PY2CK*, HK3PC*, TG9AD*, T12CHV*, LU4DMG*, CX2CO*, PY2AHS*, LU7AA*, PA0*, H16EC*, CO8DL*, VY5BS*, Y1ZAM*, EA*, OH*, 6EJ: AC3SQ*, OH*, KA*, 4S*, David 3ZAT: F, KM6, G, II, GW, FO, CT1, OH, BERS195: F80AM, KA, VS1GT, VS6, 4S7, W1A-L3907: G, CZ5CS (?) T12ES, HK4DF, HK4DP, T12DLM, OD5AT, YV5AB, ZMGAT, LU7AA, PY4VX, LU4CN, KA, CT1, EA8DD, EA7DT, GD3FAC, GW, Rod de Bulfour: K71W, I1, DL, KC6CG, HC2OM, HK3PC, KV4BI, G, CN8MM, KA, KM, JA, KR6, EA, KV4BB, OA4AQ, KG1AX, VR2CW, FK6.

21 Mc.: 3JA: Ws*. KH6*, KG6*, VS6* 3PG: JA1ANG*, DL6AL*, Ws*, WORT/MM*, HC1EP*, HC1FS*, VY5AB*, ZP6B*, Frank 8ZU: Ws, Hc, VS6, KR6, KH6, KA, VR2, 3AHC: W*, CP5EF*, KR6*, HC1EP*, KV4BB*, Len 3ALD: Ws*, and G, DL, KA, JA, VS6, CR9AH, KR6, 5WO: G5VT*, W4EWS/MM*, CO1*, TLZ: HC1FS*, VP8BD.

27 and 28 Mc.: 3PG reports Ws around 0000 to 0100z and VK9BW*. 3ZU heard W6VAD, W5VY, 4XJ spent some time on these bands with these excellent results: T13LA*, KH6BQJ*, KH6GAG*, KH6AVH*, KH6BIM*, KH6BAK*, W4NH*, K4BZJ*, W4PQW*, W4BWP*, W4WSJ*, K4BLM*, W4NJM*, W4WJZ*, W4EKZ*, W4HZG*, W4WAG*, W4UCY, WAAZO*, W5VY*, W5ITC*, W6MLW*, W6TGM*, W6KJC*, W6ANK*, W6ZHY*, WTRD*, WTTFT*.

Rare QSLs were received by: 2AMB: VKIDY, 8CX: FB8XX, YN1AA, VKIDY, 3HG: FB8XX, 3JA, 3KR, 3MH, 3PG, 3TE, 3WQ, 3XB, 3YS, 3KR: VP8AZ, 3VBEB, CX2BF, ZMGAT, 3XB: ZD6BX, MHI: YV5AO, II, CR9AH, YV1AA, VKIDY, VK1EG, BERS195: ZM6AS (3.5 Mc.).

Thanks to W6YY, the Northern California DX Club, and VKs 2AMB, 3CX, 3HG, 3HL, 3JA, 3KR, 3MH, 3PG, 3TE, 3WQ, 3XB, 3YS, 3ZC, 3ZO, 3ZU, 3AEP, 3AHC, 3AHM, 3ALD, 4RW, 4XJ, 5HI, 5RK, 5WO, 6EJ, TLZ 3ZAT, 3ZBO, and BERS195, W1A-L3007, Dave Jenkin (VK3), and Rod de Bulfour (VK7).



FEDERAL

CROSS-BAND BREAK-IN OPERATION

Attention of members is directed to their obligations in regard to break-in and cross-band working.

It should be noted that the operator must cut the carrier during the listening period. This is clearly stated in Paras. 112 and 113 of the P.M.G.'s Handbook for Operators of Amateur Wireless Stations.

Apart from the fact that it is contrary to Regulations, an unmodulated carrier on the crowded lower frequency bands can be a matter of considerable inconvenience to fellow Amateurs.

SLOW MORSE

It is pleasing to note that both the VK7 and VK2 Divisions have recommenced their Slow Morse Sessions. This service is one of the most important in our Institute because it is the means of bringing in new licensees, and, as a result, new members.

VK7 Slow Morse is in the capable hands of VK7KA and is heard on the 3.5 Mc. band each Sunday from 0915 to 0945 hours.

The VK2 Sessions will be controlled by VK2AAB. Barry is planning daily sessions on 3.5 Mc. and these should be in full operation when this goes to press.

It is intended to give a complete summary of Slow Morse Sessions, times, and frequencies, every three months in "Amateur Radio" so that members and aspiring A.O.C.P. candidates will know when and where to listen.

INTERNATIONAL CONFERENCE IN REGION 1

Next year (1956), Italy will be the location for the next International conference of the Region 1 I.A.R.U. Societies. This gathering may prove a momentous one, because it will precede the C.C.I.R. technical convention in Warsaw in August, 1956, as well as a possible I.T.U. in Geneva some time later.

In similar vein, Federal Executive is desirous that a Region 3 International Conference of Amateurs should be held when the Olympic Games are taking place in Melbourne during November, 1956.

FEDERAL AWARDS

Additional W.A.V.K.C.A. Awards have been issued to: Harry Akesson, SM5WI; Alec G. Binnie, ZL1QW; Rudl Hammer, DL7AA; Bert Allen, G8IG; G. A. Massey, G6YQ; G. Bill Wilkinson, WIHA; B. M. Scudmore, G6BS.

—G. Weynton, VK3XU, Awards Manager.

FED. CONTEST COMMITTEE

After taking into consideration the ideas submitted by last year's contestants, a set of rules was drafted which seemed to be a suitable compromise between them and the directions by Federal Council. In the meantime alterations were made to our bands and your Committee felt that in order to advance we must put forward fresh proposals, even at the late hour, in order to fulfill the obligation to keep all v.h.f. bands fully occupied.

We apologise for the short notice, but ask that you sincerely give these rules a real try out for at least two years. They have been based on the voting received from those Divisions who answered our signal and really gave us something to work on. It is an impossible task to obtain a set of rules which will completely satisfy everybody, because the VK call areas have such different propagation conditions, particularly on the v.h.f. bands.

You will notice that a new award has been created for the holders of L.A.O.C.P. calls and the Committee is hoping for a good entry from this group.

And now good luck to all who enter; let us make this year's Contest a record entry. Your Committee won't even bat an eyelid if 500 logs turn up!

—Chairman, Federal Contest Committee.

NEW SOUTH WALES

EASTERN SUBURBS

"Ground-plane-itis" has attacked one or two in this area, including 2NO. It is not the first time that Don has used a G-P on 20 mx, but the one he has now is but 9 ft. to earth from the 90 degree radials. In 10 days casual c.w.

and phone activity the DX—and on a jam-packed band—has included G, ON, F, PI, OZ, SM, I, SP, LZ1, YU, OK, K8, CT, EA, TG, and others. 2AWE and 2ASS are also getting good results, but 2TH is not sure of his installation yet. Roy says he could strike a 40w. lamp off a clothes line near one of the radials. That certainly looks as if the vertical is not matched in and that the radials are taking all the soup!

2ASE has had a bad time with health, added to which a gale wrecked his 2 mx 3 over 3 whilst he was "laid up." To the rescue came good Samaritans Andy 2AX, Charles 2AWQ and Ken 2SD. These excellent demonstrators of the good old Amateur spirit had a skeleton slot array on Ernest's straightened-out rotary water pipe in quick time. To cap things, Ernest did in his (second) 815 and found that an 832 didn't perform as well with accidental low plate and high screen voltage. With that corrected, all is well again.

High up on the skyline towers the rotary at 2VA, which recently seems to have become a four el. When Vince gets on that bug he literally mows down the DX in fine style during sundry contests. Also, he is often heard on s.b. yarning with Ws at the h.f. end of 20 mx. The rotating compressed dipole at 2AIG seems to be getting a nice quota of c.w. DX for Ray. 2AIG has been quite active on 20 mx recently, mainly on the key. This scribe apologises, Laurie, for blocking the rx front end, but that works either way with stations in close proximity. Visitors to 2NO of late have been 3AD (ex-G6TM) and 3EE—now returned from a sojourn in U.K. Bert 2AGW, also just back from a trip of 35,000 miles by air, came over from his North Shore habitat to tell of doings. He visited Gs, Ws, SMs and others. When a few hours out from Gander, Newfoundland, en route to U.K., a wing leading edge wrinkled, and high octane gas streamed out. That resulted in return to N.F. However, Bert made it to G after a few hours delay. He considers that SM land is the cleanest of all countries he has visited.

Nothing has been heard for ages of 2ZQ; what is doing Fred? Horrie 2FA, long beset by the demon b.c.i., has, thanks to good luck and some un-usual "gen", triumphed at last. Anyway, the b.c.i. now has to crawl into the speaker to hear Horrie, which is about what the doctor ordered. Fine business and look out DX—here we come! 2NW has been in G land getting the low down on t.v. from all angles, and judging by his communique he knows what to expect when the balloon goes up in VK. Latest antenna to attract attention is Wal Salmon's "DE. Lazy H" ("A.R." Oct., '55) and it is thought that as we have the "ZL Special," Wal's effort could aptly be dubbed the "Sugar Apple" Special?

SOUTH WESTERN ZONE CONVENTION

The big news this month of course is of the Third Convention held at Albury on 1st and 2nd October. The attendance exceeded our hopes, by a big margin, which shows our Zone Conventions are getting more popular every year. Thanks are extended to all the visitors who travelled such long distances to help make this Convention the success it was. We do hope to see you all next year at the Fourth Convention, possibly at Griffith. The success of the Convention was due to the organising ability of the Albury chaps and XYLs. Special mention to 2RS and Glenda who proved a very capable secretary.

Saturday was taken up with the arrival of visitors at the Masonic Hall and a tour of the Hume Weir and Albury, even the rain did not dampen the spirits of the gang in the bus. The evening was much enjoyed by all, commencing with Dinner at the Hall. The Convention was then opened by the Mayor of Albury (Ald. C. E. Bunton, O.B.E.) who also welcomed the visitors to Albury. N.S.W. President (Jim Corbin, M.B.E.) responded on behalf of the Institute. A most interesting talk on t.v., t.v.i. and b.c.i. was given by George Glover, 3AG, which was much appreciated by the gathering. The rest of the evening was taken up with items such as musical quiz, pick-a-box, and films, supplied and operated by Alf 2BW.

On Sunday the first item on the programme was the 144 Tx Hunt, won by Geoff 2BQ ('Tumut'), with Keith 2ZAA a close second, and Ross 2PN, third. The 2WI broadcast was done from Don's (2RS) QTH on 80 and 40 mx and much advice was given to the operators by the assembled gang. After lunch, the folk gathered at the North Albury Hall, where disposals gear was auctioned off by 2AJO and 2BW. The

Scramble then took place, the winner being Stuart 2PL with Max 2OT second. While the Scramble was in progress, much amusement was caused with a Blindfold Hunt held in the hall. Afternoon tea was then served and the Convention concluded at Don's (2RS) QTH with films and supper in the evening.

Those present at the Convention included from Melbourne: 3AG, 3DU and XYL, 3OF, 3ALQ, 3ZM, SAID, 3AAH; Sydney: 2YC, 2EO, 2ASW, 2AAB, 2YB, 2VC, 2AOU, Mrs. Corbin, Mrs. Cahill, Mrs. Todd; Bendigo: 3ACN; Woeilongong: 2DY, XYL and party; Newcastle: 2OT; Griffith: 2PL, 2ZBJ, 2ZAZ, 2ACS, three Associates, Mrs. Savage, Mrs. Harriman; Tamat: 2PN and family, 2BQ, 2ZAA and XYL, Dick Lech (Forestry Officer); Wagga: 2BW 2AID, 2AAF, Mrs. Moye, Mrs. Mitchell; Tangamah: 3WQ and Mrs. Chirnside; Cobram: 3AXW; Albury: 2RS, 2OJ, 2QD, 2EU, 2JA, and XYLs; Cooluma: 2AJO.

HUNTER BRANCH FIELD DAY

The Hunter Branch Field Day was held at Blackall's Park on Sunday, 2nd October, with a good attendance of the Hunter Branch gang. Those present were VKs 2CS, 2XT, 2KW, 2AHA, 2AOR, 2ARV, 2FA, 2ANA, 2ZT, 2AHT, 2KQ, 2SF, 2RU, and Associates: D. Bailey, R. James, B. Bailey, R. Kidd, Sr., R. Kidd, Jr., and their XYLs and families. Apologies were received from 2AGD, Gordon Sutherland, and 2KG. During the day the children were supplied with ice creams and soft drinks.

The Hidden Tx Hunt at 10 a.m. was not found in the allotted time, though Bill 2XT was very close, so the prize—a Rebecca Transceiver—will be held over till next year.

The famous Hunter Branch "Blindfold Tx Hunt" was held in the afternoon and was won by Lionel 2CS. The ladies also were contestants in this event and Mrs. Bailey, XYL of Associate Bob Bailey, was the outright winner. So next year, chaps, beware of the XYL!

During the day various other competitions were held and these were won by—Ladies' lucky number: Mrs. Hansen, of 2XY; OMs' Joyce, XYL of 2AHA; OMs' nail driving: Les 2AOR; identify the bits and pieces: Norm 2ANA; and Bill 2XT; estimate the frequency of a xtal: Bill 2XT; estimate the frequency of a tuned circuit: Bob Bailey and Ray James. In the know your voices, the XYLs proved too good for the OMs by winning; Muriel of 2FP and Joyce 2AHA, being the lucky ones. The boys' (3-7) race was won by Jimmy Hall; girls 3-7, by Joyce Archibald; boys 7-12, Barry Rudkin; girls 7-12, by Martyn Whyte. Ladies' race won by Miss Bailey, and the OMs by Keith Rudkin.

It was very pleasing to see Mrs. Rudkin, wife of our late member, and family present.

The function closed at 5.30 p.m. when all the boys raced home to see what was offering in the VK-ZL Contest.

The November meeting of the Hunter Branch will be held at the Technical College, Tighes Hill on Friday, when John Moyie, 2JU, will lecture on amplifiers and various films will be screened.

Arrangements are well in hand for the Hunter Branch Xmas Social to be held on Saturday, 10th December, 1955, when it is hoped to maintain our usual high standard of entertainment, so do not forget to come and meet all your old pals again. 2AWX, the official station of the Hunter Branch of the W.L.A. (N.S.W. Div.), can be heard on 14100 Kc. every Monday night at 2000 hours E.S.T. with the latest doings of the Hunter Branch.

Lionel 2CS is looking for a new anchor. Bill 2XT very busy with converters. Harold 2AHA, Jim 2AHT and Dave 2BZ are all mobile. Neil 2XY and Les 2AOR can still be heard on 14 Mc.; how's the audio stage on the xtal set going Les? Ernie 2FP still winding new transformers for his rig. Leo 2QB getting among the DX. Ron 2AAI and Merv 2AAM busy with 1 mx gear. John 2XQ is still active on 80 mx. Charlie 2ARV has W.A.S. at last. Bill 2CW busy with tape recorders. George 2AGD putting up a new antenna. Jack 2KQ busy with his bowls activities. Doug 2ADS is still rebuilding his gear.

VICTORIA

There was a large attendance at the October general meeting to hear the lecture given by Mr. Burton, of the Melbourne Technical College, on "Square Wave Testing of Amplifiers." This very interesting lecture was received with great enthusiasm from the members, so interested

were they in fact that not one member dropped off for even a tiny little snooze, but they kept firing Mr. Burton with a barrage of questions which he was most willing to answer. The equipment with which he demonstrated his lecture included two c.r.o.'s, which were the envy of all present. At the conclusion of the lecture, Fred 3YS thanked Mr. Burton for his excellent lecture and members showed their appreciation by a very solid round of applause.

During general business, the President announced that a new Secretary had been appointed to take over Col 3FO's position, as Col. after his marriage, will be moving to the country to try his luck. Cheerio Col, and good luck in your new venture and lots of good wishes are extended to you and Phyllis for a very happily married life together. The new Secretary will be Len Robinson, 3ALD, and we hope you'll enjoy your position Len; it will be a lot of hard work, but we're sure you're the man to do it.

The President welcomed three visitors to the meeting, they were Doug Twigg, 7I, ex-3LI, who is to be the radio supervisor at Macquarie Island in the new team going down to the south and who expects to operate while he is there and will be taking out a call for the trip, also Barry 2ZAG, and Mr. G. W. Searby, who hopes to become an associate member of the Institute shortly. New members to the Institute were welcomed, these included Neil Town (3ANK) as a full member, and the following associates: Messrs. D. Watson, A. Wright, T. Straughair, R. Kidgell, M. McDonald, N. McDougall, E. Bailey and T. Phesey.

Certificates to those successful in the National Field Day were presented to John 3ARJ, Hans 3AHH, Alf 3IE and Fred 3YS, also to Eric 3ZL for his success in the Ross A. Hull Memorial Contest.

The lecturer for the next general meeting to be held on 2nd November will be Mr. George Glover, 3AG, whose subject will be "Communication and Ancillary Equipment for Home and Portable Use," together with a practical demonstration of the equipment. December meeting (7th) will be a family night with lots of fun for mum and the kids. Don't forget the Annual Dinner to be held at the Hardware Club on Friday, 4th November. Tickets are obtainable from Max Hull, 3ZS.

Over the last couple of years a small group have been adding variety to the Annual Convention by making it a camping week-end. It

is such a saving on hotel expenses when you have a family and can be such a lot of fun with a crowd. Mum and the kids go to the pictures while the OMs have their meeting, then they all join in with the activities on the Sunday. We expect to have about five or six families this year with either caravans, tents or converted trucks. The meals are easy, all you need to bring is breakfast for Sunday morning, the dinner on Saturday night and midday meal on Sunday can be had at the hotel, but don't forget to let Neville 3ACN know what meals you'll be needing and for how many, and also how many seats you need booked at the pictures.

Fred 3YS managed to get brother Jim 3ABA safely married off earlier in the month and Jim and new 3YL Vera have been happily honeymooning in the vicinity of VK2's "Our 'Arbour" and "Our Bridge." Well that's another good man gone west, however we're working hard on Vera trying to give her the right idea in regard to this Amateur Radio. Can't seem to get that 3VZ off, he seems to believe

in safety in numbers, it's not that he can't bear to be tied down to one girl, he just can't drag himself away from all the others. Max 3BQ is a grandfather again; son John, who has been attending the A.O.C.P. class this year, has a brand new daughter.

The Bi-monthly Victorian Scramble held on the first Monday in October got away to a good start and was very successful on all hands. Those who were operating in the Scramble found it a most enjoyable change to the normal contests and were very enthusiastic about the whole idea. However, we would appreciate more activity, particularly from the country stations. Between now and the next one, which will be held on 5th December, pass the word around and get it known. Remember the more stations operating, the more interesting it will be for all. The rules for the Scramble appear in the September issue of "Amateur Radio." The results of the October Scramble will be announced later.—Phyl Moncur.

30 METRE TRANSMITTER HUNT

A lovely sunny afternoon brought out a good attendance to the 30 mx Tx Hunt. At the starting point the competitors were a little confused as there appeared to be two signals, one sending "de 3WI" and another, in the place of the long dash on the normal code wheel, was sending "de 3ADU." The 3ADU tx was very much louder than 3WI, but fortunately both appeared to be coming from the same direction so all competitors moved off towards the north-west. On getting in the vicinity of the location, however, they found that the two tx's were situated some mile and a half apart and Eric, listening to the 3WI tx, was hand sending 3ADU from a Type A tx during the time 3WI was off the air. The actual 3WI tx had been concealed in a paddock of thistle bushes at Kellor and a co-ax line led to the top wire of the nearest fence. The winner was 3LN who took an hour and a half to find it, followed nearly an hour later by 3ZAD second and 3OJ third. It was certainly a hard one, but very interesting all the way.

The group, which numbered 34, then squatted down on the grass in a big circle and had afternoon tea together and a chat. These hunts are certainly an excellent way of getting to know the other Amateurs and their families.

How about coming along to the next one which is to be held on Sunday, November 13, commencing at 2.30 p.m. from the plantation

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SCREEN TAPS: 19% of Plate Z.
F.E.: Plus or minus 1 db 10-60,000
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35P/35P: 18 mH. maximum.
Prim/Sec: 20 mH. maximum.

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KT66, etc.

See "Radio and Hobbies" of
February, 1955, 17 watts
U.L. Amplifier.

20 WATTS: 30-30,000 c.p.s.

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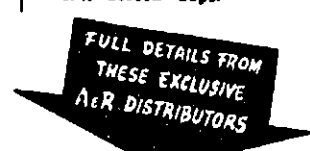
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In College Crescent at the rear of the University? The December Hunt will be held on 11th of that month. If you are not equipped with 80 mx receiving gear, come along just the same; it's a lot of fun looking on and it's sure to get you enthusiastic about building some gear. We can guarantee the family will enjoy the picnic, there are always lots of other children there. Tx Hunts have been known to completely convert anti-radio XYLS. During the summer months, with the warmer weather and long evenings, the group will be taking along a picnic tea. Hope to see you at the next hunt.

SOUTH WESTERN ZONE

Once again there is not much to report, in fact not as much as last month. I don't know what has gone wrong with this zone, never hear our Secretary on the hook-ups or for that matter none of our committee, so how about showing a little more interest in the zone affairs otherwise we will be a dying race. Heard quite a lot of the boys in the Contest. Bill Wines has been very active on the 20 mx band, having logged DLUX, DL4UZ, W7AAT, W6VZ, PY4VX, VEs and many others.

Tuesday night hook-ups are badly represented, in fact haven't heard anyone on it from this zone for a few weeks. I listen to Don JALQ most Tuesday nights; glad you had a good time at Albury. Hear Bill SAKW on fairly regularly. John 3ARJ is building a three stage rig so it looks as though the AT5 will be taking a back seat. Les 3DX is not very active as he sees enough of radio all day; his XYL is sick of the AT5 in the lounge, so best you get it pushing a little r.f. into the stratosphere. 3EQ hasn't been very active of late owing to pressure of work in the picture industry, but hopes to be able to devote a little more time to radio shortly.

Haven't heard Gordon 3AGV on lately; how is the Convention arrangements going? I hope you have it well in hand as it is not far off. I was in Ballarat recently and saw Bill 3AMH; he informed me that he was shifting to Bendigo as it was promotion for him with the S.E.C., but said he would be down at Colac in November. He will most likely be at 3AQN's QTH a lot.

NORTH EASTERN ZONE

Doug, well known formerly as 3IJ, of Mangalore, has transferred from his position at Cambridge, Tas., to the Dept. of External Territories and is going to be in the party to do the 1955-56 tour on Macquarie Is. as VK1IJ. Alan 3UI is leading a quiet life; Keith 3JC is busy on his house. Stan 3AGT is in comparative isolation up at Tongala, while Les 3ALE is able to keep in touch with others, like Brian 3ASF, and hear how Bruce 3AGG gets on with the DX after modifying his rx; Ted 3A0B is converting a Command rx. Peter 3APF limits his activity to local v.h.f. skeds, while Alex 3AT is playing with colour photography, and Secretary Earle Scoones plays with his motor cycle.

Jan, our local former PA0, has a good rx in action, as a step in the right direction. We regret losing John 3ZBG, from Numurkah. Vern 3AXW has his troubles with b.c.i., while Col 3WQ has overcome similar types with wave traps, etc. There are two Associate membership "prospects" in Cobram at the moment. Syd 3CI is ready for 20 mx now with a W8JK beam; Frank 3ZU will be away on leave, caravanning, shortly, and Jack 3AKC should have just finished his leave. Des 3BP has been heard working ZL on 20 mx.

Bill 3AWQ has obtained some Command equipment from Jim 3JK, prior to getting on the air. Des 3CO and Ken 3KR among the 20 mx DX. Jack 3PF handicapped out of radio by difficult circumstances "pro tem." Vic 3ABX has been seen in the distance. It is hoped that George 3GD is getting a go at the 15 and 20 mx DX, that is where Hugh 3AHF fills in his time. Bill 3JP is all for this DX business now. It is hoped that Keith Cakebread is able to complete his A.O.C.P. by passing the Morse.

EASTERN ZONE

Most important news is the formation of the Latrobe Valley Radio and T.V. Society. Members of the East Gippsland Radio Society went to a meeting convened at Morwell on 16/9/55, where 29 enthusiasts were present. The Zone President, Bert Budge, took the chair and it was decided to form the aforementioned society. Jack Sparks was elected President and Jim Quig Secretary, Ian Duncleiffe Vice-President. A simple objective was resolved: "To further the interests of the W.I.A. in the Latrobe Valley."

Meetings will be at 8 p.m. on the second Friday starting with Moe in October and as decided thereafter. Membership is open to anyone who is interested.

The E.G.R.S. will have a technical film night at Doug Anderson's home in Stratford on third Friday.

Jim Quig, of Morwell, has passed the Limited exam, and he has built an f.b. i.v. rx which is anxiously awaiting a signal. Ted 3ALA has a Junior op., son, now, and Alf Mackrell has another. 3SS and 3DY had a working bee two Sundays previous, when 3AHK, 3IO, 3AJA and Doug Anderson came over and helped push up a heavy windmill tower which some day will support a 144 Mc. beam.

Our zone hook-ups on 3650 Kc. at 2000 hours on Sunday are still popular, but we do miss our old friends. What about a brief appearance, boys?

CENTRAL WESTERN ZONE

Our Convention was held in Nhill on Sunday, 18th Sept. We were lucky in picking a nice sunny day and all functions were arranged by Herb 3NR and we owe him a lot of thanks for the way everything worked out.

First the 2 mx boys assembled their gear and had contacts with Clive 3ACE in Birchop. After an excellent lunch, we paid a visit to the Aerodrome and were shown over their equipment which included D.M.E., etc. We must thank the staff for going to so much trouble for us.

At the annual meeting the following officers were elected for the coming year: President, James Farrer, 3DP; Vice-President, Herb Brown, 3NN; Sec. and Treas., W. J. Kinsella, 3AKW. There was not very much business brought forward so the meeting soon finished and we again journeyed out to the 2 mx location and enjoyed more contacts.

Steve's (3ATR) and Ray's (3ATN) gear looked and worked extra well. Herb also had noble gear and his junior op., Gerry, is very keen on Amateur Radio. The gear which he has already built is a credit to him.

We had another meal and then were shown over the Nhill Power House by Alf 3CH. Some of us had to leave early, but most members were able to stay until the end, after a very enjoyable day.

Those present were VKs 3ATR, 3AKW, 3IB, 3NN, 3ARM, 3ATS, 3CH, 3EF, 3AFO, 3AKP, 3ATN, Jeff Oates, Lyle Schultz, Jack Pulman, Garry Brown, and David Goldsworthy.

PHONE NUMBER CHANGED

The telephone number of the W.I.A. Victorian Division has been changed to:
MY 1087

GEELONG AMATEUR RADIO CLUB

The 2 mx enthusiasts of Geelong were given the secrets of crystal control converters by Ed 3AKE at a recent tightly-packed club evening. Ed's success on 2 mx over many years, and the clear elucidation of many aspects of v.h.f. activity generally, will mean future impetus on this band by local members.

During Hobby Week in the metropolis, the boys took the opportunity of visiting the W.I.A. stand and enjoying a rag-chew with the city boys. A further highlight of the club's activities was a second talk by John 3SY on t.v. rx's and their design. John is well up to date with modern techniques in this field and is passing on his experience among the boys.

Jim 3ZBR is experimenting with a new converter and tx from his QTH near the Yu Yangs. Melbourne stations please note. Fred 3ALG has a new secondary standard—a 100 Kc. osc.—needs a 10 Kc. multivibrator to match it. Chas. 3XH is balching and manages to pound the ether. The other stalwarts 3BU, 3WT, 3AET, 3ALP are on at regular intervals.

QUEENSLAND

TOWNSVILLE AREA

Sorry boys that the notes did not appear in October—on eight weeks' leave. Opportunity was taken to visit the Exhibition in Brisbane during August and a few of the local boys were met during the visit. Unfortunately the monthly meeting was being held two days after I left, so unable to meet many others. Quite refreshing to see notes appearing from other parts of Queensland; keep them coming in, then we all know what is happening in each district.

Two meetings have been held of the T.A.R.C. since the last notes and attendance not quite as good as expected. Glad to report that at long last a student course for the A.O.C.P. has started with seven members and hope they will last the distance.

Next meeting will be held on 17th November when the lecture will be on Frequency Measuring by local R.I. The December meeting on 15th will be a visit to the Regional Electricity; 4RU will be conductor.

During the latter part of August the air was disturbed by a strong signal on 7073 Kc. from 4DK located at Ayr. Welcome to the bands John and may your signal never grow weaker; try the other bands some time. Quite a large round table on 7 Mc. each Sunday, the boys from Atherton, Marceba, Cairns, Townsville, Charters Towers, Ayr, Sarinee, and Rockhampton being to the forefront.

4EL and 4BE chasing the openings on 21 Mc. while 4LR, 4JH, 4RW and 4WH are on 7 and 14 Mc. 4EJ on 14 Mc. with his new shortened beam. Lance 3ZA looked in on 4EJ and 4WH; you forgot me Lance. Our old friend and ex-Secretary of the T.A.R.C., Ken Nutt (ex-4XD), passed through our fair city en route from Tasmania to Cairns to take charge of the local "B" class station; welcome back Ken.—4RW.

MARYBOROUGH

4CB and 4AI thinking of getting back on 6 mx. 4BG is already there, looking for the first break-through. 4CB bought lot of co-ax for his future 20 mx beam. I am not to mention that it was expensive in case his XYL reads these notes. What a pal! 4BG waiting for co-ax line and standing wave indicator for his 20 mx beam. 4GH improved the layout of his shack and can now walk into it. Contemplates further improvements that will permit him to turn around. 4AI off to Sydney for u.h.f. course; lucky lad!—4BG.

SOUTH AUSTRALIA

Well, long suffering Amateurs, the hot potato seems to be back in the President's lap, so, as the Christian remarked to the lion, "If we have to have dinner, Les, let's enjoy it together!" Jack 5JD, Federal Councillor and erstwhile scribe, quickly decided to take a trip via oil tanker to Singapore. Once a sailor always a sailor they say, Jack. Anyhow we hope that it is worthwhile, and that you will return to us ready to spar again with your traditional foe, 5PS. Frankly, I reckon that you weren't game to face me after I had put Pincott wise to you both when I conjoined with him in Melbourne.

And whilst on that subject, my thanks to Federal Executive for the time and good hearing that they gave to me and my cause; Gordon Dennis, the VK3 President, and all the members of the Magazine Committee for their wonderful hospitality. It was good to meet you oil chaps—for the lamb to lie down with the lions and partake of their largesse. The visit to the Victorian Division's display at the Models Exhibition came as a climax and I would like to congratulate those who were responsible for such an excellent set up. This opinion may be biased, but I did not have eyes for any other and even my XYL was visibly impressed! After that little homily, when are you going to invite me into the chair Gordon? I'd dearly love to spike Warwick's guns.

By the way, the residence of 5PS had its lid lifted during the Saturday afternoon's meteorological disturbance. We saw him soon afterwards and he remarked that he must be getting old because he didn't have enough heart even to gather up the pieces for his now chicken house! Our sympathies to Mrs. 5PS—don't let it spoil those banana cakes, Audrey.

The general meeting last month was well attended (to welcome back the President, no doubt) and a selection of general and technical films were shown. Taken on spec, they turned out to be quite an interesting evening's entertainment. Our worthy QSL officer was absent and Dougall 5BY and Norm did the honours.

The R.D. Contest was well fielded and our top six scorers really made the pace hot this year. Very fine effort chaps, and this Division's grateful thanks to those who sent in their logs—some 87 of them—to back up the finest effort that VK5 has ever made.

"The time has come," the Walrus said, "to speak of many things," and that reminds me that Council will soon be looking around for some lecturers for 1956-57. Anyone that can supply technical lecturers or who has contacts and ideas please pass them on to yours truly. Don't wait until June, 1956, because the programme has to be printed by 1st March. It's about time somebody came forth with a transistor 144 Mc. tx and rx. What about you Ian?

The Classes seem to be proceeding according to plan and we are very grateful to those who have come to the aid of Council in supplying Morse instructors. Carl, who is out of hospital and looking well again is keeping a fatherly eye on the "students" and steps in when a defaulter (me again) fails to punch the key. By the time you reach 14 w.p.m. chaps, you will have copied (?) the lists of 5MD, 5JD, 5OR, 5RG, 5FO and last, but not least, 5XU (no comment from 5CA, please).

The Sunday morning broadcasts were taken by John 6KX, our Vice-President and to him I tender my thanks. These broadcasts give me a great deal of pleasure, especially the contacts afterwards with the chaps, however short they may be. So don't be backward in popping up onto the band. SWI is usually on ten minutes or so before-hand too.

George 5EC, at Ceduna, is doing a fine job in the Bush Church Medical Aid Service, looking after the communications side of the business. He hopes to be down to collect a new ambulance in October so we may see something of him; has even made A.B.C. News for his work on transceivers for the fishing fleets. Good going, George.

Called into Renmark on the way home and had a yarn with Hobby 5RE, who was up to his armpits in concrete at the time. Fred 5MA was absent from work; reason I discovered when he appeared at the meeting. Roy 5DA and Bob 5BG both at the same meeting—presumably the lightning had scared both out of 5PI. Hughie 5BC was also on leave from 6RM, but I had a yarn with Harry 5KW and he let me into the secret behind the door Hughie. It all looks very nice to me, but of course is unmentionable (a 2 mx tx) in these notes.

Jim 2BO (ex-5EL) sends his regards to the VK5s from Goulburn and looks for contacts in his home State. A very cold impolite wind blew clean through us all, but Jim and his XYL thawed us out with a grand log fire and a brew of tea.

RYRE'S PENINSULAR

Wally 5DF, from Pt. Lincoln, reports that he is back on the air again with the stalwart AT3; it certainly sounds f.b. Associate Alf Mack graced the meeting place and reports are that he is studying hard for the A.O.C.P. Pat 5LT is working on his 20 mx rotary beam. Very little heard of Jack 5VJ these days; comes on for a rag-chew now and then and declares he's not pining away. Apparently Wally has better grape-vines than the Adelaide Plains for he reports that Darce 5RJ in Kadina is about to have 50 cycle power connected. Hope to work you soon Darce. Perhaps Les 5UX will shift and rejoin you all.

SOUTH EAST ABEAS

The monthly meeting was postponed and so misses these notes. Activity, like the weather, seems to be at an all time low, although Les 5ZAG has been doing well on 2 mx. Ray 3ATN, complete with mobile gear, was in the Mount on 25th Sept. and from Les' QTH established a two-way QSO with Bram 5ZAB. Later Bram copied Les 5 and 7 with Ray's signal also audible and coming from a halo antenna in his car. Claude 5CH has been heard on 40 mx with a new rig, but there are no details. Sorry I missed you Claude, but since Mohammed came to the mount and missed out, it looks as though the mount will have to come to Mohammed next time doesn't it? Have you ever used that one, Warwick? Col 5CJ is on holidays. (All the b.c. station engineers seem to be on holidays—how do they manage to keep going? Ah! I've got it, they're all going automatic.)

Erg 5KU is still battling with storm damage, but we understand he should be soon on 20 mx complete with beam. 20 mx quite good earlier this month and seems to be improving. Tom 5TW has been settling into his new QTH, but still manages QSOs on Monday nights. Stuart 5MS has spent a little time fitting a VR150 to his v.f.o. and by the time this is printed will have left his mark on the VK-ZL Contest, no doubt. The beam still needs adjustments, though. A visit from Jack 4SF and XYL during September brought forth a lively discussion on DX and antennae. Those are the things that stick out from a butterfly's head, aren't they Stuart? Better antennae and receivers should bring their reward to the 2 mx gang also.

Worked Jack 3JA from Hynam, with the result that Jack and XYL introduced us to Nullawarre's fine brand of scones and cream. Jack's hospitality was typical of all the Amateurs that I had the privilege to meet and it left me feeling that this grand hobby of ours has something else far more valuable than just the DX or the experimental aspect. The bond of real friendship that exists in Ham-down would solve all the International problems if only it could be extended into the realm of power politics.

And one final word—if the compilation officer blue pencils any of this, then I'll red pencil his "A.R.'s" and even might go so far as his p's and q's also!

Is it that the VK5 boys are getting old, do they like giving things away, or are they only interested in the tintinnabulation of wedding bells? According to our spy (unpaid) in VK5 land, Old Joe 5JO is doing a double act, Joyce was given away on 15th October, and is backing

up for a second helping when he gives Joan away on 24th December. Not to be out done, Frank 5MZ is taking the long walk with his daughter Barbara on 5th November. Are the respective grooms members of the W.I.A.? If not, SPS will please follow up.—Editor.

TASMANIA

This month the libel suits and various summonses should be addressed to 7LE as the culprit for this month's notes. Tiny JJD, the usual scribe, is rather snowed under with circumstances this time and isn't able to compile the gossip.

At the general meeting held in the club rooms on 5th October a roll up of 23 members attended. Snowy 7CH was in the chair in the absence of the President, and Bill Tait carried out his usual secretarial duties. The chairman welcomed Bob Forster to the meeting; Bob is an ex-VK3 and is at present at Cambridge Aerodrome. Business for the evening was mainly taken up by Federal matters, the main item being that F.E. requires a survey to be made of the coverage over the State of the slow morse transmissions on 80 mx. 7KA is running the present slow morse transmissions and he would greatly appreciate reports from any listeners. It was decided to hold the first tx hunt of the season on Sunday, 8th Nov., the tx to be on 144 Mc. only and to be hidden by 7AL. In reply to my complaint that my v.h.f. gear was getting very warm through use on field days, I received scant sympathy and the offer of a tin of grease for the genemotor—or was it for something else?

Tom 7FM suggested that a field day be held on the lower frequencies to foster the building of equipment suitable for emergency working and after much discussion the matter was left for investigation in the hands of 7AL and 7FM. The matter of commercial stations in the Amateur bands was raised and discussed and members were requested to log those that can be identified for forwarding on to F.E.

At the conclusion of the business section of the meeting a lecture was given by Joe 7BJ entitled "Crystal Converters for the Low Frequency Bands." As usual Joe had his subject at his finger tips and presented a theoretical method of covering all bands from 80 mx to 10 mx by using only three crystals. A vote of thanks proposed by Athol 7AJ concluded what was to me a most informative and interesting lecture. But will it work Joe?

Main event of this month is the arrival of the stork at the TDH residence with a double bundle—yes twins—push-pull or parallel Dave? The old wireless bird was also busy at Queens-town last month with a surprise for 7LS—I forget which it is now, but it's either a boy or a girl! 7BR busy again too, re-building the rig I mean. 7ML getting lower in frequency and now in the audio range at the best broadcasting station in Australia (VK5 please note).

Many sore feet, aching backs and sweaty brows marked the conclusion of the recent regatta exercise held in conjunction with the Walking Club and Police. Doug 7AB had quite an experience when a light plane assisting the exercise crashed within a 100 yards of him. I understand that Doug's condition had found him out by the time he reached the wreck, or was it the result of the loss of the end of a finger on the terminal of the h.t. transformer? Anyway, Doug nearly threw a seven both times, but third time lucky. Insurance paid up Doug?

Associate Geoff Foster thinking hard about sitting for the ticket; come on, take the plunge Geoff, and you too Vance, what about that ticket. 7AJ has now finished the mobile 2 mx rig with a halo on the back bumper bar—silver plated, too. Athol found out that it's not a good idea to poke at the innards of a genemotor with a screw driver while it's going. 7WN interested in hi-f and building a vented enclosure. 7DH and 7MH in a huddle with s.s.b. with something liable to pop up at any moment. Barney Watson learnt the hard way that you must tune the grid coil of a rx osc. and not the feedback winding if best results are required. I believe about four hours of frustration took place before the house fell!

NORTH WESTERN ZONE

News from this area did not appear in last month's edition; this was because the writer had got a few dates a bit mixed up and when he got them straightened out it was realised that there was insufficient time for the notes to reach Melbourne in time for publication.

R.D. Contest has been and gone once more and this area was quite active. Ken 7AI made over 200 contacts and managed to milk a few cows in between times. Others putting up a pretty good score were Roy 7RN and Sam 7UW. Sid 7SF and Ellis 7WA were very busy also although their time was limited, having had other business to claim their attention.

Ellis 7WA has been busy this last month or so building himself a new tx—a real posh job; although not yet completed, Ellis has been heard working Europe using only his driver stage as the final amplifier. Sam 7UW has been going ahead with the erection of his 3 el. beam for 20 mx and hopes to have it working in a few weeks' time.—7UW.

CORRESPONDENCE

The opinions expressed in these letters are the individual opinions of the writer, and do not necessarily coincide with those of the publishers.

LIMITED LICENSE

Editor "A.R." Dear Sir,
For several reasons I did not receive my copy of Sept. "A.R." until recently, otherwise I would have tried ere this to bring peace and quiet to VK3BG. To put some of BG's statements back on the rails before burying the subject, may I say there is no "literary battle." Six letters in three months is not even a skirmish! There is no "dirty washing." Surely in agreeing with the remarks of VK3XU and VK3ZAG, only in so far as they concerned the L.L.'s, and in stating VK6 is not disloyal and why, is not dirty washing.

There was no "subtle reference" that my colleagues and I were "doing something for the electronic art" on the v.h.f. (I stated I had never been above 144 Mc.). Nor was there any "inference" about the "epitome of Amateur Radio." Everyone knows that for many years the Ham has taken his lead from the laboratories, etc., but the Ham who takes the latest v.h.f. knowledge, and experiments with Ham gear, is, as I said, "breaking new Ham ground on the v.h.f. with equipment the average Ham can afford."

Had VK3BG taken my remarks on their face value, he would have saved himself a lot of beautiful words. And there is no need to worry about the "cancerous growth," because we have found the East has not got a monopoly of wise men.

The L.L. subject has been discussed, etc., here and put into cold storage. Let's leave it there. Anyway, 73 VK3BG.

—J. C. Hoar, VK6OR.

[Correspondence on this matter is now closed.—Editor.]

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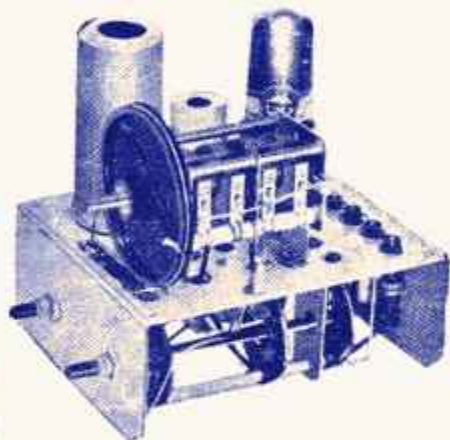
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EDITORIAL



BALANCE

Those who have operated push-pull amplifiers know the need for maintaining proper balance in the drive applied to the final. Lack of balance leads to loss of efficiency, in fact, a waste of drive and power input.

It is not only in strictly technical matters that we have to aim for balance; we have to look at ourselves critically from time to time to see that we are keeping a proper balance in our approach to Amateur Radio. The Amateur's Code is clear and exceedingly concise on the matter. It sets out in no uncertain terms to remind us that Amateur Radio is a hobby and, as such, it should not be allowed to interfere with the duty owed to the home, to the job or to any other of the essential ingredients of our Society. A balanced outlook is particularly necessary here.

What about your view of other Amateurs? Do you scorn the c.w. operator as a purveyor of smoke signals in an atomic age or do you accept the fact that he is having a lot of fun without taking up much of the band? Do you growl at an s.s.b. operator for putting out an unreadable signal when all that's wrong is that you haven't mastered the technique for copying this method of transmission? Or are you such a confirmed brass pounder that you regard every phone operator as a potential splatterer?

We must also make sure that the Institute itself, as the representative body of the Australian Amateurs,

acts in a level-headed way on all matters that come within its scope. Particular topics may, from time to time, require urgent action and may tend to obscure the broader view of the Institute's responsibility, but every individual action has to be related to the Institute's main objectives—to uphold the status of the Radio Amateur and to foster a friendly spirit among Amateurs.

The democratic constitution of the Institute gives every member the opportunity to express his views and to help in guiding the Institute along a proper course. With that opportunity goes the responsibility for the concerted action of the members. It is in responsibility for action that the need for a balanced outlook is most necessary. A balance that allows for the views of the other fellow and for the relationship between the Institute and the public will ensure that the drive put into our hobby produces the most efficient output in terms of interest in our hobby and maintenance of the high standing of the Radio Amateur in the eyes of the public.

The season for making resolutions is nearly here. Let us all resolve to maintain a balanced approach to the problems of the coming year. With the approach of the festive season, the Federal Executive on behalf of the Federal Council wish you all—

A MERRY CHRISTMAS AND A
HAPPY NEW YEAR.

FEDERAL EXECUTIVE

THE CONTENTS

| | | | |
|--|----|--|----|
| Science in Antarctica | 2 | Television Station Operators' Certificate of Proficiency | 14 |
| Handy Index to "AR" Technical Articles—1945-55 | 6 | DX Activity by VK3AHH | 15 |
| Pan Pacific Scout Jamboree 1955-56 | 10 | Fifty Megacycles and Above | 17 |
| A Transmitter With Low Harmonic Output—Part Three—Speech Amp. and Modulator .. | 11 | S.w.l. Section | 18 |
| 1955 Remembrance Day Contest Results | 12 | Trade Review—Plated Crystals .. | 18 |
| National Field Day, 1956, Rules .. | 14 | Federal, QSL, and Divisional Notes | 19 |
| | | Prediction Chart for Dec., 1955 .. | 21 |
| | | Index to Volume 23—1955 | 24 |

SCIENCE IN ANTARCTICA

BY HANS J. ALBRECHT,* VK3AHH

BLIZZARDS up to 100 miles per hour, drifting snow and a desert of ice and rocks as far as the human eye can reach—this is Antarctica! And yet, this mighty sixth continent may show a friendlier face; bright sunshine and fine weather are not uncommon.

No doubt, it is cold down there! In winter nights, temperatures drop to as low as —25 degrees Fahrenheit. Even in summer, Mawson is no Queensland holiday resort! Maximum temperatures are in the vicinity of 40 degrees.

And why, then, is this huge block of ice of any interest to us? The human race has always been inquisitive. Are we not planning space ships to investigate other planets and the space outside the earth? The age of discoveries belongs to the past, but it is still human objective to gain thorough knowledge of every spot on our own globe!

Famous explorer, Captain James Cook, set the Antarctic ball rolling as early as 1774. Since then, numerous scientific expeditions were successful in widening human knowledge on Antarctica. The establishment of the Antarctic research base at Mawson aims at continuing and extending these investigations in conjunction with the work done by other nations.

When the research programme commenced early in 1954, the immediate goal was the collection of data to form a sound basis for future expeditions on the mainland. Prior to this, much preliminary work had been done in the sub-Antarctic region. In 1947-48 permanent stations were set up on Heard and Macquarie Islands, of which the latter is still in operation.

Since 1949, the entire research programme has been directed, planned, and arranged by Mr. Phillip G. Law, Director of the Antarctic Division, Department of External Affairs. In his capacity as leader of the annual Australian expeditions, Mr. Law is also responsible for the all-important overall direction of actual research work performed at the research stations of Macquarie Island, Heard Island (until 1955) and Mawson.

Mr. Law is ably assisted by scientific personnel trained and experienced in all relevant fields of Science. To help towards successful evaluation of Antarctic data and adequate equipment of expeditions, experts of other scientific institutions are actively engaged in co-operative work.

Although the permanent research station was established only in 1954, observations so far already show some conclusive results. The additional equipment installed early in 1955, and the substantial expansion of the entire research programme planned for 1956 promise outstanding results. The programme may be subdivided into four main groups, namely, Geophysics, Geology, Meteorology, and Biology.

Australia intends considerable research contributions to the International Geophysical Year 1957-58, when physicists of all nations will concentrate on

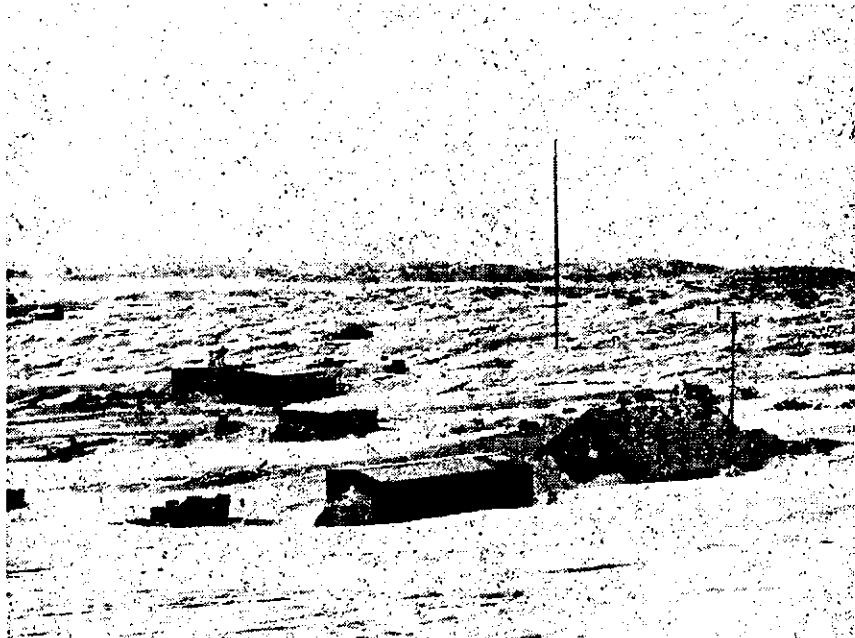
world-wide geophysical investigations. The expansions planned for 1956 necessitate more special equipment. Two aircraft will be stationed at the Australian research base. Their value is unquestionable for aerial investigations and assistance to field work. In addition, other important auxiliary equipment will soon be shipped to the icy continent.

GEOPHYSICS

Under this heading, let us have a closer look at investigations in **Radio Physics and Ionosphere, Geomagnetism, Seismology, and observations of Aurora and Cosmic Rays.** The first mentioned branch refers mainly to upper atmospheric research. Well known applica-

that a wave having been reflected vertically by the layer can be received in the normal fashion. The height of a layer is determined by the total time taken by the wave. The intensity of the reflected signal allows information to be obtained on the characteristics of the layer. Each of the ionospheric layers, i.e. E, F1 and F2 layers, is capable of vertical reflections up to a certain frequency, its critical frequency. To investigate variations of this frequency, the transmitter and receiver are equipped for continuously-variable operation between 1 and 20 Mc., say.

The simplest methods use manually controlled tuning and band-switching of a single stage transmitter and an appro-



General View of Australian Research Station at Mawson.

A.N.A.R.E. Photo by W. R. Dingle.

tions of Radio Physics are height measurements of the different ionospheric layers, observations of radio propagation phenomena and the prediction of same.

Obviously, observations of propagation have practically been carried out by the radio communication work. During 1954, Mawson kept in constant touch with Sydney, Perth, Heard Island, and South Africa, for the purpose of meteorological and normal telegram traffic. Improvements being contemplated, additional communication equipment will be set up early in 1956.

During the International Geophysical Year 1957/58 recordings of ionospheric layers will be taken at Mawson by means of an ionospheric recorder. At this stage it is advisable to briefly review various types of such equipment.

Fundamentally, a complete ionospheric recording unit consists of transmitter, receiver, and indicator, for the study of ionospheric reflections. The transmissions are pulse-modulated so

priate receiver. The indication is achieved by a cathode ray oscillograph whose trace can be utilised for photographic recording. The presence of a person being required, this type is more suitable for single observations of special phenomena.

Another type consists of a two or three stage transmitter with automatic mechanical tuning. Special attention must be given to automatic band-switching. The main problem is adequate mechanical and electrical tracking of the whole device. However, accurate recording can be obtained by this method. A German recorder is known to have a total frequency range of 1-16 Mc., being tuneable in a period of eight minutes.

The third method uses a fixed pulse-modulated signal on about 30 Mc. and a variable oscillator with a range of 31-50 Mc. Both frequencies are mixed, thus resulting in a total range of 1-20 Mc. being covered without band-

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switching. If wide-band amplification is employed, the only variable component is the oscillator 31-50 Mc. The mechanical requirements of the receiver can also be reduced to a minimum by mixing the incoming signal and the variable signal used for the transmitter. A constant i.f. of 30 Mc. is obtained and can be handled in the normal way. Ionospheric recorders of this type are generally designed to sweep through the complete range in a period of about 30 seconds.

The fundamental disadvantage of covering the entire range in a relatively short space of time is the inability of detecting eventual multiple vertical reflections between layer and ground. On the other hand, the short period makes this method particularly suitable for use in Arctic and Antarctic regions, where frequent changes of ionospheric characteristics are encountered. As far as is known to the writer, this principle has been employed very successfully in Kiruna (North Sweden), for a number of years. The recorder to be installed at Mawson in 1957 will also be of this type.

The study of **Ionospheric Winds** has recently become popular with scientists of this branch. Up to now, the only possible method of measuring winds in a height of 40-60 miles is the observation of the drift of meteor trails. Let us recall that meteors cause a certain ionisation on their path through the atmosphere, thus leaving an ionised trail. If the ionisation is sufficiently intense for a reflection of radio waves to take place, the drift of such trails can be observed until they have dispersed. Thus indicative information on "winds" in this part of the ionosphere can be obtained.

The operating frequency of such equipment is usually in the vicinity of 30 Mc. The use of an accurate beam antenna allows the direction to be determined. By employing pulse modulation, both transmitter and receiver may be installed at the same place. The installation of equipment of this type at Mawson is planned for 1956.

Another branch of Geophysics is called **Geomagnetism**, thus denoting the Science of the earth's magnetism. Let us recall that our good globe may be regarded, for demonstration purposes, as a magnetic solenoid, its poles being in the proximity of the geographical poles. Therefore, lines of force indicate curved paths, similar to those of a normal magnetic solenoid, and end at the poles. Without question, magnetic observations are of extreme interest in the regions close to the poles. Subdividing the total magnetic intensity into vertical and horizontal components, the latter obviously shows a much smaller intensity in polar regions than in, e.g. our latitudes. For this reason the vertical component is measured and forms, together with observations of inclination and declination, the scientific information on geomagnetic characteristics. Following preliminary investigations of the vertical intensity in 1954, a complete magnetic observatory will commence full operation in 1956.

Seismology is the Science concerning studies of earth tremors. The seismograph is the main instrument for obtaining data on maximum velocity and ac-

celeration, amplitude, and direction of any vibration of the ground and in a distance from the seismological observatory. The instrumental set-up at Mawson does not differ, in principle, from that used elsewhere. Seismographs normally consist of a heavy mass being flexibly connected to a frame which is fixed to the ground. Seismic vibrations cause the heavy mass to attain a movement relative to the frame. Amplitude and other characteristics of this movement may then be recorded. The recording can be achieved by a simple recording pen or by optical means. Also, the measurement of capacitance variations against a fixed plate can be utilised as indicator.

One of the most spectacular aerial displays is the **Aurora**. It normally appears in the form of a band or arc of more or less coloured light with rays of light streaming towards the band or arc. These may be pulsating or station-

changes in the magnetic intensity, due to extraordinary movements of electrons and ions within the magnetic field of the earth. In most cases, ionospheric and magnetic storms accompany each other. Such storms occur more frequently in polar regions than in other parts of the world.

Concluding our general discussion of the aurora, mention must be made of the obvious relation between the eleven-year cycle of sunspot activity and occurrence of the aurora. There is, however, a difference in "phase" of both cycles.

The basic method of scientifically observing the aurora is visual observations in connection with a theodolite for determining the direction of the display. The position in space can be found by parallax photography. Aurora observations at Mawson began in 1954.

Although the study of **Cosmic Rays** actually belongs to Nuclear Physics, its



Inside the Radio Hut; the relief party has arrived! Eric Macklin, VK1EM, taking over from Bill Storer, VK1EG.

A.N.A.R.E. Photo by George Lowe.

ary. Very small particles, with electrical charge, so-called solar corpuscles, originate from the sun and reach the surroundings of the earth's atmosphere with high velocity. The magnetic field of our planet causes their diversion towards the poles. Upon bombardment by the solar corpuscles, the molecules of the atmospheric gas emit rays of visible light. The height of the aurora is governed by the maximum distance the corpuscles can penetrate into the earth's atmosphere. A minimum height of 50 miles is normal.

As has just been indicated, the frequency of occurrence of the aurorae is much higher in the polar regions. However, observations beyond these zones may be possible when the influx of solar corpuscles is particularly intense.

It is interesting to note that aurora displays are a visible indicator of ionospheric disturbances. The solar corpuscles also cause magnetic storms, i.e. abrupt

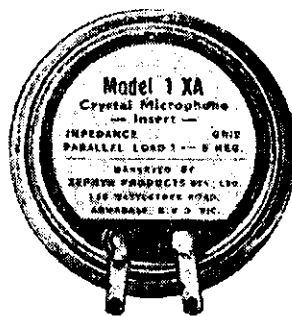
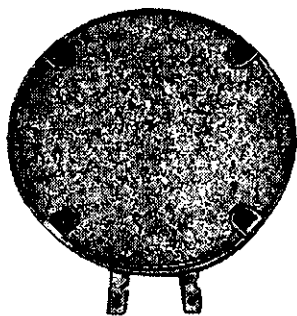
discussion here is justified by its connection with Geophysics. Cosmic Rays were discovered about 45-years ago, and their actual origin is still unknown. It is, however, known that particles of considerable energy, viz., Protons, Alpha-Particles, etc., pass from space into the earth's atmosphere. In consequence, a number of nuclear processes occur in the atmosphere, resulting in modifications of the original radiation and, particularly, the formation of new particles. Among others, Mesons—particles with 200 to 300 times the mass of an electron—are known to be formed. Cosmic radiation has been found to vary with latitudes. Taking one thing with another, a lot of research work is yet to be done in all parts of the world.

Equipment for Cosmic Ray investigations was installed at Mawson in 1954. Generally, Geiger counter and cloud chamber are used for such observations. The latter allows the track of a charged particle to be observed. A number of

MODEL "1XA" CRYSTAL MICROPHONE INSERT



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FITTED WITH PLATED REAR SHIELD TO ELIMINATE HUM PICK-UP

- Patented crystal unit guarantees outstanding efficiency and performance.
- Protected against ingress of moisture with approved moisture sealed crystal element.
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- Good high frequency response ensures excellent speech reproduction.
- Aluminium diaphragm mechanically protected and frequency controlled by "Zephyrfil" filter.
- Australian made throughout.
- Only carefully selected cements used throughout, to suit Australian climatic conditions.

TECHNICAL DETAILS

Rochelle salt crystal microphones are perhaps the most widely used for all types of service where quality speech and music reproduction at high output levels is a requirement. They are dependable in performance and when fitted with the appropriate "Zephyrfil" filter, their frequency response may be adjusted to suit any application or requirement.

This crystal microphone requires to be terminated with a high value parallel load of the order of 1 to 5 megohms for best results.

The mass of the moving parts is small, hence the sensitivity is high and a high efficiency is achieved.

Light gauge solder lugs are provided so that excessive heat in soldering will not be transmitted to the crystal element.

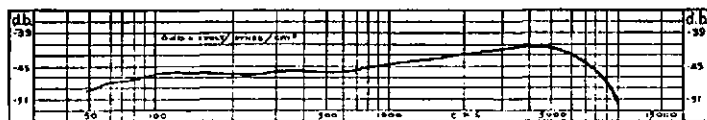
When mounted in a microphone cage, it is recommended that the insert be suspended in rubber, to eliminate shock and vibration.

One of the connecting lugs is directly connected to the case and care should be taken to solder the metal shield of the microphone cable to this solder lug, keeping the unscreened portion of the centre conductor as short as possible to eliminate hum pick-up.

All crystal elements are mounted on high grade suspension pillars, being fixed thereto with a good quality cement, thus ensuring stability and long life.

Case $1\frac{1}{2}$ " diameter (rear), $\frac{3}{8}$ " thickness, $1\text{-}13/16$ " overall diameter (front) with filter fitted.

Frequency Response = 60-6,500 c.p.s.
 Output Level = -45 db (0 db = 1 volt/dyne/cm²)
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Geiger counter tubes can be set up as a so-called Geiger counter telescope, the coincidence detector principle being utilised. One method of recording is the hourly photograph of an electrical counting system.

GEOLOGY

Geology is another important branch of Antarctic research. In addition to investigations into the petrological and structural development of the Antarctic continent itself, search for mineral deposits has been the task of all expeditions. As in other fields, Australia's contribution is considerable and promises good results.

The continent as a whole has been found to contain valuable minerals. Summarising expeditions from all contributing nations, deposits of the following minerals have so far been discovered: coal, titanium, iron, copper, molybdenum, lead, antimony, zinc, and even traces of gold.

METEOROLOGY

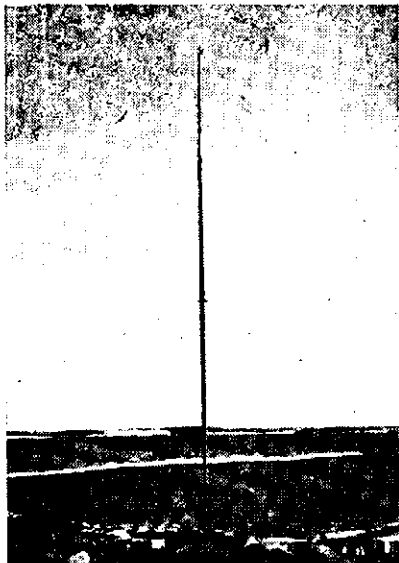
There is hardly any country beside Australia with more justification to setting up a meteorological research station in Antarctic regions. Australian weather forecasting has always been handicapped by the lack of observing stations between the virtual origin of cold air masses and this country. However, any reasonable and respectable weather prophecy is based on accurate and plentiful observations spread over as wide an area as possible. As is generally known, data thus obtained are sent by radio to the meteorological centre where they are evaluated and entered in a weather map. The meteorologist then determines forms and possible paths of cyclones and anti-cyclones depicted on the map, and subsequently issues the forecast. If a sufficient number of observations is not obtainable, the meteorologist's work is far more difficult and can even be deformed to rather unscientific prophecy.

Observations at ordinary meteorological stations include measurements of temperature, humidity, barometric pressure, wind velocity, and wind direction. All these components can be recorded continuously by simple recording instruments. Surface stations use normal thermometers, hygrometers, barometers, and thermographs, hygrographs, and barographs for recording. Mechanical or electro-mechanical wind recorders are utilised for investigations of the wind.

Miniature automatic stations—so-called radio sondes—are sent up into the atmosphere. A small transmitter continuously radiates data on the air layers penetrated by the sonde. A special recorder is connected to the radio sonde receiver at the ground station. There are a number of possible operating systems of radio sondes. The sonde type used in Australia measures three components and contains a single stage transmitter on 72 Mc. which is modulated by an audio oscillator. Both temperature and humidity act on different resistors in the audio oscillator circuit, thereby changing its frequency. The third component—the barometric pressure—causes a contact arm to slide over the series of contact strips which are alternatively connected to temperature or humidity resistor, respectively.

Thus the frequency of changing from one of these components to the other is an indication of the barometric pressure. With this type of radio sonde, the v.h.f. carrier frequency remains unchanged. It is, however, subject to instability usually encountered with single stage transmitters in v.h.f.

During 1954, the upper-air research at Mawson was confined to ascents of pilot-balloons. The path of such a balloon is watched by personnel at the ground station, in general by visual means only. This year brought about the installation of complete radio sonde equipment. As far as can be foreseen, 1956 will see the operation of a more advanced type of radio sonde. Its operating frequency is around 400 Mc., which allows accurate direction-finding to be performed by a beam type of antenna. Consequently, this type of radio sonde can also be used for observing



The Main Radio Mast at Mawson.

A.N.A.R.E. Photo by Phillip Law.

the actual path of the radio sonde. Considering the fact that heights of 60,000 ft. are quite normal for radio sonde ascents, it can easily be realised that comprehensive studies of upper-air winds are possible. This can be of enormous importance to Antarctic research.

It is usually impossible to base climatic information of any place in the world on less than at least two years' records. However, some of the readings obtained at Mawson in 1954 are certainly interesting. The air temperature can be around 40 degrees (Fahrenheit) in summer; obviously, such relatively high values are only reached sporadically. And, of course, you cannot imagine a block of ice as large as Antarctica to remain lukewarm in winter. While previous expeditions have proved that temperatures down to -77 degrees can be expected, the 1954 Mawson observations show minimum values in the vicinity of -25 degrees.

As reported in the log of the 1954 team, winds can be rather unfriendly, in fact you do not call them winds anymore! Blizzards of up to 100 m.p.h.

have been recorded. These, in addition to drifting snow, are the most unpleasant climatic conditions observed at Mawson.

One of the main objectives of world meteorological research is the establishment of reliable methods of long-range weather forecasting. It seems that satisfactory principles can only evolve from more detailed investigations of large-scale heat economy. This mainly comprises evaluations of the fundamental meteorological data mentioned above in addition to research in other related fields. The most important additional quantity is the solar energy received by the earth's surface. There is certainly some truth in the statement that "the good sun is the driving force behind the weather of our globe." And investigations of meteorological radiation are of particular interest in Antarctica, because very little has so far been done in this field.

In principle, such measurements are concerned with the two fundamental kinds of radiation: the incoming radiation produced by the sun, and the radiation component re-radiated by the earth's surface.

As the first quantity results in a relatively large amount of heat, its determination has been no problem to scientists for the last 100 years. However, the situation is entirely different with the latter quantity, which only comprises a relatively small amount of energy in a different spectral range. Thus its measurement is somewhat problematic. Until recently, only complex laboratory apparatus were capable of adequate readings. Some five years ago, however, this situation was remedied by the invention of a new principle enabling handy, robust and yet sensitive field instruments to be designed. This development was done in Australia. The 1954 expedition at Mawson utilised, with outstanding success, a special Antarctic type of this instrument. The evaluation of the data promises equally excellent results.

As is undoubtedly known to readers, scientific fields overlap each other, to some extent. Radiation research can also be regarded as Geophysics. Likewise could the following subject—Glaciology—have been dealt with under the heading Geophysics.

Glaciology is the Science of glaciers, glacial ice, glacial formation, etc. The 1954 team at Mawson carried out some glaciological research work. Such work normally consists of observing changes in glacial characteristics, and measuring temperatures at certain depths and other quantities. Changes are best observed by marking existing characteristics. Special types of electrical thermometers are employed for measurements within the ice.

BIOLOGY

Seals, sea birds, penguins, and whales are well known members of Antarctic animal life. Investigations include studies of species, migrations, life cycles, population, and other characteristics of the animals mentioned. Vegetation is restricted to lichen, mosses, and algae. A detailed biological research programme will commence at Mawson in 1956. Work so far has been of a preliminary nature.

Handy Index to "AR" Technical Articles—1945-55

Several months back we received from a VK4 member an index of technical articles covering "A.R." back to October, 1948. Until we checked it, we had every intention of publishing it. However, a close check showed that many alterations and additions would be needed to make it suitable for publication. The project was about to be abandoned when a member of "A.R." staff undertook the task of compiling an index covering all "A.R.'s" back to 1945.

As this staff member wishes to remain anonymous we think, in fairness to him, that the originator of the idea and those who checked the work should also remain unknown.—Ed.

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| Compact 40 Metre Antenna | Jun. '51 |
| Construction of a Cheap Beam Current Distribution and Impedance Ratios in Folded Dipoles | May '47 |
| Design of Compressed High Frequency Beams | Nov. '45 |
| Emerg. Network W.I.A. Ant. | Oct. '55 |
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| Folded Dipole | Feb. '47 |
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| Harmonic Reduction with Stubs | Apr. '49 |
| Hints and Kinks—Feeder Spreaders | Mar. '55 |
| Preventing Metal Fatigue in Beam Elements | May '54 |
| Weatherproofed Ribbon Feed Line | Apr. '55 |
| "Lenfo" Series Phased Array .. | Jan. '50 |
| Let's Build a Tower | Aug. '55 |
| Lightning Protection for Transmitting Antenna | Nov. '55 |
| Long Wire | Aug. '54 |
| Low Cost Hydraulic Beam Rotator | Nov. '48 |
| Mobile and Emergency Antenna | Mar. '51 |
| Multiband Antenna Coupler | Nov. '53 |
| Orientation of Beam Antennae | Dec. '46 |
| Presence of Standing Waves in Wooded Country | Nov. '46 |
| Prop. Feathering Motor as a Beam Rotator | Jun. '49 |
| Quarter Wave Matching Stubs' Impedance Calculations | Jan. '53 |
| Resistance of Folded Dipoles | Oct. '48 |
| Rotatable Beams on a Windmill Tower | Dec. '48 |
| Series or Parallel Tuning | Mar. '50 |
| Series Phased Aerial Arrays | May '48 |
| Additional Data | Aug. '48 |
| Short Circuits—Motor for Rotary Beams | Jun. '48 |
| Six Days a Week, but not on Wash Days (rotary beam) | Jul. '51 |
| Six Element Rotary Beam for 166 Mc. | Jul. '47 |
| Skeleton Slots | Feb. '54 |
| More About Skeleton Slots | Oct. '55 |
| Skeleton Slot Antenna | Apr. '55 |
| Some Measurements of the Impedance Multiplication Factor of Folded Dipoles | Jan. '48 |
| Special Multiband Antenna | May '53 |
| The Complete Amateur—Aerial and Feed Lines | Jul. '54 |
| Aerial Tuning Unit | May '54 |
| Newcomer's Introduction to Aerials | Nov. '54 |
| The QH (Quick Heading) Beam | Oct. '52 |
| The Quad Beam | Jan. '49 |
| Turning Indicator for Rotary Beams | Dec. '48 |
| Twin Doublet Antenna with Alternative Phasing | Feb. '52 |
| Twin-Lead "Sprigs" (two antennae to one feed line) .. | Apr. '55 |
| Two Worthwhile Antennae (Windom and 6-2 Metre) .. | Feb. '52 |
| Tx Hunting Shielded Loop | Mar. '53 |
| "Unfolding the Folded Dipole" .. | May '47 |
| V.h.f. Antenna | Apr. '47 |
| VK3WI Array for 144 Mc. | Nov. '50 |
| 21 Mc. Antenna | Nov. '52 |
| 3 El. 14 Mc. Rotary Beam | Jul. '53 |
| 80 Metres and How | Mar. '49 |

AUDIO FREQUENCY EQUIPMENT

| | |
|---|----------|
| Amplitude Modulation | Oct. '48 |
| Care of Crystal Microphones .. | Jan. '51 |
| Carrier Control with Self Biased Clamp Tube Modulator .. | Apr. '53 |
| Clamp Tube Controlled Carrier for Screen Grid Finals (see erratum in March) | Feb. '52 |
| Clearing the Ether, Series II.—Part X.—Audio System | Jun. '47 |
| Part XI.—Modulator Unit | Sep. '47 |
| Compact 75 Watt Modulator | Oct. '49 |
| Diode F.M. | Jan. '53 |
| Driving Zero Bias 807s | Jul. '50 |
| Dual Grid Modulation | Mar. '53 |
| Hints and Kinks—Matching Low Impedance Phones | May '54 |
| Inexpensive Microphone Case .. | Feb. '49 |
| Logarithmic Compressor | Oct. '50 |
| Low Level Audio Peak Clipper .. | Oct. '53 |
| Mobile Modulator | Apr. '53 |
| Mobile Modulators | Mar. '51 |
| Modulation Relationships | Dec. '45 |
| Parallel Cathode Modulation .. | Apr. '49 |
| Plate Modulating the Beam Tetrode | Mar. '48 |
| Pointers on Good Qual. Phone Amplifier Design for Speech .. | Aug. '48 |
| Premodulation Clipping and Filtering | Feb. '51 |
| Purloined Teastrainer (microphone case) | Dec. '54 |
| RC Filter for Speech Amplifier Clipper | May '51 |
| Reducing Hum | Feb. '49 |
| Reducing Splatter | Aug. '50 |
| Restricting Speech Range in Speech Amplifiers | Dec. '49 |
| Ribbon Microphone | Nov. '45 |
| Rothman System of Modulation .. | Aug. '52 |
| Screen Modulation with Audio Controlled Carrier | Jun. '50 |
| Series Cathode Modulation | Jan. '49 |
| Short Circuits—Feed-back Trouble in the Modulator | Jul. '48 |
| Removing R.F. Feed-back from Modulator | Jul. '48 |

| | |
|--|----------|
| Simple AMC Circuit | Dec. '49 |
| Simple Speech Clipper | Jul. '49 |
| Superb 30 Watt Modulator | Jan. '53 |
| Ten Watt Audio Amplifier | Feb. '46 |
| The Complete Amateur, Speech Amplifier and Modulator | Jun. '54 |
| Theory and Design of Speech Clipping Circuits | Jan. '51 |
| Universal Speech Amplifier | Jul. '49 |
| Using Low Impedance Phones .. | May '47 |
| Wideband Audio Phase Shift Networks—Part One | Jun. '55 |
| Part Two | Jul. '55 |
| 100 Watts from Class B 807s .. | Aug. '48 |
| 120 Watts of Audio without Driving Power | Aug. '55 |

DISPOSALS EQUIPMENT

| | |
|--|----------|
| AR301—Simple Conversion of AR301 to 144 Mc. | Jul. '52 |
| AR7—The AR7 for Ham Bands .. | Jul. '48 |
| AR8—Modification to AR8 Rx .. | Oct. '49 |
| AR8—Modification to AR8 Rx .. | Feb. '51 |
| ASB4—One Metre Superhet, Conversion of ASB4 Receiver .. | Mar. '54 |
| AT5—Re-built and Modified | Dec. '54 |
| BC348—Eliminating back lash .. | Jul. '48 |
| BC348—Double Conversion of BC348 (note erratum in July) .. | Jun. '53 |
| BC348—21 Mc. on BC348 Rx | May '54 |
| BC375E—Using BC375E Transmitter Coil Units | May '49 |
| BC457—BC696 and BC457 Tx (note erratum in Sept.) | May '48 |
| BC966A—Converting BC966A I.F.F. Unit | Mar. '50 |
| Built-in Clamp Tube Modulator for the Command Tx | Jan. '52 |
| Command Receiver, Notes on | Jan. '51 |
| Command Receiver Round-up | Feb. '55 |
| Command Rx—Double Conver. .. | Jun. '53 |
| Command Tx Conversions, Five Bands | Jan. '55 |
| FS6—Hints for FS6 Users | Oct. '48 |
| FS6—Modifying the FS6 Tx | Jan. '49 |
| Genemotors as AC Motors | Dec. '49 |
| LM Type—Resurrecting LM Type Bendix Freq. Meter .. | Nov. '48 |
| Magslips and Their Uses | Mar. '50 |
| MN26—Modification of MN26 Rx .. | Jul. '55 |
| Power Supply for Class C Wavemeter | Oct. '48 |
| RA10FA—Modifying Bendix RA10FA Rx | Jan. '54 |
| SCR211—Hints and Kinks—Re Power Supply for BC211 Freq. Meter | May '54 |
| SCR211—Modulating SCR211 Freq. Meter | Dec. '48 |
| SCR522—Conversion of SCR522 .. | Apr. '48 |
| SCR522—Dual Band Operation with SCR522 | Jan. '48 |
| SCR522—Hints and Kinks—Tuning SCR522 Rx without a Crystal | Apr. '55 |
| SCR522—Improved 144 Mc. Reception | Nov. '48 |
| TA12D—Converting TA12D for Amateur Use | Sep. '48 |
| Technical Tip (3-6 Mc. Command Rx) | Feb. '51 |
| Type 3 Mark II—Another Modification | Feb. '51 |
| Checking Crystal Freq. | Dec. '49 |
| Going Portable | Apr. '48 |
| Improving Stability | Jan. '49 |

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| Key Plug | Apr. '53 |
| Modifications | Dec. '47 |
| New Type Modulator | Aug. '54 |
| Series Screen Modulation | Mar. '49 |
| Using Type 19 Genemotor for 12 volt DC Operation | Dec. '50 |
| ZB2—Converting BZ2 Homing Adaptor for 50 or 144 Mc. | Dec. '50 |
| 100 Kc. Crystal from "Loran" Equipment | Dec. '48 |

MISCELLANEOUS

| | |
|---|----------|
| About Plug-in Coils | Dec. '51 |
| Amateur Radioteletype | Aug. '55 |
| Amateur Workshop | Dec. '45 |
| An Outline of Radar | Aug. '46 |
| Are You Complacent About TVI? | Oct. '55 |
| A Technical Tidbit | Aug. '48 |
| Baring Plastic Insulated Wire | Nov. '52 |
| Broadcast Interference from Amateur Stations | Jan. '47 |
| Calculating Distance of QSOs | Mar. '48 |
| Calculation of Inductance | Feb. '53 |
| Centimeter Wave Magnetrons | Mar. '46 |
| Cleaning Litz Wire | Apr. '51 |
| Clearing the Ether, Series II.— Part I.—Introduction | May '46 |
| Part II.—Advice to the New Amateur | Jun. '46 |
| Crystal Controls for V.h.f. Bands | Jun. '46 |
| Curing That Stubborn BCI | Jan. '49 |
| Cutting Polystyrene Rod | Apr. '51 |
| DX Book-keeping | Jul. '47 |
| Effects of Electricity on the Human Body | Sep. '52 |
| Facts About Nylex Power Flex Freq. Modulation Equipment— Part I. | Apr. '46 |
| Part II. | Jun. '46 |
| Freq. Modulation Fundamentals— Part I. | Nov. '47 |
| Part II. | Dec. '47 |
| Great Circle Nomogram | Jun. '54 |
| Handy Resistor Wattage Table | Dec. '48 |
| Hidden Tx Hunting | Mar. '53 |
| High Frequency RF Chokes | Nov. '49 |
| Hints and Kinks— Binding Magazines | May '54 |
| Cleaning and Keeping the Iron Clean | May '54 |
| Drilling Glass | May '54 |
| Fingernail Polish as a Con- structional Aid | Sep. '53 |
| Jeweller's Fretsaw | Dec. '53 |
| Operating A.C. Relays | Dec. '54 |
| Overtone Crystals | May '54 |
| Soldering Miniature Com- ponents | Jan. '54 |
| Stick Solder | May '54 |
| Suppression of Generator Whine | May '54 |
| Testing Condensers | Dec. '54 |
| Universal Crystal Holder | Jul. '49 |
| Valve Sockets for EF50s | Mar. '55 |
| 24 Volt Relays on 12 Volts | Apr. '55 |
| Histogram Recording Behaviour of Sporadic E | Nov. '47 |
| Ignition Noise Suppression | Apr. '50 |
| Ionospheric Predictions for the Amateur Bands (explanation) | Nov. '48 |
| Kilowatt for You, A | Jun. '48 |
| Low Voltage Soldering Irons | Feb. '47 |
| Machining Polystyrene | Nov. '46 |
| Odds and Ends | Nov. '52 |
| Parallel R and Series C on the Slide Rule | Dec. '45 |
| Plastics for the Amateur | Apr. '46 |
| Plated Crystals | Dec. '55 |
| Polythene | Jan. '48 |
| Present Phase of the Solar Cycle | Feb. '51 |

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| Propagation of Radio Waves— Part I. | Jul. '48 |
| Part II. | Dec. '48 |
| Push to Talk | Feb. '49 |
| Radio Control of Model Aircraft | Sep. '52 |
| Relay Operation | Feb. '55 |
| Rewinding D.C. Relays | Apr. '49 |
| Science in Antarctica | Dec. '55 |
| Short Circuits— Effective Key Click Filter | Jun. '48 |
| Plug-in Coils | Jul. '48 |
| Screen Grid Keying and Cheap R/T | Jul. '48 |
| Sporadic E Observations | Nov. '49 |
| Stand-off Insulators | Jan. '51 |
| Storing Spare Resistors and Condensers | Jan. '53 |
| Substitute for Capacity Type Lightning Arrestor | Mar. '50 |
| Sunspot Minium | Oct. '45 |
| Sunspots and DX | Aug. '52 |
| Telegraph Manipulating Key Design | Aug. '47 |
| The Story of the Decibel | Apr. '47 |
| The Why of Odd Values | Dec. '48 |
| Tranquil Break-in | Jun. '50 |
| Tx-Rx Voice Operated Control Unit | Oct. '55 |
| Useful Workshop Hints | Nov. '50 |
| Using VK3WI Standard Fre- quency Transmissions | Jan. '49 |
| Using Resistors as RF Loads | Feb. '52 |
| V.h.f. Wave Transmission | May '50 |
| VK3 Zone Boundaries | Jul. '47 |
| Voice-Controlled Tx and Rx Switching | Jul. '51 |
| What, No Beacons | Mar. '49 |
| Location of Radio Ranges | May '49 |
| Where is that Resistor? | Oct. '52 |
| Who will be on when TV and TVI are on? | Sep. '55 |
| Why 47? (reason for odd res- istor values) | Apr. '53 |
| Writing an Article for "A.R." | Feb. '55 |

POWER SUPPLIES

| | |
|---|----------|
| AC for the DC Ham | Feb. '49 |
| Cheap Rectifiers for Relay Op- erating Voltages | Dec. '49 |
| Hints and Kinks— Self-Powered Bias | Jul. '49 |
| Small Filament Transformers | Dec. '54 |
| How to use Dry Rectifiers | Jun. '52 |
| HV Power Supplies | Apr. '50 |
| More Effective Utilisation of Small Power Transformer | Jun. '53 |
| Novel Filament Circuit for DC Areas | Jan. '47 |
| Rectifiers— Part I.—High Vacuum | Mar. '46 |
| Part II.—Gas Filled | May '46 |
| Reducing Hum | Feb. '49 |
| Revamping Power Transformers | Dec. '48 |
| Series Connection of Trans- formers | Oct. '53 |
| So You Would Like AC | Jul. '50 |
| The Complete Amateur—Power Packs | May '54 |
| Theory and Practice—Voltage Regulation and Ripple Sup- pression | Dec. '45 |

RECEIVING

| | |
|---|----------|
| Audio Filter for CW | Aug. '50 |
| Band Spreading and all that! Battery Portable for 144 Mc. (Rx and Tx) | Oct. '55 |
| Countryman's Double Con- version Rx | Aug. '53 |
| Crystal Marker for Amateur Rx | Jan. '54 |
| Double Change Superhets | Nov. '52 |
| Double Conversion Rx | Apr. '51 |
| Double Conversion Superhet for 50 Mc. | Jun. '48 |
| | Nov. '51 |

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|---|----------|
| Effective Audio Filter Unit | Jan. '49 |
| Emergency Network W.I.A. Rx | Oct. '52 |
| "Fireside Five" Transceiver | Mar. '51 |
| Freq. Modulation—The Rx | Nov. '54 |
| From Junkbox to 168 Mc. | Jan. '47 |
| Getting the most out of your Rx Heterofil | Jun. '54 |
| ..... | Jul. '54 |
| Hints and Kinks— Neutralising 6J6s | Mar. '55 |
| Identifying and Tuning a SSSC Signal | Jun. '49 |
| I.F. Regeneration | May '46 |
| Low Noise RF Stage for 144 Mc. | Apr. '55 |
| Narrow Band FM Adaptor | Nov. '48 |
| Notes on Double Conversion Rx One-Tube Preamplifier—The "R-9'er" | Mar. '49 |
| ..... | Jul. '48 |
| Receiving SSSC | Jan. '51 |
| Reducing Noise in Double Con- version Rx's | Feb. '52 |
| Rx Base Mounting | Jul. '49 |
| Rx Design for 28 Mc. and above Rx Performance | Feb. '46 |
| ..... | May '55 |
| Selectivity | Nov. '46 |
| Selectivity and Double Crystal Filter— Part One | Apr. '54 |
| Part Two | May '54 |
| Selectivity and Phone Reception | Jul. '54 |
| Simple and Effective S Meter | Mar. '54 |
| Simple Ham Band Super | Feb. '51 |
| Simple Ham Rx | Nov. '46 |
| S Meter | Jan. '55 |
| S/N-6 Cascade 2 Metre Pre- Amplifier | Dec. '53 |
| Stabilising that IF Channel | Jul. '53 |
| "Terrific Two Watter" (inc. rx) The Complete Amateur— IF Channel (note errata in Oct.) | Jan. '47 |
| ..... | Sep. '54 |
| Rx | Aug. '54 |
| The Crystal Filter | Oct. '47 |
| The QX IF Amplifier | Mar. '52 |
| Triple Conversion Amateur Band Rx | Sep. '55 |
| Triple Conversion Rx | Dec. '49 |
| Tuning in SSSC | Aug. '50 |
| V.h.f. Automatic Tuner | Nov. '55 |
| V.h.f. Rx Design | Jun. '47 |
| Wide Range Crystal Filter for 455 Kc. | Oct. '47 |
| Zerro Beat Indicator | Feb. '51 |
| 2 Metres—Dry Batteries | May '50 |
| 80 Metre Station (includ. rx) | Mar. '50 |

Converters

| | |
|--|----------|
| Adjustment of V.h.f. Converter RF Stage | Jul. '51 |
| Bandswitching Converter for the V.h.f.s. | Mar. '48 |
| BC Converter for the SW Rx | Apr. '53 |
| Cascade Converter for 50 Mc. | Jul. '50 |
| Crystal Controlled Converter | Jun. '49 |
| Crystal Controlled Converter for 6 Metres | Nov. '49 |
| Crystal Converter for 50 and 144 Mc. | Nov. '52 |
| Push-Pull Cascade Crystal Converter | Aug. '51 |
| Simple Converter for 2 Metres | Jan. '54 |
| V.h.f. Converter Design | Aug. '53 |
| 2½ Metre Converter | Jan. '46 |
| 7 Mc. Mobile Converter | Sep. '55 |

RECORDING

| | |
|--|----------|
| Direct Disc Recording— Part I.—Introduction | Mar. '46 |
| Part II.—Turntable and Driving Gear | May '46 |
| Part III.—Traversing Mech- anism | Jul. '46 |
| Part IV.—Cutting Head | Dec. '46 |
| Part V.—Cutting Stylus | Mar. '47 |

PUSH-PULL POWER

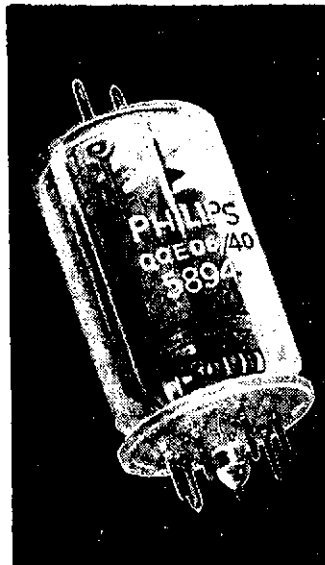
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MINIWATT TYPE 5894 (QQE06/40)

A twin tetrode for wide band operation
... widely accepted as standard for 420
Mc. service.

New ICAS Ratings up to 250 Mc. Now allowed 750-volt plate voltage for CW operation and 600-volt plate modulated. Designed for R.F. Amplifier, Modulator, Frequency Tripler use. Considerably reduced capacitances provide higher resonant frequencies. Single cathode and screen-grid construction result in low RF degeneration, therefore low drive required. Self neutralized over entire band. 4" high overall x 1 1/8" diameter.



| | CCS | ICAS |
|---------------|-----|-----------|
| 144 Mc. input | 120 | 150 watts |
| 220 Mc. input | 120 | 150 watts |
| 420 Mc. input | 100 | 120 watts |

can deliver!

MINIWATT TYPE 6252 (QQE03/20)

Lower Input and Output Capacitances than any other comparable twin tetrode.



A natural for 420 Mc. use! Has been successfully operated as a frequency multiplier in the UHF TV band. Particularly suitable for low-drain mobile transmitters and multiplier chains. Only 3" high, with the same mechanical and electrical features that have placed the PHILIPS 5894 in the forefront as standard equipment at 400 Mc. or higher.

| | CCS | ICAS |
|---------------|-----|-----------|
| 144 Mc. input | 90 | 112 watts |
| 220 Mc. input | 90 | 112 watts |
| 420 Mc. input | 75 | 90 watts |

A FULL RANGE OF TRANSMITTING TUBE MOUNTINGS AND ACCESSORIES ARE AVAILABLE

TEMPERATURE MEASUREMENT!

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|---|----------|
| Disc Recording from Wire or Tape Recordings | Jan. '52 |
| Magnetic Tape Recorders | Sep. '50 |
| Recording Tape— | |
| Part One | Feb. '54 |
| Part Two | Mar. '54 |

TELEVISION

| | |
|--|----------|
| Amateur Television | Sep. '47 |
| Amateur TV— | |
| Part One | Jul. '53 |
| Part Two | Aug. '53 |
| Part Three | Sep. '53 |
| Part Four | Nov. '53 |
| Part Five | Dec. '53 |
| Television Made Easy— | |
| Part 1—Introduction | Sep. '51 |
| Part 2—How the Camera Works | Oct. '51 |
| Part 3—What's in a TV Sig. | Nov. '51 |
| Part 4—What's in a TV Rx | Dec. '51 |
| Part 5—Further Notes on Rx | Jan. '52 |
| Part 6—How Rx is Synchron. | Feb. '52 |
| Part 7—Carrier Diff. System | Mar. '52 |
| Part 8—Interference and how the Ham can check it | May '52 |
| Part 8 Continued | Jun. '52 |
| Part 9—Outline of Color TV | Jul. '52 |
| Questions and Answers | Aug. '52 |
| Questions and Answers | Sep. '52 |

TEST EQUIPMENT

| | |
|--|----------|
| Accurate Electronic Timer | Jul. '55 |
| Accurate and Cheap Wavemeter A Rx, A Trapezoidal Pattern; so what? | Nov. '48 |
| Build Yourself a Bridge (note erratum in Dec.) | Oct. '48 |
| Care of Indicating Meters | Nov. '48 |
| Cathode Ray Mod. Checker | Sep. '47 |
| Characteristics of Indicating Meters | Mar. '47 |
| Circuit to Measure Capacity and Inductance | Sep. '55 |
| Combination Instrument—Vacuum Voltmeter, Ohmmeter, Megger, Capacity Tester | Sep. '50 |
| Crystal Controlled Service Oscillator | Oct. '45 |
| Cw-Phone Monitor | Apr. '53 |
| De Luxe VTVM— | Jul. '50 |
| Part One | Jan. '50 |
| Part Two | Feb. '50 |
| Further Notes | Mar. '50 |
| Freq. Meter for Audio Range | May '54 |
| Germanium Crystals— | |
| Two Suggestions for use | Jul. '49 |
| Suggestions for use | Mar. '49 |
| High Stability Freq. Meter | May '49 |
| Hints and Kinks— | |
| Capacity Check | May '54 |
| Increasing Sensitivity of Grid Dip Meter | May '54 |
| Paste-board Template | Sep. '53 |
| How Much C (measur. capacity) | Nov. '53 |
| How's My Modulation OM? | Aug. '51 |
| Inexpensive Modula. Indicator | Sep. '51 |
| Let's Listen (cw-phone monitor) | Apr. '50 |
| Practical VTVM | Feb. '50 |
| Silicon Crystal Noise Generator | Aug. '55 |
| Simple Frequency Divider | Apr. '55 |
| Simple Freq. Meter for Amateur Bands | Jun. '49 |
| Simple Modulation Monitor (see erratum in May) | Jun. '51 |
| Standing Wave Indicator | Apr. '51 |
| The Complete Amateur— | Nov. '53 |
| Audio Oscillator | Nov. '54 |
| Frequency Meter | Oct. '54 |
| Monitoring Your Outfit | Dec. '54 |
| The Match Maker (for checking quarter wave lines) | Jul. '51 |

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|--------------------------------|----------|
| "The Quizmaster" (grid dipper) | Dec. '50 |
| Use for Small Rectifiers | Jun. '49 |
| Versatile Measuring Instrument | Jul. '49 |
| What is its Inductance? | May '51 |
| Wide Range Signal Generator | Nov. '49 |
| Wobblers—Sweep Generator | Mar. '55 |
| 144 Mc. Heterodyne Freq. Meter | Feb. '55 |

TRADE REVIEWS

| | |
|--|----------|
| "Commander" Double Conversion Receiver | May '50 |
| Eddystone Vibrator for "640" | Dec. '49 |
| Eddystone 669 "S" Meter | Dec. '49 |
| Eddystone "696" Absorption Wavemeter | Dec. '51 |
| Eddystone "700" Receiver | Feb. '54 |
| Eddystone "750" Com. Receiver | Oct. '50 |
| Geloso Pi-Coupler Tank Coil | Oct. '55 |
| Geloso Signal Shifter | Jun. '54 |
| Philips IFT's | Mar. '55 |
| Six-Second Low Voltage Soldering Iron | Nov. '49 |

TRANSMITTING

| | |
|--|----------|
| All-band Tank Circuit | Aug. '52 |
| Anti TVI Filters for the Amateur Tx | Nov. '55 |
| Battery Portable for 144 Mc. | Aug. '53 |
| Clearing the Ether, Series II.— | |
| Part III.—Construction and Operation of Tx | Jul. '46 |
| Part IV.—Tx | Aug. '46 |
| Part V.—Tx | Sep. '46 |
| Part VI.—Tx | Oct. '46 |
| Part VII.—Tx | Dec. '46 |
| Part VIII.—Tx | Feb. '47 |
| Crystal Cont. Tx for 144 Mc. | Apr. '49 |
| Crystal Filter SSSC | Jun. '50 |
| Design Data for Bandswitched Exciters | Jul. '53 |
| Designing a V.h.f. Tx | Nov. '48 |
| Economical Design for a Simple Stand-by | Sep. '52 |
| Electronic Keyer (see erratum in Feb., '55) | Dec. '54 |
| Emergency-Portable Rig | Apr. '51 |
| Emerg. Network of W.I.A. Tx | Oct. '52 |
| Extracting the Watts | Oct. '50 |
| Filter Type SSSC Tx | Aug. '49 |
| "Fireside Five Transceiver | Mar. '51 |
| Flextal Conversion Exciter Unit | Mar. '48 |
| Freq. Modulation—The Tx | Oct. '54 |
| Grid Drive | Mar. '48 |
| Low Power 2 Metre C.C. Tx | May '52 |
| Metering Tx's | Apr. '51 |
| MOPA for 166 Mc. Band | Apr. '48 |
| Morse Keys—Making of same | Oct. '45 |
| Multiband Tuning Unit (note erratum in Nov.) | Oct. '53 |
| NBFM Exciter | Apr. '50 |
| NBFM Phase Modulator Exciter for 80, 40 and 20 | Dec. '51 |
| Neutralising an RF Amp. with a Grid Dip Meter | Mar. '53 |
| Neutralising that Tetrode PA | Dec. '48 |
| Overtone Oscillator Circuit | Nov. '54 |
| Painless Extraction of Harmonics | Nov. '50 |
| Phase Modulated NBFM Exciter | Feb. '48 |
| Phasing System of SSSC | Sep. '49 |
| Phasing Type SSSC Exciter— | |
| Part One | Dec. '52 |
| Part Two | Jan. '53 |
| Part Three | Feb. '53 |
| Simple Circuit for 166-170 Mc. | Sep. '46 |
| Simple Tx for 50 Mc. | May '51 |
| Simple 12 Watt 144 Mc. Tx | Mar. '52 |
| Simple 80 Metre Station | Mar. '50 |
| Simple 80 Metre Tx | Nov. '52 |
| "Simplicity in Fours" | Mar. '51 |

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|--|----------|
| Simplified Design of Tank Circuit for RF Amplifiers— | |
| Part I. | Sep. '46 |
| Part II. | Oct. '46 |
| SSSC | Jul. '49 |
| "Sure-fire" Crystal Osc.—Mult. | Aug. '54 |
| Tank Circuit Qs | Mar. '53 |
| The Complete Amateur— | |
| Crystal Osc. and Multipliers | Mar. '54 |
| Final Tank Circuit | Apr. '54 |
| Function and Master Switch | |
| Panel, Rack Details | Jul. '54 |
| "Terrific Two Watter" | Jan. '47 |
| Tx Control | Sep. '54 |
| Tx Design and Construction | Feb. '48 |
| Tx with AC/DC Power Supply | Jul. '54 |
| Tx with Low Harmonic Output | |
| Part One | Oct. '55 |
| Part Two | Nov. '55 |
| Part Three | Dec. '55 |
| V.h.f. Portable Tx | Dec. '46 |
| 100 Watt 144 Mc. Tx using Linear Tank Circuit | Sep. '50 |
| 2 Metres—Dry Batteries | May '50 |
| 3-Band 2-Stage Tx | Jul. '53 |
| 576 Megacycles | Jan. '49 |
| 807s as Float. Screen RF Amp. | Oct. '51 |

VALVES

| | |
|---|----------|
| Army VT Numbers and Commercial Numbers | Aug. '51 |
| CW Ratings of Some Receiving Type Tubes | May '49 |
| CW Ratings of Some Receiving Type Tubes | Nov. '52 |
| Kinks for 807 Users (note erratum in Sept.) | Aug. '46 |
| Optimum Operating Conditions for 807 Valves (audio) | Jul. '47 |
| Problems with 807s and 813s | May '51 |
| Radio Valve Practice | Jul. '49 |
| R.M.A. Type Designation System | Oct. '46 |
| Selection of Valves for use as Cathode Followers | Sep. '47 |
| Short Circuits, Repairing Loose Grid Cap | Jul. '48 |
| Taming an 807 | Mar. '47 |
| Tube Type Designation Systems | Aug. '54 |
| Use of Electronic Valves | Nov. '55 |
| Using Tubes Above Their Self-Resonant Frequency | Jan. '51 |
| 2C40—Lighthouse triode; up to 2700 Mc. | Nov. '45 |
| 2C40—Lighthouse triode | Oct. '46 |
| 2C43—Lighthouse triode | Oct. '46 |
| 2E25—Tetrode | Mar. '46 |
| 2E26—V.h.f. beam power amp. | Oct. '46 |
| 2E30—Beam tetrode | Jul. '46 |
| 3X100A11/2C39—Lighthouse triode; up to 2500 Mc. | May '46 |
| 4-250A—Tetrode | Nov. '45 |
| 559—Diode, for operation in half wave rectification | Oct. '46 |
| 6AE8—Converter | Oct. '52 |
| 6AJ5—Pentode; v.h.f. | Nov. '45 |
| 6AU6—Pentode | May '47 |
| 6BA6—Pentode | Nov. '47 |
| 6BE8—Converter | Nov. '47 |
| 6BV7—Double diode power output pentode | Sep. '52 |
| 6N4—Triode; up to 500 Mc. | Nov. '45 |
| 6146—Beam Power Amplifier | Aug. '55 |
| 7193 (2C22)—V.h.f. triode | Jul. '46 |
| 822-S—Triode | Nov. '45 |
| AV11—Rectifier | Jul. '46 |
| CV6/E1148—V.h.f. triode, up to 224 Mc. (note erratum in base connections in Dec.) | Nov. '46 |
| EF50—Pentode | Jan. '46 |
| EF50—Pentode | Nov. '46 |
| GL3C22—Triode; up to 600 Mc. | Nov. '45 |

(Continued on Page 10)

Low Drift Crystals

FOR AMATEUR BANDS

ACCURACY 0.02% OF STATED FREQUENCY

3.5 Mc. and 7 Mc.

Unmounted £2 0 0
Mounted £2 10 0

12.5 and 14 Mc. Fundamental Crystals, "Low Drift," Mounted only, £5.

THESE PRICES DO NOT INCLUDE SALES TAX.

Spot Frequency Crystals Prices on Application.

Regrinds £1 0 0

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PAN PACIFIC SCOUT JAMBOREE, 1955-56

At the request of the Organising Committee, the Federal Executive of the Wireless Institute of Australia will install and operate transmitting and receiving equipment at the Pan Pacific Scout Jamboree, to be held from the 28th December, 1955, to 9th January, 1956, at "Clifford Park," Victoria.

"Clifford Park," a delightful stretch of country in the hills about 25 miles east of the city of Melbourne, has already been inspected by Federal Executive in order to locate the best position for the "Shack" and aerial systems.

The official Federal Station of the Wireless Institute of Australia, VK3WIA, will be on the air daily and nightly during the period of the Jamboree on the 14 Mc. band for International working, and the 7 Mc. and 3.5 Mc. bands for local and National contacts.

Directional Vee Beams on the highest hill in the camp area will span the globe in all directions; the choice of direction being chosen at the transmitter location further down the hill, at a point where Scouts from all parts of the Commonwealth and from twenty-one other Countries, together with the visiting public, will be able to make periodic visits to the "W.I.A. Ham Shack on the Hill." Fifteen thousand Scouts will be camped in the area for the Jamboree!

Approximately seven miles of roadway cover the camp area, which is broken into three main areas—Headquarters Area controlling the water supply, electric light system and the general administration of the Jamboree; one camp site catering for 10,000 Scouts; and a second smaller site catering for 5,000 Scouts.

A Special Pan Pacific Scout Jamboree, 1955-56, Call Sign Card in colour is being printed and will be forwarded to all those confirming a contact with VK3WIA at the Camp Area, and all VK Amateurs are asked to try to make an effort to be on the air during these twelve days and to publicise the fact abroad during DX Contacts that the Federal Station will be on the 14 Mc. band looking for overseas contacts. To assist in this, the Jamboree Organising Committee is advising Scout Organisations all over the world that VK3WIA will be on the air from the Camp Site and many Scouts will have the opportunity to say "Hello" to Listeners. A special team of c.w. operators will be

rostered to maintain schedules with overseas countries when conditions do not hold good for phone contacts.

VK3WIA will be staffed and operated by Members of the Federal Executive and the Victorian Division, some of whom will be rostered to sleep at the site to guard the equipment and indirectly afford early and late contacts for those who might not be available during normal daylight hours. The installation of the equipment will be in the hands of three main working bodies: Aerial Systems, Audio Equipment and Receivers, and Transmitting Equipment.

With the co-operation of the Jamboree Organising Committee, the Members of the W.I.A. and all the others who have undertaken to prepare the operating site, supply electric light, erect aerial poles, etc., the success of this enterprise will be assured.

VK3WIA will be looking out for you.
73, D. Bowie, Federal Secretary.

HANDY INDEX

(Continued from Page 9)

| | |
|---|----------|
| HD59—Miniature Tetrode | Mar. '46 |
| OA2—Regulator | Nov. '45 |
| QQE06/40—Double tetrode | Feb. '52 |
| RL7/VR136/CV1136—Pentode, up to 250 Mc. | Nov. '46 |
| RL16/EC52—V.h.f. triode; up to 400 Mc. | Nov. '46 |
| RL18—V.h.f. triode; up to 600 Mc. | Nov. '46 |
| RL37/CV66—Grounded grid triode, up to 250 Mc. | Nov. '46 |
| VCR139A—Cathode ray tube | Nov. '46 |

VFO's

| | |
|--|----------|
| Cathode Coupled Oscillator | Jun. '48 |
| High Stability VFO | Apr. '49 |
| Keyed VFO (note erratum in Dec.) | Nov. '48 |
| Series Tuned ECO | Sep. '49 |
| Series Tuned ECO (Steco) | Apr. '50 |
| Simple VFO with Temperature Compensation | Dec. '52 |
| Single Tube VFO | Oct. '51 |
| Stable VFO 144 Mc. Operation | Dec. '54 |
| The Complete Amateur—VFO | Feb. '54 |
| Utilising FS6 Tunit Unit as a VFO | May '50 |
| Variable Freq. Crystal Control | Dec. '48 |
| Variable Frequency Oscillator | Aug. '47 |
| VFO at VK3WI | Sep. '53 |
| VFO Using Surplus CRV52233 Coil Unit | Nov. '49 |

Merry Christmas and A Happy New Year

CARRY THE "HAM" SPIRIT WHEREVER YOU GO AND SPARE A THOUGHT FOR YOUR LESS FORTUNATE BROTHER.

GLORAD ENGINEERING SERVICES

291a TOORONGA ROAD, MALVERN, S.E.6, VIC. Phone: BY 3774



A Transmitter With Low Harmonic Output

PART THREE

BY HANS RUCKERT,* VK2AOU

SPEECH AMPLIFIER AND MODULATOR

Figure 4: To get effective modulation it would be absolutely wrong to use high fidelity methods or components. We know that our DX partner will have to use not much more than 5 to 6 Kc. i.f. bandwidth in his receiver to pull us through the QRM or noise. Therefore we have to change the sound character of our voice.

If we use an upper modulation frequency of 3 to 3.5 Kc. we have to suppress frequencies below 300 c.p.s. as well to bring the audio spectrum to a balance and achieve high intelligibility. So use small coupling capacitors at the pre-amplifier. An a.f. low-pass filter is in any case recommended, whether we use a clipper or not, mainly to limit our modulation band and to give other Amateurs a chance to find a clear channel. The same method helps to concentrate our transmitter energy on the frequency range our partner will receive. That is why s.s.b. is even more efficient.

The crystal mike (any quality will be good enough for 300 to 3,000 c.p.s.) is followed by a high gain a.f. stage. A twin triode (6SN7 or similar) can be switched in as a clipper. The clipping level can be adjusted with the first volume control and 10 to 15 db. is usually used without distorting the modulation or changing the voice too much. In this case we are not at all interested whether or not the voice coming from this transmitter sounds like that of the operator. All we want is a much higher sound density of the speech than the natural voice has.

This way of lifting up the low sounds to 100% modulation must cause distortion of the already strong sounds which are clipped. The frequencies generated by this method again change the voice to some degree. Harmonics of the speech frequencies which would cause splatter, a wide unused transmitted band of frequencies, interference to other stations, and scattering of transmitted power are filtered out by a low-pass filter.

Formerly, complicated filters have been popular, but many designers found that they can introduce phase differences and distortion. Two sections are sufficient to reduce the modulation to 10% at 4 Kc. The clipper stage has no gain so this is a convenient place for a switch to by-pass the clipper and filter.

Using low a.f. gain in front of the clipper and high gain after the filter makes it possible not to clip, but still to use the low-pass a.f. filter. After a further high gain a.f. stage, there is a second volume control to set the modulation to a maximum of 95%, so preventing splatter when the clipper is used. It can be regarded as a matter of courtesy to use a clipper filter.

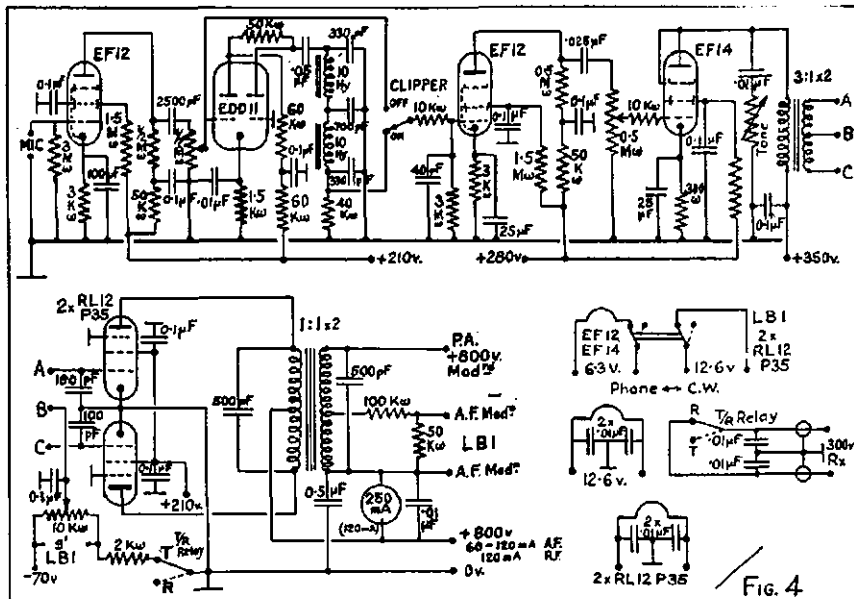
The driver stage is again the universal Telefunken pentode EF14 with plate and suppressor grid connected to get low impedance. A 6V6 as triode

would be suitable as well. The driver transformer was a mains transformer with the 300v. winding now on the primary side and the 2 x 110v. primary now used as secondary. Two Telefunken pentodes, RL12P35 (identical to the 807, 30 watts plate dissipation) operate as class AB2 final modulator valves. When receiving, the grids of these valves get -70v. bias like the scope LB1 to prevent the sound of the

receiver loudspeaker feeding the mike and the modulator plus, finally, the p.a. stage.

The modulation transformer is a 110v. mains transformer. After some calculations it was found that Amateur modulation transformers can be calculated like 50 c.p.s. mains transformers if we multiply the primary impedance by about 2.5 for class AB2 ampli-

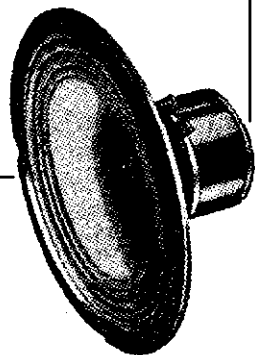
(Continued on Page 24)



In the EF14 stage the screen dropping resistor is 50,000 ohms, and the tone control is 100,000 ohms.

TUNE INTO HIGH FIDELITY!

MULLARD 5-10 HIGH QUALITY LOW-COST AMPLIFIER



SEND for the Mullard Book (4/3 posted). Contains amplifier circuits, equalisation networks, drawings of standing horn speaker enclosures.

SEND for quotation on the Mullard Amplifier with A. & R. output transformer.

SEND for description leaflets on the British Gramplan Mullard Amplifier.

GOODMANS AXIETTE 101 LOUDSPEAKERS
GOODMANS AUDIOM 50 LOUDSPEAKERS
ARE IDEAL FOR THE MULLARD AMPLIFIER

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Telephone: BL 3954

South Australia Wins Again

Apparently following suit from the previous winners, VK7 and VK6, who both won it twice in succession, S.A. has retained the honour for 1955. This was due to the magnificent score of VK5MS who ran even with VK3ATN at 1001 points, and the other five members who raised the average to 746. Logs entered increased by 21 to 87 and a clear lead was established over Western Australia.

This year a total of 431 logs was submitted; as from checking, 193 logs were not sent in and this can be contrasted with an Amateur population of 3,139. All territories except Antarctica participated and an award has been made for the first time in the Northern Territory to VK5TL. VK9 Division was well represented.

As the logs received showed that VK5 was well ahead, these logs were checked first; when checking was complete the amended scores still gave VK5 an unbeatable lead, so the other States were checked only to determine the award winners. These totalled 33. As these scores were very high in some cases and in one or two instances were very close, complete checking had to be undertaken. Much midnight oil was burnt and cups of tea drunk by 5CA, 5DO, 5FO, 5JD, 5KQ, 5OR, 5PM, 5QR, 5RR, 5XU and Norm Coltman.

Logs disallowed were few; principally by Rule 11, 16 logs; Rule 19, 2 logs, and a log submitted by a holder of the L.A.O.C.P. who operated on the h.f. bands using the station of a licensed Amateur submitting a log under his own Z call. As a test case, logs from two contestants in one State showed a contact with each other on the 144 Mc. band with a claim for a bonus of 25 points. This claim was disallowed on the basis that the rules stipulated that the Contest is for Interstate contacts—Rule 4.

Again the contestants did their best to make log-checking easy and the majority used the standard log sheets. One submitted contacts under the bands worked and gave a clear picture of the bands open at any time—3.5 Mc. to 21 Mc. Again, country members were well represented in the top six logs and it should be very gratifying to the Councils of the Division to record that fact.

The Committee desires me to record its appreciation of the efforts of the members of the VK5 Division who freely gave of their time in the same spirit that the Contest was played; also to those who gave their homes and hospitality to the stalwarts doing the checking, the indispensable XYLS and mothers; to Brian 5CA, for his able work as Secretary of the Division, and Jim 5FO, the unofficial manager of the team.

This Contest gains in strength and interest every year and I have to thank you for the spirit with which you have imbued it; that selflessness for which we honour those who died, that we might live to pursue our grand hobby.

*"By your acts of grace
So shall they live."*

G. M. BOWEN, Chairman Contest Com.

POINTS CLAIMED AND ALLOWED

| State | Claimed | Allowed |
|-------|---------|---------|
| VK2 | 4119 | 4057 |
| VK3 | 3915 | 3796 |
| VK4 | 2957 | 2857 |
| VK5 | 4638 | 4479 |
| VK6 | 4001 | 3920 |
| VK7 | 2892 | 2824 |
| VK9 | 1882 | 1805 |

STATE SCORES

| South Australia | | Average | Licensees | Logs | Total Points |
|-------------------|------|---------|-----------|------|--------------|
| VK5MS | 1001 | 746.50 | 370 | 87 | 922.03 |
| 5EN | 854 | | | | |
| 5RG | 806 | | | | |
| 5WO | 716 | | | | |
| 5JN | 576 | | | | |
| 5GW | 526 | | | | |
| Western Australia | | Average | Licensees | Logs | Total Points |
| VK6RU | 794 | 654.00 | 189 | 68 | 889.30 |
| 6HK | 762 | | | | |
| 6GU | 723 | | | | |
| 6FD | 625 | | | | |
| 6KJ | 519 | | | | |
| 6DX | 501 | | | | |

New South Wales

| New South Wales | | Average | Licensees | Logs | Total Points |
|-----------------|-----|---------|-----------|------|--------------|
| VK2AHH | 791 | 676.17 | 1074 | 69 | 719.61 |
| 2AKV | 738 | | | | |
| 2JU | 716 | | | | |
| 2AMR | 709 | | | | |
| 2GW | 597 | | | | |
| 2SR | 506 | | | | |

Victoria

| Victoria | | Average | Licensees | Logs | Total Points |
|----------|------|---------|-----------|------|--------------|
| VK3ATN | 1001 | 632.67 | 1008 | 81 | 683.56 |
| 3VF | 611 | | | | |
| 3ADW | 609 | | | | |
| 3ATR | 590 | | | | |
| 3HG | 573 | | | | |
| 3BB | 412 | | | | |

Tasmania

| Tasmania | | Average | Licensees | Logs | Total Points |
|----------|-----|---------|-----------|------|--------------|
| VK7PM | 607 | 473.50 | 126 | 52 | 668.91 |
| 7AI | 528 | | | | |
| 7WN | 505 | | | | |
| 7YY | 451 | | | | |
| 7UW | 375 | | | | |
| 7JP | 375 | | | | |

Queensland

| Queensland | | Average | Licensees | Logs | Total Points |
|------------|-----|---------|-----------|------|--------------|
| VK4PQ | 861 | 482.00 | 321 | 46 | 551.07 |
| 4CC | 652 | | | | |
| 4OV | 523 | | | | |
| 4TN | 315 | | | | |
| 4HH | 296 | | | | |
| 4RH | 245 | | | | |

New Guinea

| New Guinea | | Average | Licensees | Logs | Total Points |
|------------|-----|---------|-----------|------|--------------|
| VK9DB | 520 | 300.83 | 43 | 13 | 391.78 |
| 9FN | 465 | | | | |
| 9AU | 275 | | | | |
| 9HO | 200 | | | | |
| 9BW | 175 | | | | |
| 9WK | 170 | | | | |

AWARDS

Open

| | | | |
|--------------|------|-----------------------|-----|
| VK1ZM | 774 | VK5TL* | 89 |
| 2AHH | 791 | 6RU | 794 |
| 3ATN | 1001 | 7YY | 451 |
| 4CC | 652 | 9DB | 520 |
| 5RG | 806 | * Northern Territory. | |
| Phone | | | |
| VK2AKV | 738 | VK6KJ | 519 |
| 3ATR | 590 | 7PM | 607 |
| 4PQ | 861 | 9FN | 465 |
| 5MS | 1001 | | |

C.W.

| | | | |
|-------|-----|-------|-----|
| VK2QL | 412 | VK6GA | 281 |
| 3XB | 367 | 7CH | 339 |
| 4HH | 296 | 9OQ | 119 |
| 5MD | 207 | | |

Listeners

| | | |
|----------------|-----|-------------------|
| N. G. Clarke | 629 | Points for each |
| J. A. Campbell | 312 | contact recorded. |
| F. H. Price | 553 | |

OTHER LOGS

| NEW SOUTH WALES | | | |
|-----------------|-----|-------|-----|
| VK2AGH | 460 | VK2ZY | 154 |
| 2PN | 362 | 2AHI | 148 |
| 2AHM | 345 | 2LG | 138 |
| 2AYS | 342 | 2ZF | 134 |
| 2ARV | 336 | 2YC | 132 |
| 2CS | 333 | 2ABO | 125 |
| 2VW | 314 | 2BO | 125 |
| 2AWN | 298 | 2ADE | 120 |
| 2EL | 296 | 2XT | 116 |
| 2AHP | 265 | 2DK | 106 |
| 2AMB | 265 | 2AVI | 101 |
| 2AOU | 247 | 2YB | 89 |
| 2AZN | 228 | 2ADT | 87 |
| 2ABE | 226 | 2AHL | 86 |
| 2OH | 213 | 2PV | 86 |
| 2GT | 213 | 2JY | 84 |
| 2AAJ | 184 | 2AJO | 82 |
| 2GI | 180 | 2AVG | 81 |
| 2AFA | 170 | 2XZ | 80 |
| 2YL | 167 | 2RF | 80 |
| 2AJQ | 157 | | |

| VICTORIA | | | |
|----------|-----|--------|-----|
| VK3ALP | 405 | VK3AML | 125 |
| 3ALQ | 359 | 3ARV | 123 |
| 3OM | 322 | 3JE | 118 |
| 3ASB | 320 | 3ND | 112 |
| 3QK | 305 | 3AXW | 112 |
| 3APS | 278 | 3ATK | 107 |
| 3HE | 248 | 3XH | 105 |
| 3EL | 247 | 3JA | 104 |
| 3KR | 245 | 3YQ | 104 |
| 3AJK | 240 | 3LV | 102 |
| 3ABH | 238 | 3ADU | 92 |
| 3LA | 215 | 3AAP | 90 |
| 3TG | 193 | 3KU | 87 |
| 3ADL | 193 | 3ALE | 79 |
| 3ZA | 182 | 3ACN | 72 |
| 3AUG | 176 | 3WQ | 67 |
| 3AFJ | 168 | 3II | 62 |
| 3DU | 155 | 3FO | 60 |
| 3ZV | 149 | 3AHR | 58 |
| 3ANO | 146 | 3AWS | 56 |
| 3NN | 140 | 3IB | 56 |
| 3PR | 133 | 3YH | 51 |
| 3AFF | 133 | 3AKW | 47 |
| 3AJP | 132 | 3RJ | 43 |
| 3LR | 131 | | |

| QUEENSLAND | | | |
|------------|-----|-------|----|
| VK4JF | 241 | VK4ZP | 80 |
| 4FC | 181 | 4HD | 79 |
| 4JE | 160 | 4CK | 66 |
| 4JD | 157 | 4JR | 57 |
| 4CY | 144 | 4OB | 41 |
| 4NG | 131 | 4VS | 39 |
| 4OX | 119 | 4ZZ | 38 |
| 4SF | 114 | 4KK | 38 |
| 4XP | 111 | 4RJ | 38 |
| 4MA | 102 | 4HZ | 34 |
| 4GG | 99 | 4BW | 32 |
| 4SE | 90 | 4EC | 29 |
| 4HN | 82 | 4RL | 29 |
| | | 4AQ | 27 |

| SOUTH AUSTRALIA | | | |
|-----------------|-----|-------|-----|
| VK5AP | 505 | VK5BO | 102 |
| 5FF | 437 | 5KU | 91 |
| 5FT | 413 | 5KY | 88 |
| 5H | 381 | 5FQ | 88 |
| 5FM | 375 | 5OR | 87 |
| 5LD | 361 | 5EF | 79 |
| 5JT | 327 | 5FJ | 73 |
| 5FY | 289 | 5ZY | 71 |
| 5WC | 283 | 5PU | 67 |
| 5AV | 261 | 5JO | 66 |
| 5LQ | 253 | 5CH | 64 |
| 5OK | 221 | 5CJ | 64 |
| 5ZB | 201 | 5LE | 63 |
| 5BG | 201 | 5RI | 58 |
| 5MZ | 183 | 5RX | 57 |
| 5EQ | 178 | 5DK | 56 |
| 5PM | 170 | 5QR | 54 |
| 5KN | 162 | 5BY | 53 |
| 5ON | 136 | 5JC | 52 |
| 5JJ | 135 | 5FD | 52 |
| 5TJ | 132 | 5CO | 44 |
| 5BZ | 131 | 5FO | 42 |
| 5AX | 130 | 5CA | 41 |
| 5CE | 125 | 5HM | 40 |
| 5BH | 122 | 5JG | 40 |
| 5LB | 106 | 5UF | 39 |
| | | 5RK | 38 |

(Continued on Page 14)



I heard the bells on Christmas Day,
Their old familiar carols play,
And wild and sweet
The words repeat,
Of peace on earth,
Goodwill to men.

Longfellow

*A Merry Christmas and
A Happy and Prosperous
New Year*

from

AMALGAMATED WIRELESS VALVE COMPANY PTY. LTD.



NATIONAL FIELD DAY, 1956

CONTEST RESULTS

(Continued from Page 12)

RULES

1. The National Field Day Contest of the Wireless Institute of Australia will be held on **Sunday, 12th February, 1956**, and will be of 12 hours' duration, commencing at 0900 hours E.A.S.T. and will continue until 2100 hours E.A.S.T.

2. The Contest is limited to Portable Stations operating within the Commonwealth and its Mandated Territories on a power not exceeding 25 watts input to the final stage with the aerial connected, with a special section for fixed stations working to portable stations.

3. A portable station for the purpose of the Contest is defined as one whose power is not derived from either private or public mains, shall not be located closer than five miles airline from the home of the operator(s) and shall not be situated in any occupied dwelling or building.

4. No apparatus is to be set up or erected on the site of the portable station earlier than 24 hours prior to the commencement of the Contest. A station may be moved from one site within a State to another within the same State during the Contest.

5. More than one operator may be used in the operation of the portable station, provided that all operators are licensed Amateurs.

6. Operation may be on any of the recognised Amateur bands and more than one transmitter may be used, providing that only one transmitter is used at any one time.

7. When calling, c.w. stations will use the call "CQ NFD" and phone stations will use the call "CQ National Field Day" to indicate that they are portable stations. Attention is directed to the requirements for portable operation as defined in the P.M.G. Handbook for the Guidance of Amateur Operators.

8. Sections: The Contest is divided into four sections, namely,

- (a) Open
- (b) C.W.
- (c) Phone
- (d) Fixed stations.

The open section will consist of phone and c.w. Portable station participants may enter each of sections (a), (b), and (c), provided a separate log is entered in each case.

9. Logs must be forwarded to the Contest Committee, through the **Divisional Council** for membership checking in time to reach Box 1234K, G.P.O., Adelaide, not later than Saturday, 25th February, 1956.

10. Logs must be filled in in the following order: Date, Time (E.A.S.T.), Band, Emission, Power Input to the final stage with the aerial connected, Call Sign of Station Contacted, RST number sent, RST number received, location of station contacted, points claimed. The log must be headed with the title of the Contest, section entered, call sign of the competitor, location of the station. At the conclusion of the log a summary of the contacts must be shown, together

with a description of the equipment used including h.t. voltage to the final stage, tube(s) in p.a. stage, antenna used, and call signs of all operators.

11. The completed log must be signed by each of the operators with a statement that the P.M.G. regulations and the rules of the Contest have been observed.

12. The decisions of the Federal Contest Committee will be final in all matters concerning the Contest.

13. Failure to completely observe the conditions of Rule 10 will lead to automatic disqualification of a competitor.

14. Scoring: For the purpose of the Field Day the following constitute VK districts: VK2, VK3, VK4, VK5 (South Australia), VK5 (Northern Territory), VK6, VK7, VK9.

15. Serial numbers must be exchanged during the Contest. Failure to record current serial numbers will mean loss of all points for that contact. Serial numbers will be as follows: The first three figures will be the RST report in the c.w. section, followed by the serial number of the contact. Serial numbers may commence with any number between 001 and 100 for the first contact, increasing by one for each successive contact. In the phone section, the first two figures will be the RS report as in the c.w. section, followed by the three serial numbers. In addition the QTH must be given in all cases.

16. Points will be awarded as follows:

Portable Stations—

- (a) For contacts with a fixed station within the Commonwealth (Rule 14) including the competitor's own State **1 point.**
- (b) For contacts with other portable stations within the same State **2 points.**
- (c) For contacts with stations in Asia, Oceania, North America, **3 points.**
- (d) For contacts with stations in other countries other than (a), (b), and (c) **5 points.**
- (e) For contacts with other portable stations outside the competitor's own State **10 points.**

Fixed Stations—

- (f) For contacts with portable stations in the Contest within the same State **2 points.**
- (g) For contacts with portable stations in the Contest outside the State **5 points.**

17. Awards: An attractive certificate will be forwarded to the outright winners in each section, namely, Open, Phone, and C.W. Certificates will also be awarded to the winners of each section in each State and to the Fixed Station in each State with the greatest number of points gained in contacting portable stations in the Contest. Further certificates may be awarded at the discretion of the Federal Contest Committee. The outright winners are not eligible for State awards.

18. Certificates will be awarded to each operator of the winning stations provided each operator has contacted at least 25% of the stations contacted.

| WESTERN AUSTRALIA | | | | | |
|-------------------|-----|-------|----|-------|----|
| VK6NF | 353 | VK6WG | 31 | VK6UF | 19 |
| 6EJ | 345 | 6XG | 31 | 6LM | 19 |
| 6MG | 247 | 6WS | 30 | 6LJ | 18 |
| 6GY | 184 | 6ZI | 30 | 6JK | 18 |
| 6TK | 181 | 6EC | 29 | 6RS | 18 |
| 6VK | 107 | 6BO | 28 | 6TB | 17 |
| 6KO | 105 | 6TR | 27 | 6EH | 16 |
| 6BE | 103 | 6WT | 27 | 6HC | 16 |
| 6EZ | 89 | 6SR | 26 | 6JS | 16 |
| 6JG | 87 | 6WR | 26 | 6AW | 15 |
| 6LU | 87 | 6BS | 26 | 6TX | 15 |
| 6RW | 84 | 6MB | 26 | 6GM | 15 |
| 6FL | 82 | 6WH | 25 | 6OR | 15 |
| 6CP | 68 | 6WW | 24 | 6KW | 14 |
| 6LL | 55 | 6FB | 24 | 6AS | 12 |
| 6WZ | 52 | 6SJ | 23 | 6AT | 12 |
| 6HR | 48 | 6EW | 22 | 6WJ | 11 |
| 6BC | 37 | 6KU | 22 | 6GB | 11 |
| 6TY | 35 | 6RK | 22 | 6KX | 11 |
| 6ZZ | 32 | 6VM | 21 | 6JA | 9 |
| | | 6WI | 19 | | |

| TASMANIA | | | | | |
|----------|-----|-------|----|-------|----|
| VKTLJ | 372 | VK7WA | 75 | VK7LS | 30 |
| 7JD | 328 | 7BJ | 75 | 7NC | 26 |
| 7RN | 304 | 7LZ | 61 | 7LE | 23 |
| 7JO | 293 | 7AL | 61 | 7XW | 22 |
| 7RX | 287 | 7KM | 47 | 7ML | 22 |
| 7BR | 269 | 7XD | 46 | 7SR | 17 |
| 7OM | 220 | 7LL | 45 | 7FM | 14 |
| 7KA | 217 | 7MY | 44 | 7DS | 14 |
| 7SF | 214 | 7AG | 43 | 7RK | 14 |
| 7DR | 211 | 7EJ | 42 | 7DJ | 14 |
| 7IJ | 198 | 7AC | 38 | 7WI | 13 |
| 7DW | 192 | 7EB | 38 | 7FJ | 13 |
| 7GM | 181 | 7XL | 37 | 7AB | 12 |
| 7CK | 122 | 7KX | 35 | 7WB | 10 |
| 7RY | 88 | 7AX | 34 | 7CT | 8 |

| NEW GUINEA | | | | | |
|------------|-----|-------|----|-------|----|
| VK9VP | 124 | VK9RM | 94 | VK9RC | 78 |
| 9GB | 95 | 9SF | 94 | 9WP | 26 |

| LISTENERS' LOGS | | | |
|------------------|-----|--------------|----|
| K. C. Bicknell | 235 | D. Rankin | 42 |
| E. W. Trebilcock | 124 | F. J. Easler | 42 |
| J. P. Hayden | 120 | R. Dunstan | 23 |
| R. A. de Balfour | 84 | | |

TELEVISION STATION OPERATORS' CERTIFICATE OF PROFICIENCY

Examinations for the T.S.O.C.P. will be conducted in Melbourne and Sydney on the second Tuesday in March, June, September, and December, and oral and practical examinations on the succeeding day or days. The examination is in three sections:—

Section A—Fundamental Theory, 2 hours.

Section B—Transmission Reception and Studio Techniques, 3 hours.

Section C—Practical and Oral Test.

Applicants for the examination must be 18 years of age and hold a Broadcast Station Operators' Certificate of Proficiency, or be otherwise qualified to the satisfaction of the Board.

Copies of a syllabus of the examination may be obtained from the office of the Australian Broadcasting Control Board in Melbourne or from the Superintendent, Radio Branch, in each Capital City.

The first examination will be held on 13th December, 1955, for which applications were due on 15th of November. Notification of this examination was received too late for inclusion in the November issue.

DX ACTIVITY BY VK3AHH*

PROPAGATION REPORT

3.5 Mc.: During the month of October openings to the American continents (0900-1200z) were reliable, while European break-throughs displayed more sporadic behaviour (1900-2030z).

7 Mc.: Conditions on this band did not show any unusual features. Depending upon noise and interference level, these were the periods of band openings: Europe: 0600-0900z, long path; 1900-2100z, short path. America and Far East: 0800-1400z.

14 Mc.: Increased sunspot activity tremendously improved band conditions. They appeared to show peaks during the following periods: 0400-1300z for Europe and South America; 0800-1400z for South East Asia; 0400-0800z Africa.

21 Mc.: Following the general trend, this band provided excellent conditions to all continents. However, openings did not appear to be as stable as they could have been. Europe was workable between 830z and 1300z. The American continents occupied 2100-0800z. Break-throughs to Africa were observed between 0400 and 1200z.

27/28 Mc.: As was to be expected, excellent conditions appeared during the month. Openings being somewhat more reliable in the northern part of our continent, break-throughs were observed in all States, particularly to North and South America. European and African contacts have been reported from Queensland.

NEWS AND NOTES

Number and quality of this month's reports leave no doubt that conditions have improved on all higher bands. Admittedly, the DX is a bit harder on 3.5 and 7 Mc.—but there is still something like a challenge connected with it. Do not forget 7 Mc. and, especially, 3.5 Mc.!

Did you notice the new form of Prediction charts? Oh yes, the old ones were easier to follow, but this is the only way they can be printed now. Due to the same technicality, the October charts could not be obtained in time. Thank you for appreciating the difficulties!

Up-to-date news on activities in Netherlands West Indies comes from Don PJ2AJ: PJ2AR and his XYL PJ2AU have made QRT in PJ-land and are now in Venezuela. Any QSL claims will be followed up by 2AJ. PJ2AE intends being back on the air soon. PJ2AV (ex-PA0FD) is active and QSLs via bureau. Due to illegal operation of a certain PJ2MB during the first DXpedition to St. Martin (call sign PJ2MA) in March, '55, prospects of future DXpeditions to this rare place appear to be doubtful.

ZD2DCP is looking for VK contacts on 14050 Kc, around 2130z (from 5BY).

It is understood that ZL2GX and a ZL1 will go to Kermadec Islands in January, 1956 (from NCDXC).

This is the present activity of ST2's: ST2AC c.w. and phone, ST2AR c.w., ST2DB mostly phone, and ST2NG c.w. The 14 and 21 Mc. bands are preferred (from 2AMB).

HL2AA, Seoul, South Korea, was recently licensed and is allowed to use 1.8, 7, 14, 21, 28 and 144 Mc. bands (from NCDXC).

The 3.5 Mc. band provided some good DX during October: YN1AA, YJ1DL (3504 Kc.) and CE4AD (3514 Kc.) were reported to be active (from 3ZP, ZL1CI).

And here is the echo from "over there": The following VK stations have

recently been heard on 21 Mc. phone, as reported by Jim Hunt, presently in England: VKs 2AKV, 2AVW, 3JA, 4EL, 4HR, 6RU and 9DB (from 3ZBO).

Sorry to hear that one of our most consistent and reliable contributors, Ray VK5RK, had to spend some time in hospital. Hope you are home again and making speedy recovery!

QTBs OF INTEREST

(from NCDXC and VKs 2AMB, 3JA, 3AHH, and Rod de Balfour)
VU2CW—J. N. Saha, All India Radio, Jaipur, Rajtthan, India.
VS4BA—C/o. G.P.O. Kuching, Sarawak.
XZ2SS—C/o. Electricity Supply Board, Rangoon, Burma.
5A1TL—S/Sgt. Eugene Timberger, AF12309138, 580th AR SQD., Box 302, APO231, New York, N.Y., U.S.A.
AC5PN—Via P.O. Kalimpong, India.
ET3AH—P.O. Box 489, Addis Ababa.
FD4BD—Pierre Dubourdieu, P.O. Box 185, Lome, Togo.
TF2WAM—APO 81, New York, N.Y., U.S.A.
ZS8L—Box 4, Maseru, Basutoland.

ACTIVITIES

3.5 Mc.: Frank 3QL worked a series of Ws. Bob 3ZF reports YJ1DL, YN1AA and CE4AD. Dave Jenkin also heard CE4AD and W. Here at 3AHH the month's log is as follows: A series of Ws., VE1ZZ, SM5AQW, CE4AD, YJ1DL, DU7SV.

7 Mc.: Laurie 2AMB heads the list with KP4CC, VP3KE, VESPKE, VE3ABP, VE2LI, VE4RO, Z57J (1630z), FK8AO, CE3AD, and DL1JW. ZS5OX, ZS5FY, ST2AC, EA8BH, ICZ, ILLI, VS1BJ, OZ7B, VP1JB, Albert 3FG worked ZC4IF. Fred 8YS adds DU7SV, Eric BERS-196 heard VE1QN, XE3AH, DL6MK, SM5AQW, G2LU, I1NT, I1EC. Dave Jenkin: DL3VN.

14 Mc. c.w.: 90L: CX*, VQ*CB, BV1US, ZS90* and VP8BD, VP8BL, VP2LH, VQ9AD, FB8BF, 2AMB: CE3RE, KP4ZW* and Europeans, XW8AB, FB3XX, VS6, VU, YV, Allan 3HL: VY5BJ*, Europeans*, FA8ZZ*, VP6KL*, VP9BM*, TI2PZ*, XW8AB*, Jack 3JA: FA30A*, KZ5GO*, Europeans*, KP4TF*, PY1ADA*, ZD8BX*, CE4AD*, F18AC*, TI2PZ*, CE3RE*, E18S*, PY7LJ*, PY4AO*, PY2AFS*, PY1ANR*, PY2NX*, CE3DZ*, TF5SV*, VP8BL*, LU1CA*, LU8MAH*, 457MR*, LU5ABL*, LU3CW*, CE3QJ*, KTIEXO*, CR9AI*, LUIDCO*, Ken 3KR: Europeans*, XE1AX*, KZ5NB*, LU1SE*, 5A4TX*, ZS5ND*, LU8AJ*, LU8AAY*, 4X4FQ*, KP4YX*, TI2PZ*, PY1RW*, YJ1DL*, KP4DP*, VP7NI*, JA, Albert 3PG: Europeans*, 457TM, FA30A*, CE3RE*, TI2BC*, TI2PZ*, KV4BB*, KL7BFW*, PY2AFS*, PY1ADA*, VY5BZ, ZC4IF, KG1KK*, XE1X, PJ2AN*, TF5TP*, XW8AB*, VY5ABA*, Lee 3KO: JA, Europeans*, CS3AC*, 3A2BH*, ZB2I*, PK1EX*, KZ*, PY, CE, TI, KV*, KP4*, CO*, YV*, MP4*, ZC4*, HH*, XW8AB*, OA*, VU*, VQ8LQ*, 3YS: XW8AB*, VK1EM*, VS4BA*, TI2PZ*, PJ2AJ*, and CE3RE, OS4AK, VQ8CG, HZ1AB, AC5PN, Allan 3AHH: KV4AA*, TI2PZ*, VY5AE*, CE3RE*, VY5BZ*, ZC4IF*, VP6KL*, VP9BM*, 954AX*, FA8DA*, LU5ABL*, VS4BA*, Europeans*, CR9AI*, XW8AB*, 457KH*, 457GE*, DU*, VS6*, Bob 4RW: YN1PM*, XW8AB*, 457TM*, Europeans*, VQ8LQ*, VQ2W*, Syd. 48E: DU7SV*, KL7*, VY5BJ*, JA*, XE1MJ*, VE7*, Europeans*, XW8AB*, HH3FL, ZD6ET*, CO8DL*, ZS61X, VU2*, 457, VP8BM, ZD6CT*, VQ4SS*, ZE8JU*, TI2PZ*, PY2AFS*, VS8*, TF5SV*, ET3AH*, LU*, CR1AR*, KZ5IF*, ZC4, FF*, VQ6QL*, and BV1US, HC, ZMR, 3V8AB, CN8BP, ZC4VP, F81M, Doug 6BY, PK1EX*, ZS8L*, 3A2BH*, John 5HI: ZB1CH*, HZ1AB*, YJ1DL*, Austin 5WO: 4X4CK*, Europeans*, KP4ZV*, KV4AA*, VQ8AC*, LU8MAH*, CX2AM*, PY4AO*, PY2AJK*, VS4BA*, KV4BB*, KZ5GH*, CE3RE*, Tim 3ZBO: LU4DMG, KV4AA, CE7AA, Europeans, BERS196: BV1US, CR9AI, CO2OE, CE4AD, DU8CO, DU1CV, DU1OR, DU7SV, DU3DD, F18HI, HH2FL, KC8CG, KL7PI, KV4BB, KV4AA, LU4DMG, LU1SE, LU8MAH, VU, VQ6LQ, XW8AB, XZ2OM, VS4BA, ZS61X, 457KH, Dave Jenkin: Europeans, DU1AQ, DU3DO, KV4BB, ZC5CT, KV4BK, CE1DS, CE3RE, BV1US, VP8BM, 457KH, 457MR, VU2HF (0040z), ZC4IF, XW8AB.

14 Mc. phone: 2AMB: OA2A*, Neville 2APL: PY2AH5*, 3JA: CX2AX*, CESCZ*, CE3QJ*, CE3PV*, Europeans*, VK1RA*, VY5BK*, TI2RMA*, CX5AF*, SKR: 3V8AS*, TG9AD*, ZB1H*, Europeans, 3FG: HC1ES*, GC8FQ*,

Stan 8TE: CN8GD*, CO8DL*, Europeans*, EA9-BC*, GD3IBQ*, HK3CZ*, KV4BB*, MP4BBF*, ST2DB*, 3A2BE*, 3A2BF*, 4X4FQ*, Ken 3WM: HK3PC*, Europeans*, LU7DJU*, LU1FAE*, VU, HK3PFL*, EA9AZ*, PY2AQH*, CX3N3*, MP4, BBF*, OD5DA*, CE2DB*, Harold 3ARK: 4X4FQ*, 4X4AH*, Europeans*, TG9AD*, VY5EU*, VY5BQ*, VY5AO*, VY5AB*, VY5FK*, KP4T, KP4WAE*, CO8LS*, HK4AM*, HK3FV*, HK3-PC*, HK3FT*, KV4BB*, OA8F*, OA8M*, OA4-AW*, OA2A*, OA1E*, GD3ENK*, GD3GMH*, PY8AE*, PY4LP*, ODSAD*, ODSAT*, KZ5-MB*, XE1DU*, CE2DB*, KZ2OM*, KZ2SS*, CX2AX*, LU8MU*, LU4DMG*, LU7BI*, 457-GE*, 457WM*, FA3ZG*, VK1AWI*, ZP5CF*, HI6EC*, VP5KJ*, TI2RMA*, ZB1EB*, MP4BBF*, HC2BH*, KZ5EA*, CO8BF*, 4RW: ZS6AJH*, ZS8RT*, 5HI: TI7HM*, LU5MZ*, Europeans*, HK4DP*, HH2JK*, VY5AB*, VY5EC*, OA4AW*, HK3JV*, KP4QA*, XE1DU*, LU7MAJ*, VQ6-LQ*, HC1ES*, ZM6AT*, XZ2OM*, KZ5KA*, GC8FQ*, 5WO: VQ6LQ*, LU1FAE*, KV4BI*, VY5AB*, Europeans, VQ4FK*, LU4DMG*, LU-AR*, CX2AX*, CE3IT*, ZS6AJH*, PY2CK*, ZP5CF*, ZP5CG*, TG9AD*, ET2US*, Y12AM*, PY2AHS*, CX2CO*, LU7MAJ*, OA8M*, CE3-PV*, HP4BBF*, ZS6XL*, 457SW*, KP4QA*, ZB1EB*, HK4DP*, OA3L*, 3V8AS*, XE2NT*, David 3ZAT: Europeans, DU, PY, KV4, XZ, LU, OA, CE, CX, CS3AC, ZC5, KL7, TI, HK, ZS, VU, BERS196: OA2A, Dave Jenkin: KZ5-KA, John McKendrick: CS3AC, Europeans, HH2JK, SUIAS, 4X4, 5A2, 5A4, KP4, VPI, 457, CN8, Rod de Balfour: 5A1, PY1, PY2, PY4, Europeans, CX2, TG9, LU6, LUY, HK3, CO2, ZP5, OA2, VU, ET2US (1300z), DU6, KP6.

21 Mc.: Fred 2ID: G*, OH*, Is*, SM*, GD*, 3QL: PY1ADA*, OA4C*, VQ4SS*, ZAPL*, G*, Bort 3HE: F*, G*, ZS6SA*, ZS4FP*, HC1FS*, VS2*, KZ5WS*, PY2AJS*, HK8AS*, LASYE*, SM*, and HK, KV4BB, OH, VP8BD, TI2DLM, YQ3DQ, CP5EK, ZS4FC, G*, 3HL, JA*, 3A: DL*, JA*, PY1ADA*, G*, VQ4SS*, VS6-CO*, GM*, SM*, GI*, ON*, ZS2AT, II*, F*, DU6IV*, PA0, OZ7G, OZ3FL*, OH*, CP5EK*, ZS8AB*, ZS5V*, ZS5OA*, KL7ZG*, LA*, VP6-FR*, GD3GMH*, OH5NQ*, HC1ES*, CE3MJ*, DU7SV, KW6BB*, Bill 3JE: VP8BD*, ZS6*, ZC4*, VS6*, Percy 3JA: VP8BD*, CX2CO, PY2CK*, PY1MK*, OA4C*, OA4ED*, OA4BN*, OA4CL*, OA4AE*, CP5EK*, VY5AB*, KV4BB*, HK4DF*, HC1ES*, HC1FS*, KZ5FP*, KZ5MB*, KZ5HA*, ZS4FP*, ZS6CU*, ZS5OA*, GD3GMH*, G*, DL3RM*, DU7SV, JA*, KC8CG*, VS2BD*, VS6*, PY1ADA*, LU3EX*, LU8TA, SM*, VQ4-SS*, ZS4RK*, HB9, PA0, OH*, OE*, VU* and SV0WT, GW, 3PG: SM*, DL/DJ*, GM*, GW*, LA*, JA*, HB9*, OH*, PJ2AN*, PY1ADA*, DU7SV, KC8CG*, YU*, CP5EK*, PY2CK*, GD3GMH*, HC1ES*, KR8*, 3WM: VS2*, HC1FS*, VY5AB*, ZS6SA*, OH*, HC1KV*, JA*, OZ*, VP8BD*, ZS6AD*, OA4BU*, 3WQ: HK5ER, PY1AQ, PY1BCJ, G, DL, GM, CP1AT, LU9-HG, 3Y8: HB9, JA, Frank 8ZI: GD3GMH*, DU7SV, VP8BD*, Frank 3ZU: ZE2JK, JA, VS6, ZS5MP, DU7SV, LA, Neville 3ACN: Europeans, Len 3ALD: Europeans, VS1*, 4RW: CP5EK*, VS6*, VU*, HB9*, DL*, G*, KN8*, HC1-KV*, DU7SV, PA0, 48E: CR9AH*, DL*, G*, SM*, DU*, VQ4SS*, OE*, HB9*, JA*, VS6*, GM*, ON*, 9S4BN*, F*, GW*, CP5EK*, KC8-CG*, 5WO: PY2AK*, TI2DLM*, HC1FS*, CP5-EK*, KZ5WZ*, KC8CG*, KV4BB*, PY2CK*, ZS5MP*, ZS5PG*, ZS6SA*, VS2*, DU7SV*, JA*, ZS2CY*, ZS3G*, G*, VU*, SM*, ON*, LA*, DL*, Rod de Balfour: JA, DU, VP4, HCL, PY1, CP5, KL7, KC8, 3AHH: KC8CG*, CP5EK*, CE8AB*, DL*, G*, GD3UB*, JA*, VS6*, WN1AOZ*, KZ5WZ*.

27/28 Mc.: Norm 2AFE: DU*, W8*, Angus 31Y: KH6*, W6*, 8JA: Ws*, 3PA: W6* and HC1FS, VE, 3PG: a series of Ws* and KH6*, 3WM: W6*, 3YS: W8*, Max 4HD: a series of Ws*, VE, KH6*, TG9JW*, CO2BL*, HC1FS*, HC1ES*, LU1OD, KR6*, KC8*, CR9AH*, 457, VQ4EU, I1II, OH2OV*, OH5NQ*, DL3RM*, VS6CZ*, G3BXI*, G2CBA*, G2YZ*, I1YI*, G3I1W, 5WO: W6*, John McKendrick: W3, W5, W8, W7, 3AHH: a series of Ws*.

Rare QSLs were received by: 2AMB: VK1DY, KV4BK, 3JA: ZS3AB, CS3AC, 5HI: EA9AZ, FB8XX, 9S4BE, MP4BBL, TF5SV, ZB1AJX, 6WO: GD3IBQ, MP4BBS, VQ4FG, OA8M, BERS196: HRLJZ, VQ4EG, VY5DE, 5A2CU, Rod de Balfour: KTIWX, HR3HH.

Thanks are extended to all contributors. Christmas Greetings to fellow Christians everywhere!

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VK3QG requests anybody who obtained an Auto Transformer, 21 amps. S.Ph., from recent hand-out to contact him. His address is C. P. Smith, 1333A Gregory Street, Ballarat.

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50 Mc. ACTIVITY

Of particular interest to 50 Mc. enthusiasts throughout Australia, is the news that VK1ZM on Macquarie Island will again be operating on 80.94 Mc. An automatic keyer will be in use for test transmissions. VK1ZM reports that he heard New Zealand last January. Delayed arrival of the party last Xmas hampered their efforts on this band, but they are all set for an early start this season, so keep an ear open for them! VK1IJ (ex-VK3IJ). In the relieving party, will continue on with the tests as soon as possible after the changeover later this month.

FK8AL (50.4 Mc.) hopes to have his gear ready for operation very soon. FK8AL also very keen and whilst listening during 1954-55 Ross Hull Contest, heard VKs, VR2 and ZL1. Rumour has it that VR2CG will be away on holidays during this DX season, so we can only hope that other VR2s will be sufficiently interested to take his place and keep Fiji alive in the 6 mx world. Last January VR2CG worked into VK6, a distance of approx. 3,900 miles. It is expected that the Papua and New Guinea Division will be represented by VK9DB and VK9XK.

That stalwart, Col VK7LZ, will keep the VK7 flag flying from Launceston. Activity on the band from Hobart will certainly be welcome (particularly by the VK3 gang!) as the hop across Bass Strait to Northern Tasmania is a little short for Es contacts, except on very rare occasions. VK5TL will provide another interesting contact as he is located at Alice Springs. His frequency is 50.4 Mc.

NEW SOUTH WALES

A very interesting lecture was given by Mr. Mondell on T.V.I. at the October meeting of the V.h.f. Group. Mr. Mondell has had several years on t.v.i. problems in the United States. He outlined various types of t.v.i. from all types of devices and also commercial a.m. and f.m. transmitters, and finally dealt with Amateur transmitters, explaining the likely causes of interference and the means of preventing these signals getting out of the tx.

The hidden tx hunt held on Wednesday night, 19th October, was well attended, seven cars taking part. The hidden tx (2ANF) was located in the bush at Pymble where there are many dead end streets which finish at the edge of gullies. However, Bob 2OA and party proved they could take accurate bearings, being the first to get in, the rest had to be called into the location at 9.30 p.m. All were fairly close in the area and soon arrived to partake of the hot dogs and tea.

Keith 2ZAA, of Tumut, was in Sydney during the month with his 2 mx mobile gear in the car. Keith was operating portable most nights, making a lot of contacts. He also got along to the V.h.f. Group meeting and met most of the 2 mx gang. On his way back to Tumut, Keith went up on to Mt. Gibraltar at Mittagong to make a few last contacts with Sydney. Keith is calling Sydney from Tumut each night at 8.30 to 8.35 p.m. on 144.05 Mc., so turn your beams on Tumut at that time.

50 Mc. is showing signs of life. Stations heard on the band looking for contacts were 2AFL, 2JX, 2HE, 2ARG, 2RU, 2AJR, 2ABH, and 2XX.

Coming events of the Group are: Sunday, 20th November, Fox Hunt with 2AZO as the fox; 4th December a test, with the cave explorers at Jenolan Caves with 144 Mc. gear to see the possibilities of using radio communication within the caves for exploration and rescue work.—ZLG.

VICTORIA

At the last fox hunt, the first hiding place was behind the Hawthorn tram sheds where only two of the hounds discovered the fox, Laurie 3ALY and Ray Price. The second hiding place was on a dark narrow track along the waters edge behind the Williamstown football ground. Here the only hound to discover the fox was Ray Price and his two co-navigators, Ray 3KD and John 3ZAI. Then on the run through Newport and Kingsville, the fox himself got lost and was heard appealing to any hound in the vicinity to please come and find him and put him back on the track to civilisation again. They found him all right, but would they help him? Not them. They just laughed and drove off again and left him

to find his own way out of the maze of streets and Housing Commission settlements. When he did finally get back on the road again he was pounced on by Eric 3ADU who was waiting at the Korolit Creek Bridge, knowing that this was the only way he could come. Catches on the run were also made by Jack 3VZ and Roy 3ARY. All seemed to have a very amusing evening. Supper and the final post mortem was held at the home of Ray and Nance Price in Essendon. Thanks Nance and Ray for inviting us to your place. The outright winner for the evening was Ray Price and he certainly was on the fox's tail all evening.

There was a good gathering at the last V.h.f. Group meeting to hear and view the illustrated lecture given by Mr. Alan Hart, assisted by Mr. Peter Barnes with the slides. Both gentlemen were from the Radio Research Laboratories and their lecture was on Micro-wave Equipment in current use. Mr. Hart's amiable personality and interesting presentation of his lecture gave the members an enjoyable and enlightening evening and many points that have puzzled them on carrier line transmissions were explained. They were greatly interested in a 23-channel pulse system at present in use between Warragul and Melbourne. The members showed their appreciation by asking many questions which Mr. Hart seemed to enjoy answering. At the conclusion of the lecture, the President, Herb 3JO, thanked Mr. Barnes and Mr. Hart for their interesting lecture and members seconded the President's remarks by a resounding round of applause.

As a sequel to this lecture, a visit has been arranged to the City West Exchange for the V.h.f. Group meeting to be held on 21st Dec.

One of the highlights of the recent All Models Exhibition was the tx and rx belonging to Joe, 3TO, of Yallourn. The tx, which is the tx section of the 522, has one modification, the addition of a speech amplifier stage to allow the use of a xtal mike. The tx power supply is on a separate chassis and supplies 300v. at 250 Ma. and 150v. at 10 Ma. for bias. The rx operates on two bands, namely two and six mx. There is a separate front end for each band consisting of two r.f. stages, mixer and xtal controlled osc. Tuning is done at the first i.f. freq. which is 17-21 Mc., using a high C osc. and temperature compensation to ensure stability. The first fixed i.f. freq. (one stage) is 6.9 Mc. which is again converted to 455 Kc. (one stage), followed by the usual audio amp. Switching is carried out at the input to the tuned i.f., the grid circuit being connected to the output of either mixer as required. The rx has its own built-in power supply and can be removed from the rack and operated as a self-contained unit when required. The tx and rx are both fitted with matching front panels with home-made "Collins type" dial mechanisms. They are also fitted with dust covers to keep out the coal dust which, of course, is a real menace in the Yallourn area. Sprayed with grey, the equipment is a very excellent example of the fine workmanship that is always evident with all Joe Roger's gear.

Aif 3IE has been putting terrific signals on 2 mx band, and Bert 3HE has also been making appearances on that band with terrific signals, but don't let them kid you, they've both been having a loan of 3TO's gear described above. Ray 3ATN has been spending a few days in Melbourne and worked mobile during the trip on 2 mx, he also went to Mt. Dandenong and had quite a successful evening, working back to the Melbourne chaps. He was amazed at the excellent signals he received from that location. Mt. Dandenong seems to be a very popular location as David 3ZAT has spent two very successful evenings there recently, working on the 2 mx band.

Keep the Bi-monthly Scramble in mind, the next one is to be held on Monday, 8th December. The Group would like to see more v.h.f. stations in the next scramble.—Phyl Moncur.

288 Mc.: The highlight of November was Bert 3AAF going portable/mobile to Mt. Dandenong on Cup evening, 1st Nov. On his way up from Box Hill, Bert listened for signals and only 3QO's was strong enough to copy. When 3AAF arrived at the Observatory (2050 ft.) and called CQ, the 288 Mc. gang lined up on him and kept him very busy from 8.30 to 10 p.m. Stations worked were 3RI, 3QO, 3ZAI, 3ZAN, 3ZAQ, 3AAP, 3AUX and 3AEL. All

sig's were S8-9 save 3AHL who was down both ways. Bert was using p.p. 7193s with 6w. input. An AR301 (modified) and a ground plane ant. on roof of car; he had with him a companion who was kept busy logging contacts (3AFJ note, said companion did NOT have blue eyes). On way home, Bert ran tone for test purposes.

Jerry Lane, 3ZBN, is on the air with good sig from Nunawading. He runs p.p. 7193s and r.b. rx, 5 el. beam and a good carbon mike. Ken 3AFJ has modified a 1045 for 288 Mc., but has no tx as yet. Max 3ATK should be on 288 Mc. but no one can find him. 3RU and 3RQ at Mitcham have 288 Mc. rx's. Evan 3AAP puts out good sig from Maidstone. 3ZAF has tx but no rx, busy with exams. 3ZAW off for a while due to chapter of accidents. Glen 3ZBJ uses his 2 mx mod. on his 7193 and sure whacks them hard; uses 6AK5 as triode in r.b. rx. Warwick 3ZBO puts out strong sig, but no rx, though 'tis said he is cooking up some diabolical device. Lance 3AHL's sigs are down, maybe gear has rusted out (his tx is on top of mast!). David 3ZAQ uses 7193s and r.b., 16 el. billboard; only trouble is his power pack belongs to family radiogram so that when 3ZAQ is on 288 Mc., no records for family! Rex 3ZBK heard testing with 3AAP recently. Bob 3ZAN busy with home extensions. John 3ZAF uses 7193s and RL18 r.b. rx, and 3 el. vert. coilinear on tower; keeps calling 3QO "Col!" 3QO busy with slotted lines sending waves and other strange things. Ron 3ME at Cheltenham, what's happened to you? Geoff 3AUX punishes the gang with usual kilowatt (sounds like it any how) to 316As. Len Poynter (Pres. S.w.l. Section) has good rx and 24 el. beam. How long before you get a ticket Len? 3RI is on most Thursday evenings.

3ATN of Birchup and 3PO of Ballarat plan to go on 288 Mc. on xtal to see if they can contact one another; should have a good chance as terrain is level between them. Good luck! What has happened to the Geelong 298 Mc. chaps? Some activity in that locality would sure be welcome!—3QO.

SOUTH AUSTRALIA

Very little news this month chaps, the main items of interest being centred on 144 Mc. as usual. Ken 5KC has completed his 144 Mc. mobile installation and several tests have already been carried out between Ken's mobile tx and the home station rx feeding a tape recorder.

Mobile duplex has also been tried, using 50 and 144 Mc. This type of operation is quite new to most of us and is extremely interesting. Your scribe having been "bitten by the mobile bug" is flat out building a b.c. rx for the car; not to listen to b.c. programmes, but to feed a 2 mx converter into it. The converter consists of a 6AK5 r.f., 12AT7 mix./quadrupler, 6AK5 xtal osc./mult. Incidentally, Ken's mobile tx is a modified BC25A, his converter similar to the one described above.

Les 5AX had the misfortune to lose his 12 el. array in the last "big blow" we had; however, Les' spirit is still strong and he intends to re-build, then re-erect a much stronger version. 5GL journeyed to Whyalla last month complete with 2 mx gear and collapsible beam. He reported hearing 5QR at 55. Nothing heard from 5EN or 5RI this month, country activity being held above water by Les 5AX and Comps 5EF.

Phil 5ZAD is a welcome newcomer to the ranks. Phil is using a QQE03/12 in the final, 4 el. beam and xtal converter; a nice set-up to start off with Phil.

Stations heard last month included 5KC, 5RO, 5AX, 5EF, 5GB, 5QR, 5ZAW, 5ZAD, 5ZAA, and 5AV.—SMT.

WESTERN AUSTRALIA

The V.h.f. Group continues to grow! Three new members in Alf 6EA, Tom 6ZAF and George (A.O.C. candidate) were welcomed to the last meeting of the Group held in Ron 6FM's home. An apology was also received from John 6ZAN who intends joining, but could not be present at the meeting. Membership now must be very close to 30.

The Group were very pleased to receive letters from the VK2 and VK9 V.h.f. Groups, supporting this Group's effort to have the changes to the 50 and 144 Mc. bands reconsidered. The Group has written to all State V.h.f. Groups and is awaiting replies from the others.

Barry 2ZAG was a very welcome visitor, the first Z call to visit us. Barry gave us much information about v.h.f. in Sydney and the DX workable in VK2. The most amazing thing to us was the apparent lack of activity on 288 Mc. in Sydney. In Perth there are four xtal and six mod. osc. tx's. Rx's are either super-regen. or xtal converters. Barry's talk was very much appreciated and our thanks go to him for coming to our meeting even though he had just stepped off the planet!

Barry was able to visit a number of the shacks in the few days he was here and we

hope that his visit will be repeated by him and by any others who visit this State.

50 Mc.: Despite improving conditions on 10 mx, this band has not yet opened to the East. Reported taxi interference on 70 Mc. from the East aroused much activity, but nothing was heard on 6 mx.

144 Mc.: Activity has been very quiet with many of the younger members studying for exams. Don 6DW put in an appearance the other Sunday but tests with Rolo 6BO were unsuccessful. It is to be hoped that Don will be able to put some time in on 2 mx this summer and give more of the Z boys a chance for working DX. New members, Alf 6EA and George, hope to soon put tx's on this band. George hopes to be able to operate from Mundaring and this will lengthen the haul for present Perth stations. Tom 6ZAF is having trouble with his tx, having the required drive to the final, but very little output. John 6ZAN is busy with his rx. John's departure for VK3 in January will mean that his set-up here will have to be of a temporary nature. Noticed Kevin in the spotlight with the display at his school during Education Week. Kevin put on a radio display that created a deal of interest in the v.h.f.s.

288 Mc.: Latest development is the erection by Denis 6AW of a 13 ft. diam. parabola! We will be very interested to see how this turns out. Denis, I still want that contact!

1215 Mc.: Lionel 6ZAE and Len 6ZAT have taken delivery of some ighthouse tubes and Len is busy searching for copper piping of the right diam. They showed great interest in Barry's plans for his stal 1215 Mc. rig. At the moment Lionel and Len are not contemplating 109w. in for 7w. out!

Stop Press: Rolo 6BO has just received the first VHFCC Award to the VK call area from "Short Wave Magazine" and his exploits have been praised in the October issue. Congratulations Rolo!

Finally, don't forget the 144 Mc. Transmitter Fun and Christmas meeting to be held on Saturday, 17th December. Cars should assemble in Kings Park at 8 p.m. Bring along your YLs and XYLs for an enjoyable night.—6ZAA.

TRADE REVIEW

PLATED CRYSTALS

With the trend towards vacuum mounted and plated crystals, it was considered worthwhile to make a few checks with them.

The most noticeable advantage was the greater activity of the plated type, possibly due to the method of mounting, which removes the damping effect of pressure mounting. As the crystals are soldered in position, there is no chance of accidental movement. Tests indicated that much higher crystal current could be handled without risk of fracture than is the case with the conventional crystal.

The only known disadvantage is the possibility of faulty plating.

Further improvement can be made by vacuum mounting the crystal in a tube envelope. When so mounted, there is no possibility of dust or other foreign matter affecting the crystal. Best of all, from the Amateur point of view, the contents of the envelope are visible, thus saving the necessity of pulling the assembly apart to see "the works."

As nine-pin miniature envelopes are used, it is possible to mount eight crystals in the one assembly.

Tests were made for drift using crystals between 8 and 9 Mc. Starting from cold, the vacuum mounted crystals drifted less than 50 cycles before settling down, taking less than two minutes. Similar tests using unplated, pressure mounted crystals showed drifts approaching 1.5 Kc.

Although either gold or silver can be used for the plating, local production is being limited to silver, as the extra cost for gold is considered uneconomical.

Our thanks are due to Bright Star Radio for making crystals and facilities available to us.

S.W.L. SECTION*

VICTORIA

The Group met in the club room at 191 Queen Street on the last Tuesday of the month and 25 members were present. At this meeting we were very sorry to receive the resignation of our former Secretary, Gerrard Lane, who must resign for health reasons. We here in VK3 wish to thank you for services rendered and we wish you a speedy recovery. New Secretary is John Wilson who is also correspondent for this page. New Council representative is Ian Hunt.

New members for the month are 12-year-old Robert Tait, of Blackburn; M. McDonald, of East St. Kilda; K. V. White, of Bentleigh. To these chaps we extend a welcome to the Group and hope to hear from you regarding your band activities.

SOUTH AUSTRALIA

From Len we received news of the Group's activity, stating that they are planning visits to the P.M.G. Relay Station at Bonnythorn and SCL tx at Brooklyn Park.

New correspondents from VK land are Eric M. Grick, VK5; Kevin Bicknell, of Inglewood, Rodger Runston, VK7; and Richard L. Lockerville, of VK3. We are very pleased to hear from you chaps and all logs are gladly received.

ZL DX CONTEST

The Heard ZL DX Contest run by the VK3 Division of the W.I.A. in September of this year was won by David Rankin, WIA-L3033. Congratulations David on your marvellous results.

S.W.L. CALLS

To those associate members of the VK3 Division of the W.I.A. who have not yet made application for their s.w.l. number, please do so by writing to the Secretary W.I.A., 191 Queen Street, Melbourne, as soon as possible. To VK3 members, make application to Secretary W.I.A. VK5 Division, C/o. 28 Daley St., Grassmere, S.A.

So once again our Festive Season has come around. To all who have corresponded with me and sent reports of interest for this page, I take this opportunity to thank you all.

A very Merry Xmas and Happy New Year to you all from VK1-9, and all s.w.l. and Amateurs everywhere.

NEWS ON THE BAND

288 Mc.: From WIA-L3003: VKs 3AUX, 3RI, 3QO, 3ZBO, 3ZAI, 3ZAQ.

144 Mc.: From WIA-L3003: VKs 3HE, 3CB, 3KD, 3ZAI, 3ZBB, 3ZBO, 3IE, 3ZAD, 3UG, 3ZL, 3FO, 3ZBK, 3AAP, 3AKR, 3ANK.

21 Mc.: From WIA-L3003: W4, 8, 0, YL, ZL and CO2.

14 Mc.: From WIA-L3003: LU6, LU8, FK8, 11, ZL4, VK3. WIA-L3015: CT1, CO2, DL, DL6, CX2, EA2, HCl, HK3, ET2, 11, OES, MP4, LU7, LU4, KP8, KH6, KA2, HB9, PA0, PY1, KZ6, SV0, TA3, TG9, T12, VR2, VK1, and received cards from EA3CY and IITD. Unknown correspondent: VK1, UR2, KP4, CR9, OL4, KL7, KC6, 11, VE7, W1-9. Gordon Hepburn: CT1, FB, EA, ET, 11, CT3, OES, KP4, HK3, JA8, FK8, HB9, OES, W1-3, W6, W6-0, KH6, KG6, VR2, W8MOE/P, KL7, and 43 ZLs. Cards received from ZM6AS and CO2BL. From WIA-L3018: CT1, DL4, DL1, EA7, FHFH, F1EA, G3, F8, GW4, 11, 15, JA2, 5, KZ5, KV4, LU4, OES, PA0, SMS, TG9, VE7, VR2, 5A3, FAS, HK4, 4S7, ZM6, EA2, YB5, PY9, XES, ON4, VK1DC. From WIA-L5097: CT1, CX2, FK8, KA2, KH8, KR6, KW6, KX6, LU4, PY4, ZM6. WIA-5096: CR9, JA2, 3, 4, 8, K6, KA2, KC8, KM6, KR6, F12, VK9, VS1, W, ZL1-4, ZM6, DU8, F2, E12, PY1. Jack Clayton: G8, KV4, KX8, VK1, VK9, W, ZL, ZS8. Eric M. Grick (VK6): E19, G2, G6, CN8, KA8, ZL, W, VK. Kevin Bicknell (of Inglewood): 4S7, VE3, W, KA5, KA3, KG6, XZ2, DL4, VE3, VS1, KR8, KX8, KL7, JA4. Rodger Dunstan: W, KG8, JA8, PY2, VR2, V88, G3, KP4.

7 Mc.: Kevin Bicknell: FK8AR, VK9W1. WIA-L5004: ZL1-3, W1-0, TI2GC, VK9, ZL. WIA-L3008: VK2, VK3.

5.5 Mc.: W2, 4, 0, KL7BJW, KL7AV, ZL, VK9.

* Compiled by John Wilson, WIA-L3004, 37 Rayment Street, Alphington, N.20, Victoria.

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- Geloso M401—Ask for Type M400, complete with base £6/18/1
- Geloso M401V—Ask for Type M401, complete with vol. control £7/18/2
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- Geloso 1100V—Ask for Type 1100, but with volume control £8/1/8
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- Geloso B80/1100V—Ask for Type B80/1100 with base and vol. control £8/19/3
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- Zephyr 6XA—Crystal Insert with hum shield £1/9/7
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- Geloso B80/416/without Transformer—Type 416 with desk stand, £14/14/8
- Zephyr 99MA, 90MB, 90MC—General Purpose Dynamic, Ideal for P.A., etc. 90MA, Grid; 90MB, 500 ohms, 90MC, 200 ohms, with swivel head, £11/6/3
- Zephyr 90MD—As above, 50 ohms, £8/8/-
- Zephyr 98MA, 95MB, 95MC—As above, small cage, chrome plated with fixed head, 95MA, Grid; 95MB, 500 ohms; 95MC, 200 ohms £9/19/5-
- Zephyr 95MD—As above 50 ohms, £7/19/5-
- Vitavox Type "A"—Black, bronze, complete in storage box, £18/2/-

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FEDERAL, QSL, and DIVISIONAL NOTES



FEDERAL

Fed. President: W. T. S. Mitchell, VK3UM.
Fed. Secretary: L. D. Bowie, VK3DU, Box 2611W, G.P.O., Melbourne.
QSL Bureau: R. E. Jones, VK3RJ, 23 Landale Street, Box Hill, E.11, Vic.
DX C.C. Manager: A. G. Weynton, VK3XU, 30 Park St., West Brunswick, N.16, Vic.

NEW SOUTH WALES

President: Jim Corbin, VK2YC.
Secretary: Harry Hickin, VK2ACH, Box 1734, G.P.O., Sydney.
Meeting Night: Fourth Friday of each month at Science House, Gloucester Street, Sydney.
Divisional Sub-Editor: Ted Whiting, VK2ACD, 18 Loudon Street, Five Dock.
QSL Bureau: J. B. Corbin, VK2YC, Box 1734, G.P.O., Sydney (Inwards and Outwards).
Zone Correspondents: North Coast and Tablelands: Noel Hanson, VK2AHH, Ryan Ave., West Kempsey; Newcastle: Ron McD. Stuart, VK2ASJ, 88 Dunbar St., Stockton; Coalfields and Lakes: Harry Hawkins, VK2YL, 9 Comfort Ave., Cessnock; Western: W. H. Stitt, VK2WH, "Cambijowa," Forbes; Sth. Coast and Southern: Eric Fisher, VK2DY, 2 Oxlade St., Warrawong; South Western: J. W. S. Edge, VK2AJQ, Wallace St., Coolamon; St. George: Chas. Coyle, VK2YK, St. Carlton Cres., Kogarah; Western Suburbs: Barry White, VK2AAB, 33 Flavell St., Concord.

VICTORIA

President: G. Dennis, VK3TF.
Secretary: D. L. Robinson, VK3ALD.
Administrative Secretary: Mrs. May, C.O.R. House, 191 Queen St., Melbourne.

FEDERAL

AMATEUR TELEVISION

An item of extreme interest to all Amateurs was the announcement by the Postmaster-General (Hon. H. L. Anthony, M.H.R.) that permits would be granted to licensees of Australian Amateur stations to engage in television experiments.

It will be remembered that for some time past the Institute has been desirous that licensees should have this special means of communication available to them. No doubt that now permission has been granted, Amateurs will take a keener interest in the techniques necessary for this medium.

It is particularly gratifying to know that once again the Amateur experimenter is acting as a pioneer in this field of radio. As soon as the necessary regulations are framed (and this is now in progress), numbers of Amateurs will commence the first television broadcasts in this country.

AMATEUR TELEVISION IN GREAT BRITAIN

In view of the above, it is worthy of note that an Amateur Television Convention is being organised by the British Amateur Television Club.

This, incidentally, is not the first. Another was held in 1951 and experiments were conducted as far back as 1930.

The fact that a convention is being held proves that interest quickly grows and it may not be long before such a convention is held in Australia.

R.S.G.B. NEWS SERVICE

It is interesting to hear that the Radio Society of Great Britain will soon be commencing a News Bulletin Service on a frequency of 3,800 Kc. This frequency, it is hoped, will give a maximum coverage of the country.

The weekly service, which is in the hands of a small committee, aims at a "newsy" up-to-the-minute broadcast.

FEDERAL QSL BUREAU

BAY JONES, VK5RJ, MANAGER

It is understood that in January next, ZL2GX is going to the Kermadec Island and will be active from that location.

Leny, of VQ8AB, states that a VQ4 is in VQ8 and trying to get a rig on the air despite many difficulties and without much local encouragement.

AC3PN, a newcomer, is currently active from Bhutan on 14 Mc. c.w.

Ray VK9RH advises that he is now the only active station there since VK9OK has left Norfolk Island.

Meeting Night: First Wednesday of each month at the Radio School, Melb. Technical College.
Divisional Sub-Editor: Phyl Moncur, 233 Union Road, Ascot Vale.

QSL Bureau: Inwards and Outwards—W.I.A., 191 Queen St., Melbourne, C.1, Vic.

Zone Correspondents: Central Western: W. J. Kinsella, VK3AKW, Magdala, Lubeck; South Western: W. Wines, 48 Cranley St., Warrnambool, and W. Zimmer, VK3AWZ, 70 Skene St., Newtown; North Eastern: A. D. Buchanan, VK3FD, "Booroodal," Wairangi; Far North Western: M. Folle, VK3GZ, 101 Lemon Ave., Mildura; Eastern: K. V. Scott, VK3SS, Johnston St., Maffra; North Western: C. Case, Cumming Ave., Birchip.

QUEENSLAND

President: Frank Bond, VK4ZM.
Secretary: W. J. Raffier, VK4PR, Box 638J, G.P.O., Brisbane.

Meeting Night: Fourth Friday in each month at the Royal Geographical Society Rooms, Ann Street, City.

Divisional Sub-Editors: F. B. Bond, VK4ZM, and W. J. Raffier, VK4PR.
QSL Bureau: Inwards—J. Files, VK4JF, Wanda St., Buranda; Outwards—Miss Clair O'Brien, 83 Jardine St., Stasford.

SOUTH AUSTRALIA

President: G. M. Bowen, VK5XU.
Secretary: B. W. Austin, VK5CA, Box 1234K, G.P.O., Adelaide. Telephone: J 1151.

Meeting Night: Second Tuesday of each month at 71 Waymouth St., Adelaide.
Divisional Sub-Editor: J. M. Coulter, VK5JD, 89 Commurra Ave., Ackland Gardens.

FK8AI has left New Caledonia and is now located at Dept. Civil Aviation, Marguave Airport, Marseilles (France).

News of the death on 13th October of Georges Courtot, FK8AN, at the age of 43, comes from FK8AC.

George Elliott, ex-G5LI, now VE3LI, at 5225 MacDonald Avenue, Montreal, Quebec, Canada, is active on 7 Mc. c.w. George is in charge of the Canadian Broadcasting Systems a.m., f.m., and t.v. services in Canada, which keeps him well occupied, nevertheless he is still the same keen Amateur as ever and is on the lookout for VK signals on 3.5 Mc. as well as 7 Mc. His first VK QSO was VE3LI with VK1XZ in August, and since then he has QSOed VK2, 3, 4, 5, 6, 7 on 40 metres.

— . . . —

FEDERAL AWARDS

W.A.V.K.C.A. AWARD

Further applications have been received as per details below. From information gleaned, I have discovered that this is not an easy award to secure although it was intended that it should be reasonably easy when Federal Executive drew up the rules.

The one and only reason why it is not easy is the fact that the VK5 stations in the Northern Territory do not QSL. Only one card for the Northern Territory per applicant is required, yet I find that there are literally dozens of overseas Amateurs who can qualify for the award except that they lack the VK5 Northern Territory card.

Northern Territory Amateurs who are still resident and those who are not now resident are asked to please send out their cards. This is not asking much, but it means a great deal to the many operators who need that card for their award. Al Scarlett, W2CC, tells me that he finally got a card from one of the Territory gang after 7½ years!

Certificates were issued during the month to the following: Eugene E. De Turck, W6YC; Albert E. Scarlett, W2CC; W. W. Simpson, W8KPL. Total Certificates issued, 18.

D.X.C.C.

I have done a little research with a view to finding out whether it is true that DX is easier to work from some parts of this country than others. As a basis, I took the D.X.C.C. records of the three leaders in each call area and carefully examined them to ascertain what they had worked and when they did so.

I secured a lot of data, but quite a lot of it did not really answer all the questions that I had in mind, since I have no data on the gear used and the antennae systems. However, I did discover that the leaders seem to follow

QSL Bureau: Geo Luxton, VK5RX, 27 Belair Rd., West Mitcham, S.A. (Inwards and Outwards).

WESTERN AUSTRALIA

President: F. A. T. Tredrea, VK6FT.
Secretary: J. Mead, VK6LJ, Box N1002, G.P.O., Perth, W.A.

Meeting Place: Perth Technical College Annex, Mounts Bay Road, Perth.

Meeting Night: Third Tuesday of the month.

Divisional Sub-Editor: R. H. Atkinson, VK6WZ, P.O. Box 127, Geraldton.

QSL Bureau: Jim Rumble, VK6RU, Box F319, G.P.O., Perth, W.A. (Inwards and Outwards).

TASMANIA

President: F. J. Evans, VK7FJ.
Secretary: G. F. Tait, Box 371B, G.P.O., Hobart.

Meeting Night: First Wednesday of each month at the W.I.A. Club Room, 147 Liverpool St., Hobart.

Divisional Sub-Editor: V. F. Dore, VK7JD, 29 Brent St., Glenorchy.

QSL Bureau: K. A. Johnston, VK7RX, 34 Tower Rd., Newtown.

Zone Correspondents: Northern: M. A. Chaplin, VK7CA, 58 Trevallyn Rd., Launceston; North Western: S. H. Pattison, VK7UW, 38 Mark St., Burnie, Tas.

PAPUA—NEW GUINEA

President: F. M. Nolan, VK8FN.
Secretary: D. F. Lloyd, VK8OQ, C/o. O.T.C.

Receiving Station, Port Moresby.

Divisional Sub-Editor: W. Holland, VK8BW, C/o. P.O. Box 76, Beaulieu.

QSL Bureau: D. H. Beadell, VK8DB, C/o. P.O. Box 107, Port Moresby.

in the one pattern, which is interesting. The following details may be of interest to the DX enthusiasts now that the DX cycle approaches and the boys are warming up their gear on 21 and 28 Mc.

1. The bulk of the DX has been worked on 14 Mc., however the more difficult contacts have all been made on 28 Mc. Difficult means rare in this particular case.

2. 28 Mc. phone contacts made immediately after the band was returned to us after the War provide a very high percentage of contacts with the rarer countries. 28 Mc. c.w. did not take on so well, but I can find no valid reason for this.

3. The 7 Mc. band provided the least DX so far as confirmations in the D.X.C.C. records are concerned.

4. I notice that the VK6 stations seem to find it difficult to work into the Caribbean area and into Northern South America. The VK5 stations find that South America is difficult and the Tasmanians seem to have spots of bother with several parts of the Globe.

5. The following countries are hard to get from all over VK land. Some of them are not populated by Amateurs, of course, so even the W kilowatt stations can't break in. The list is long and should provide the leaders with a task for the future. Here they are: Afghanistan, Albania, Aldabra Is., Andaman and Nicobar Is., Ascension Is., Bhutan, Cape Verde Is., Clipperton Is., Christmas Is., Cocos Is. (T19), Comoro Is., Crete, Faeroes Is., Franz Josef Land, Gambia, Port Guinea, Span, Guinea, Iml. Jan Mayen Is., Laccadive Is., Maldives Is., St. Pierre and Miquelon Is., Mongolia, Principe and Sao Tome Is., Rio de Oro, St. Helena, Seychelles Is., Sierra Leone, South Orkney Is., South Sandwich Is., South Georgia Is., South Shetland Is., Svalbard, French Togoland, Tokelau Is., Tristan da Cunha Is., Turks and Caicos Is., Vatican City, Wrangel Is.

6. There may possibly be one or two more, but the bulk of them are as above. Quite a lot of these countries either have or have had a Ham population so that they are not all impossible places to contact. The fact remains that the leaders of the D.X.C.C. in this country do not find them easy and with one or two exceptions none of them have worked any of the countries listed above.

7. Get busy you Amateurs with the super beams and see how you can make out.

—Gordon Weynton, VK3XU, Awards Manager.

NEW SOUTH WALES

HUNTER BRANCH

The October meeting of the Hunter Branch of the N.S.W. Div. of the W.I.A. was well attended by Amateurs, XYLA and YLs of the

Branch to hear Bill Storer tell of his experiences in VK1 land. Bill gave a very interesting account of things in VK1 and showed some educational films of the Antarctic.

Arrangements are well in hand for the Hunter Branch Xmas Social to be held on Saturday, 10th December, 1955, in the Charlestown Institute. The social committee has promised some startling surprises for this year's "do," so do not forget to come along and join in the fun.

There will be no meeting of the Hunter Branch in December, the next meeting will be held on Friday, 13th January, 1956, at 8.0 p.m. at the Newcastle Technical College, Tighes Hill. Listen to VK2AWX, the official station of the Hunter Branch, each Monday night on 14100 Kc. at 8.0 p.m. for further details.

Ernie 2FP has at last obtained an AT5. Doug 2ADS active on 144 Mc. Fred 2AGY busy in his new vocation with little time for Amateur Radio. Arch 2AWD has joined the Institute at last. Dave 2BZ active on all bands again. Harold 2AHA hopes to have the beam working early in 1956. Jim 2ZC still looking for time to put his gear in operation again. Bill 2XT and gang are all set for Woy Woy. Varley 2SF active on 40 mc. John 2XQ and Lionel 2CS active on the "gentlemen's band." Frank 2FX still busy with alterations to QTH. Ken 2KG should be active again shortly. Charlie 2ARV planning a new aerial. Nell 2XY has forgotten all about vest pocket beams. Lex 2AOR and Leo 2QB active on 20 mc. Jim 2AHT having trouble with his pan-adaptor. Ron 2ASJ hopes to be active again before the New Year.

The Hunter Branch takes this opportunity of wishing all members of the W.I.A. the Season's Greetings and the best of DX for '56.

VICTORIA

At the general meeting George 3AG gave a most interesting lecture on "Ancillary Equipment in both home stations and for field days." The lecture was illustrated with explanatory slides with a few very amusing ones here and there which brought about a good laugh from the members, particularly the final one, that of a very portly gentleman, i.e. a caricature of George himself. George delivered his lecture in a most unique manner; he had previously recorded it on tape and all he had to do was to switch on and sit back and listen

with the rest of the audience. Can't help feeling what a wonderful idea this would be for some of the members who have the knowledge to give very excellent lectures, but who lack the confidence to stand up in front of a large audience. Perhaps this might be a way for the members to benefit from some very interesting lectures that have hitherto been lost to them.

New members to the Institute were welcomed. They included 3X1, Harry Duggan, as a full member, Messrs. Johnson, McKellar, Wescott, Hohenfels, Thomson and Searby as Associates, and Messrs. Kayne and McDonell as Junior Associates. Members were all very pleased to welcome back Geoff Clarke, 3DP, ex-3PD, who has been abroad for the past three years.

The general meeting to be held on 7th December will take the form of a Xmas Break-up to which the XYLS and harmonics are cordially invited, the programme will be a selection of films suitable for the family.

From what I can get out of the OM the Annual Dinner seems to have been a huge success, but I'm feeling very peeved as he won't tell me any of the jokes. Max 3ZS' idea to run a dinner dance during next year, to which the XYLS will be allowed, seems a terrific idea to me. However, officially, here's the report on the dinner. On 4th November, members of the Victorian Division entertained at a Dinner, officers of the P.M.G.'s Department, the Defence Services and representatives of the radio trade and press. It was very capably organised by Max 3ZS on behalf of the Division and was extremely successful, over seventy members attending. This function is becoming increasingly popular and seems assured of a permanent place in our calendar of events. We hope to see even more members there next year. An official photo was taken and copies may be obtained by booking your order with either Max Hull at MU 2426 or the Victorian Division Office at MY 1087.

Ian 3ZAM, who recently attended a Scout Jamboree in Canada, has since travelled through Holland, Germany, Luxembourg and Belgium to London where he will be spending the coming two years in order to further his studies in electronics. He is considering taking a position in an electronics drawing office at Rugby. He has written home to say he has visited the Palace, the Tower and the Abbey, also the Radio Society of Great Britain where

they were all very interested in our activities here in VK. Their activities are much the same as ours, although the fox hunt is a completely new idea to them. Mobile work is a very popular past-time on all bands in G land and at a recent rally they had 75 mobile units attending.

The recent newly weds, the 3FO's, appear to be settled in at their new QTH at Maldon as Col has been heard several times on the air. However, other recent bridegroom, Jim 3ABA, doesn't seem to have much hope of getting back on the air as his new QTH has a very large garden to be laid out, so Jim will just have to get down to earth with the "pickle and shuv," but it is whispered that he looks longingly at his rotary clothes line.

Max 3ZS recently spent a holiday in VK5 where he was entertained by the President, Gordon 5XU, at a dinner, and at their Council meeting. He had a chat over 5W1 on the Sunday morning broadcast and visited 5DN Adelaide where George and five other Amateurs are employed. He also visited 5PS. Heck there is that Pansy in the VK3 notes again, he's always getting the wrong column, that bloke! —Phyl Mcur.

80 METRE TRANSMITTER HUNT

The 80 mc tx hunt was held in perfect sunny weather and Len 3LN, who hid the tx, chose what all the XYLS and harmonics thought was a most suitable spot. It was down at the beach at the far end of Altona. We must mention here that Laurie 3ALY, on arriving at the location, was very put out at Len's choice of location as he had found the identical spot himself a few weeks previously and was saving it up for the next time he would be hiding the tx. The antenna, which Len made very obvious just to help the chaps, was fed from a 300 ohm ribbon which passed under a root of the tree holding the antenna. At this point of passing under the root, a lead was taken off at right angles to the tx, power supply, battery, etc., which was completely buried in a box under the ground and camouflaged on top with a huge stump of an old tree and some replanted weeds. Back at the junction under the root, the 300 ohm line continued on to the beach, which after much meandering was terminated with a rock tied to the end, some four to five feet deep in the sand. Len's kids sure did a lot of digging that day.

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This, however, had the desired effect and most of the competitors followed the false lead to the rock in the sand. All were able to enjoy the fun as all competitors were on the site before the tx was actually located by 3ADU and 30J who dead-heated for first, closely followed by 3ZAD and 3ALY. In the 1055 W, Bob 30J won the privilege to hide the tx for the next hunt.

The hunt wound up with a picnic tea on the beach, which all seemed to enjoy, in order to prevent clashing with the Zone Convention at Colac, the November hunt was postponed until Sunday, 4th December, and of course there will not be a hunt on 11th December, as advertised in last month's mag. What about coming along to the next one, you'll find it a very pleasant afternoon out with a friendly crowd whose interests are the same as your own.

BI-MONTHLY SCRAMBLE, OCT. RESULTS

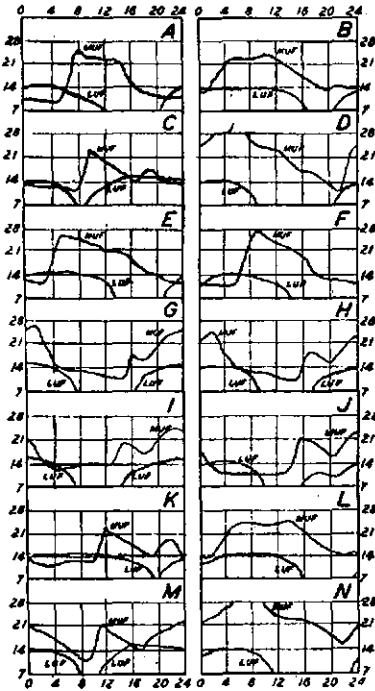
The first Bi-Monthly Victorian Scramble was held on 3rd October, 1955. A good number of Victorian Amateurs participated. The majority of contestants operated on the 7 and 14 Mc. bands. The Scramble was a complete success, although a larger number of logs would have been desirable.

The top scorer in Section C was 3AAP with 16 points, earned by contacts on 7, 14, 144 and 288 Mc. Section D was won by WIA-L3027 (3ZAT) who listened on 7 Mc. only.

Section C: 3AAP 16 points, 3ADW 15, 3ADL 14, 3ALY 13, 3YQ 12, 3YS 12, 3ZAE 10, 30J 8, 3ZBE 7. Section D: WIA-L3027 (3ZAT) 15 pts., WIA-L3015 14 pts. Check log: 3AHH. Checking: 3HE and 3AHH.

Transmitting Amateurs resident in the State of Victoria and Short Wave Listeners resident in the Commonwealth of Australia are reminded that the next Scramble will take place on 5th December, 1955. The rules can be found on page 12 of "A.R." September, 1955. Logs must reach the Divisional Contest Manager, W.I.A., Vic. Div., 191 Queen St., Melbourne, C.I., on or before 31st December, 1955.—3AHH.

PREDICTION CHART FOR DEC., '56



- A—Eastern Aus. to West. Europe—Short Route.
- B—Eastern Australia to South Africa.
- C—Eastern Aus. to West. Europe—Long Route.
- D—Eastern Australia to Far East.
- E—Eastern Australia to Mediterranean.
- F—Western Australia to Western Europe.
- G—Eastern Australia to North West U.S.A.
- H—Western Australia to North West U.S.A.
- I—East. Aus. to North East U.S.A.—Short Route.
- J—Western Australia to North East U.S.A.
- K—East Aus. to North East U.S.A.—Long Route.
- L—Western Australia to South Africa.
- M—Eastern Australia to Central America.
- N—Western Australia to Central America.

CENTRAL WESTERN ZONE

During the month we were sorry to lose Associate Member, David Goldsworthy from this zone. He has moved to Melbourne, so we wish him all the best of luck in his new sphere of work. In losing one member, we have also gained one in Charlie 3IB. He is on the air from Lubeck using his clamp tube modulated, band-switched rig. He has also re-built one of his old tx's using a break-in system, and he is very pleased with the advantage of break-in. A new call heard during the month was 3AJX, Alan, from Horsham. Very pleased to welcome you Alan, and hope you enjoy your "haming" days with us.

Called on 3AKP the other day. Keith has been very busy of late so has not been able to spend much time on the air. The storms which passed the Stawell area recently caused a fair amount of damage, and this has added to Keith's worries in keeping one of the major services in operation. Herb, 3NN, Merv, 3AFO and Jim 3DP, zone hook-up regulars, all report conditions improving on the DX bands, so guess those interested in DX will be populating those bands more often in the future.

SOUTH WESTERN ZONE

There is not very much at all this month from the zone other than Col 3FO was a visitor to Warrnambool a couple of weeks ago. He was accompanied by his XYL. He hopes to make the new QTH Castlemaine, after approx. 25 years in Bentleigh. All the chaps here in the zone wish you both every success and a happy life together. Harry 3XI is still very active on 20 mx. 3BQ has not been very active with radio owing to the pressure of work in the picture industry. Harry 3HF is coming back to his old style on 14 Mc. I hear him quite frequently working the States. 3NA is not very active as his profession does not allow him much freedom for radio. John 3AGD seems to be very keen on these boats, also Lin 3ARL was up at John's recently for a few days.

It is hoped that everyone had a good time at Colac at the Convention. Well chaps, as this will most likely be the last notes for 1955, I will wish all zone members and XYLS and all members of the W.I.A. a very Happy Xmas and a Prosperous New Year for 1956.

NORTH EASTERN ZONE

It is expected that Doug, soon to be VK1LJ, will be leaving with the party for Macquarie Island about the time these notes appear. Alan 3UI is constructing a mobile rig for the lower frequency bands to facilitate v.h.f. work. Keith 3JC and Harold, the former holder of the call 3FD, were met during a recent business trip. Stan 3AGT is still missing. Les 3ALE and his XYL are receiving congratulations on the birth of a daughter. Brian 3ASF, Bruce 3AGG and Johnny 3ACK have all been heard on 40 mx, but nothing has been heard of Ted 3A0B and the Command rig, nor how Alex 3AT is going on the colour photography.

Peter 3AFF is often quoted on this and that, and Murray 3HZ had his photograph in a recent issue of the provincial news-sheet, but our Secretary, Earle Scoones, has not been seen recently. Jan, our PA0 friend, must be still about, and John 3ZBG is believed to be on 2 mx in the city. Col 3WQ visited Vern 3AXW the other day for the first time since the latter was licensed. Those Associate "prospects" up there in Cobram are taking a promising and keen interest. Syd 3CI is doing well on 15 and 10 mx. Frank 3ZU is quiet and is not going away for a while yet. Jack 3AKC is, of course, still troubled with the 66,000v. noise.

Des 3BP heard on the air. Henry 3HP helping Ron 3AQG to get his rig going. Bill 3AWQ is now on the air, and Jim 3JK is constructing a mobile rig round a 1625 final. Ken 3KR is going quietly on the DX, while Jack 3PF and Vic 3ABX are very quiet. However Hugh 3AHP is having success on 20 mx with his "droning ground plane" antenna. George 3GD and Tom 3TS are probably well on to the 10 and 15 mx DX and it will be interesting to hear how Bill 3JP is going on 20 mx. Keith Cakebread missed the c.w. last exam., better luck next time OM. Jim Harrington would like to be at the next Convention when it comes around. From Des 3CO it is learned that a Radio Club may be formed at Puckapunyal soon. Lastly it is understood that Howard 3YV and Bruce 3QC have been side-tracked on to colour photography.

Amateurs in this North Eastern Zone wish Amateurs everywhere a Merry Christmas and a Prosperous New Year with interesting DX.

GEELONO AMATEUR RADIO CLUB

The visit of Earl WIDKC/MM, Radio Officer on the "Pioneer Bay," created an agreeable surprise. Many of the Victorian lads exchanged QSOs and QSLs. Earl addressed club members on t.v. and its place with Amateur

Radio transmission. The speaker was well versed in his subject, being for many years a field engineer with Westinghouse. We hope Earl can visit this location again in the near future.

Phil 3FG gave two interesting talks on telephone equipment. Soon Phil will be a resident in VK2 and we hope to hear him often, and wish him all the best in his new venture. Chas 3XH demonstrated the latest techniques in v.h.f. equipment at a visit recently. Later he and his XYL presented an excellent supper for visiting members.

The visit of Glen 3ZBJ was welcomed among the 2 mx fraternity. Glen's visit down here was long enough to convert some of the 40 and 80 mx boys to 2 mx. So Max 3BQ can hope to hear some signals soon.

QUEENSLAND

After quite a few months' absence, notes from the Brisbane area are again making an appearance in this issue. Bill 4YA, who started the year as Secretary, had to resign due to serious illness, and Keith 4DG had to resign as Chairman as his job took him north. Frank 4ZM took the chair and Jim 4PR the job of Secretary. As they work together, they took on the job of writing notes for "A.R." Being raw at Journalism, it was decided to keep the first effort to personal pars until more "clues" were obtained on the subject.

4XL, who was chairman and scribe last year, is taking a well earned rest (he is one of our bosses—4ZM and 4PR). He's fishing a few weeks away and we hope he catches some of the elusive ones. 4CC is having great success with cubical quads. Congrats, Clive, on topping VK4 in the R.D. Open. 4NR shifted to a new QTH and built a brand new rig, which sounds very nice. 4DG is expected back in Brisbane around February, '56. He can be heard on 14 Mc. when skip is OK. 4TT, with a new "ZL Special," seems to be getting out especially to GM. He speaks the language fluently. 4VJ is still bowling 'em over with a.s.b. and acting as a very welcome advisor to the new Chairman and Secretary.

4YA showed slight improvement, but is still very sick. All members hope Bill will be back with us soon. 4TN reports good daylight DX on 21 and 28 Mc. What is it, Aussie, your 590th QSO with HP3FL now? 4GE gave another interesting film show at the October general meeting. 4JO is an a.c. band man. How about coming down on the d.c. bands John 4FP had a trip down to VK2 recently in his "Jag," complete with mobile rig. 4HZ dropped in to the October general meeting. Jim is in temporary exile from Gympie. 4WD is back in his old QTH and we hope to hear his signals rocking the bands soon. 4EW hasn't been on for quite a while because he has the hi-fi bug. Oh for the pre-war days with music on the bands, Eddie.

Well, the notes may be a bit loose, but give your scribes a chance. Remember the Christmas "Do" at Anzac House on 17th December. Roll up one and all and make it a great success. A Merry Christmas and a Successful New Year and with the bands opening as they have been, it should be just that.—4ZM and 4PR.

MARYBOROUGH

4AI returned from Sydney where he visited shacks of 2BG and 2FM. Has since chased bugs out of his speech amp. and is trying a dynamic mike. Has also put together a 50 ohm standing wave bridge. 4BG also acquiring a bridge, 75 ohms, so some efficient antennae should soon be in operation. Ron is scratching up more grid drive for 21 Mc. operation. 4CB only listening until he gets time to put that tower up. Meantime rebuilding his exciter unit, using a Geloso v.f.o.—4BG.

TOWNSVILLE

Summer is certainly upon us with a vengeance as this month the temperature reached nearly 100 degrees and that is quite a high reading for Townsville. It has also brought in the usual QRN from dry storms in the vicinity, coupled with the dust on the insulators and transformers on the h.t. lines, due to local cement works. Especially as the evening dew falls and whacks the static discharge that takes place on all h.t. lines.

The October meeting took the form of a film evening and unfortunately the roll up was not as large as previously. The films were very good, especially the colour film on the "Atom."

Next meeting will be a film and lecture combined on "New Guinea."

Not much happening on the bands in this locality. 4EL heard in the "CQ" Contest on 21 Mc., but not much heard here due to QRN. 4WH on holidays and giving the bands a doing over, while waiting to go out to Barrier Reef with the fishing fleet and hoping to get a larger Tuna than the one on his special QSL card.

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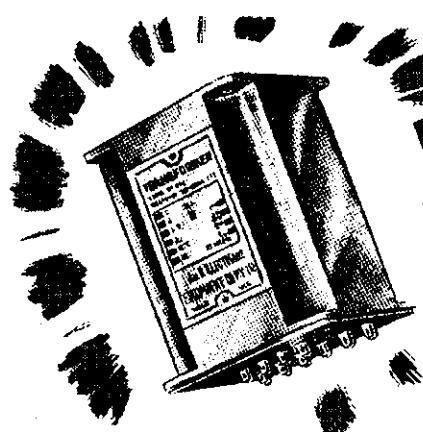
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4EV in constant touch with KA200 re variations in tuning the shortened beam. 4BE busy helping in the house and not much time for radio due to arrival of son and heir; congrats to Shirley and self, Allan. 4LR still playing with a beam and heard on 14 and 7 Mc.

No truth in the statement that John 4DK has been presented with a pair of large glass bulbs, ex-Japanese fishing nets, as hour glass timers for timers in one over of a QSO!!

Bill Hanson, R.A.A.F., ex-VSIFD, missed out sitting for last exam. due to Her Majesty requiring his services elsewhere. So Bill hopes the powers that be will allow him to sit for a special exam, and thus get on the air. Norm Prolege, of Andy 4BW, anxiously awaiting results of last exam. Quite a large gathering takes place on 7 Mc. at 1.30 p.m. on Tuesdays and Thursdays, and 10 a.m. on Sundays. Covers Tom Sarina to Atherton. Listen for the Black Crow in the background of 4BW's transmission, plus the fowl yam, that mike is certainly sensitive Andy.—4RW.

SOUTH AUSTRALIA

Well, fellers, you have no doubt heard of my recent terrifying experience. Some evenings ago, in search of copy for these notes, I inadvertently wandered into one of those low dives much frequented by certain officials of the W.I.A., to wit, presidents, secretaries, treasurers and taxation officials. After the third or fourth coffee (very different from the hospitality offered in VK3), I was hustled into a car and upon my awakening found myself on the high seas in a ten thousand tonner bound for Palembang. I realised that I had been "shanghaied." What was behind this dastardly act? Envy! With me out of the way the President was free to write the notes and Secretary able to assume the duties of Federal Councillor. What beauties! (My apologies to Edgar Wallace).

But with my sunny nature one finds compensation even in adversity. Apart from being forced to work such DX as Rome and Bolinas, I found life very pleasant. My brother officers, all Italians, were most sociable and introduced me to some strange but delightful dishes. I now pour oil on my "scran" with reckless abandon.

I could say more about this trip, but I can assure you that steaming under the flag of the "Flying Red Horse" has much to recommend it. Whilst it is true that travel is educational and tends to broaden the mind, it was with regret that I could not help the good Doctor with his problem in anatomy.

The monthly general meeting was well attended. Whilst the President and his minions were in attendance, I am afraid that the best part of the meeting was conducted by Messrs. Whitburn and Colman. These gentlemen gave their services, wit and sarcasm most freely, in disposing of a deceased member's equipment and surplus gear of other members. Dougal's remarks concerning the disposal of a deceased member's equipment should make us all pause and think. Ex-Naval types may remember the auctioning of "dead men's kit." Pieces of kit often brought fantastic prices as the money obtained went to the deceased's next of kin. I would like to suggest that we cease to regard "dead men's gear" as a source of cheap equipment. Let our tenders be generous and in keeping with value. The money raised may be needed by the kin's folk.

A letter from the Alice contained items of interest, one of which should perhaps have been handed on to our v.h.f. scribe, but there is little or no honor among amateur journalists. Tom's reply to enquiries as to when he will be on 50 Mc., "I dunno." It seems to me that Tom is working hard on the project, but is unable at the moment to make any firm statement as to the day and time.

A quotation from the "Australian Post Office" should indicate to all who read this publication that F.E., as the instrument of your Federal Council, has put in some sterling work over the past few years. With the support of members this good work can continue.

I cannot remember the Federal Contest Committee ever being properly introduced to members. This state of affairs should be corrected. I shall endeavour to do so without regard to their blushes. First let me say that they are all keen and able men. Correction: one is a passenger. Gordon Bowen, the Chairman, combines this duty with a dozen other activities, most of which are connected with Amateur Radio. The way this fellow makes use of his time is amazing. Reggie Harris, as Secretary, is an example of a square peg in a square hole. He just lays it up. His orderliness has to be seen to be believed. His letters are gems. The Contest Manager, Jim Vivian, does a job which very few could. His organising of log checking is excellent, but his real worth will not be evident for a year or so. His analysis and sug-

gestions for improving contests will, I am sure, bring him fame. Reg Galle has a flare for pointing out the weaknesses in our discussions, particularly concerning operating, whether on h.f. or v.h.f. I am the passenger.

At the special Council meeting, held to discuss emergency communications, we were honoured with the presence of the Federal Vice-President, Max Hull. He looks somewhat less harassed than when I saw him last. Perhaps V.P.'s have perks unknown to secretaries and scribes.

It was with deep regret that I learned of the passing of Harry Cooper, 6PC. I first met Harry in Darwin where he was Radio Officer in Kuru, a Department of Interior patrol vessel. He was a good friend and a good radio man.

Philosophy, psychiatry or whatever is not my line. In fact I am more at home with certain cronies drawing circles with a thumb nail dipped in beer than sitting in front of this mill. However, I can't stop but think that in these post-war years we Amateurs are losing, nay, have lost, our sense of humour. Until recently I thought this condition peculiar to Australia, but recent "GST" correspondence indicates that we are not alone. The Larson E. Rapp articles which I thought divine are being strongly objected to. Why? Can't the Amateur take a "leg-pull"? In this country such characters as the "Gremfin" were slapped down. An amusing little short "My XYL Says" no longer appears in our mag. Why? Are we that short on humour that we can't take a jibe at our signal or our operating habits? I think that wise old R.I. summed the situation up a year or so ago when he said, "You can call the Ham a heel, but don't mention his signal!"

My country correspondent, Stuart, of the Mount, advises that things are rather quiet in the South-east although the monthly meeting was well attended. 5CJ, alleged to be on holidays, was observed working on the shack. In between times, he has been heard on 7 Mc. and keeping skeds on 144 Mc. SZAG is another sked-keeper, but results are not reported. 5CH is building. Probably preparing against v.l. 5KU is not as active as of yore, but I understand that the storm damage has been repaired. 5FD is going all high-hat or hi-d or something. But he'll get tired of that. I have still to see a record changer to change the changer. 5MS apologies for his absence when 5XW and 3XI paid his shack a visit—bad luck fellows!

It was pleasing to receive a few lines from 5FY, outlining events in Woomera. The births and deaths columns in that town revealed that there are now two more bonny bouncing Amateurs operating under the calls of 6QW and 5AS. W3WJ was entertained by the Club and was able to say a few words to the States. 144 Mc. activities of this Club are on the move and when more definite news is to hand will have to make some arrangements for the details to be passed to our v.h.f. scribe.

This more or less rounds off our country coverage with thanks to those who contributed. I trust these fellows will continue the good work and accept mention in the notes as an acknowledgment.

Time staggers on, 'tis now midnight. I hope I have amused some of you, annoyed others, and that I will receive some blistering letters advising just how this column should be conducted. Include some material, and for those unable to write, phone UM 3855.—5JD.

WESTERN AUSTRALIA

The usual monthly meeting of the VK6 Division was held in the Technical School, Mounts Bay Road. Roger 6RK gave the lecture for the evening. His subject, Distance Measuring Equipment, proved to be extremely interesting. He brought a piece of v.h.f. D.M.E. equipment—the tx and rx used in aircraft—for inspection. Several 2 mx addicts present were observed casting covetous glances at same! Some lively discussion took place during the meeting re the proposed changes in the 3 mx and 2 mx bands. Further information is being sought from F.E.

My predecessor, Harry 6WZ, is in the process of settling into his new QTH at Albany. Best of luck in your new enterprise Harry. Hope to hear you on the air again soon—as an Amateur, we mean!

Two calls have re-appeared on the air recently after long absences—Bill 6WP made an appearance on 80 mx and Bill 6DJ has been heard working 40 mx c.w. on several occasions. Band Activity—40 mx: With the opening up of 20 mx, there is little 80 mx activity, although regular appearances are made by yours truly, 6LG and 6TR. 6MO also pops up occasionally. 40 mx: This band has been open to VK3 and VK2 till 2100 almost every night and one or two VK6s have been heard working East. There is usually a fair amount of activity between VK6s on Sunday morning and afternoon.

20 mx: Some good DX has been coming through and quite a few VK6s have been heard making the most of it, working America, Africa, Asia and Europe nightly. Your scribe still sheds an occasional tear at losing a ZP5 the other night!

15 mx: Here also some very good DX is coming through, particularly from South and Central America. 6RU, 6HK and 6BO and others have been heard working.

Don 6HK is jubilant at working an HK on 15 mx. Nice going Don. News has come through that this State was defeated by VK5 in the R.D. Contest. Congrats VK5, but we warn you that we really intend to do something about the matter next year.

You are reminded that the Annual Social event of the Division will be held in December. Full details will be given in the News and in the Bulletin.

During December, a 2 mx fox hunt is being run by the V.h.f. Group and a cordial invitation to all VK6s who have equipment has been issued. Details may be obtained from 6BO or 6ZAA (Phone L 1208).

That's the lot for this month, chaps. You are reminded that any news may be passed to me via Phone M 1130.

TASMANIA

Len 7LE turned up with quite an excellent idea last month when he took over the notes for me, and I can't think of anyone better to send the summonses and libel suits to than 7LE. May it please your ham-ships to continue on in that direction. Anyway, thanks once again Len for taking over at such short notice.

The November general meeting took place in the Clubrooms on the 2nd of the month and some twenty members attended. Ted 7FJ presided, with Secretary Bill Tait standing by on the frequency. The lecture, by Professor Baxter, was entitled "Atomic Energy," and was replayed from tape.

A suggestion was put forward for consideration, that in view of the fact that Australia is to be the venue of the next Olympic Games, a message should be sent to Mount Olympus in Greece, from its namesake in Tasmania.

Another suggestion was that a competition be held for the construction of portable equipment along specified standardised lines. Such a competition should produce equipment which would be of great service for emergency conditions, and the committee has these matters in hand. (Should produce some technical articles for the magazine.—Sub-Editor.)

A social evening is also contemplated for 14th December and doubtless there will be more information on this anon.

Chris 7KW has now settled in at Colac. In the hope that you may glance at the VK7 notes Chris, we take this opportunity of wishing you all the very best in your new sphere of activity, and our thanks go to you for all your efforts on behalf of Amateur Radio in Tasmania. Our loss is VK3's gain.

Len 7LD, having sold his business, hopes to have more time for Amateur Radio in the future, and is now busy rebuilding, so it should not be too long now before he is back on the air again. Good work, Len. We can well do with another hand if we are ever to clasp that R.D. Trophy lovingly to our breast again. There is another addition to the 7RX establishment—now, now, come, come. Whatever made you think of that. It's a lovely new D.X.C.C. Certificate, and we congratulate you most heartily Keith. Of course, Keith, it would also give me great pleasure to give you a write-up on the subject you thought of at first—yes—and the same to you.

I believe that photography is getting the upper hand with Bill 7AK on Flinders Island. It has been suggested that such outposts of the Empire are not complete without a 2 mx rig, Bill, so what about it? It should look very effective with our expensive camera sitting on top of it.

Taken all round, I think perhaps Amateur Radio is being neglected somewhat, because congratulations are in order for Associate Rex Belbin, on the arrival of a baby son. You might as well get your ticket Rex, because, believe you me, you're going to get QRM regardless. Owing to pressure of work, Bob 7AF has had to relinquish his position as Councillor, and his resignation has been regretfully accepted. Over a period of years, as Councillor, he has rendered great service to the Institute, and we thank you Bob for your efforts on our behalf. Tom 7FM has been appointed Councillor in Bob's place.

I understand that the Walking and Rescue Club were very satisfied with our communication effort in their recent exercise, and would like the Institute to participate in the organisation of another emergency exercise.

Len 7LE has succumbed to the enchantment of galactic noise, and recommends it as a

complete change from the usual run of sponsored programme. I rather gather though, Len, that the QSL position is not the best at the moment.—7JD.

NORTHERN ZONE

A few are getting ready for the opening of the old 5 mx band once again. 7BQ and 7LZ have constructed beams and rigs are ready. 7PF was seen putting up a similar beam recently. 7RK looking very prosperous with a new car and 7LZ is now mobile. 7PH and 7LZ have been giving 21 and 14 Mc. DX bands a thorough working and results have been satisfactory. 7RL has moved from Stanley on the North-West Coast and has been on the air from King's Meadows, Launceston. 7EJ was heard on the air last week—the first time for many months. 7GM has completed his rebuild.

7WI has been fairly consistent the last few Sunday mornings during the broadcast. 7RB has been spending his spare moments making recordings of local artists for broadcasting. 7TE has shown renewed interest in the bands and purchased a converter from England. Some local Amateurs had a taste of t.v. inasmuch that interference has been caused to local taxi services in the 80 Mc. band—getting pretty close to those t.v. channels. Have not heard our old member, 7XW, now 3AXG, on the bands as yet. Doug 3FH has been to Flinders Island again and nearly missed out on the phone last week.

HAMADS

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INDEX TO VOLUME 23—1955

AERIALS

| | | |
|---|------|-----|
| Antenna for the S.W.L. | July | p.6 |
| Construction of a Cheap Beam | Jun. | p.7 |
| Extended Lazy H Antenna | Oct. | p.5 |
| Having Fun with "Skeleton Slots" | Apr. | p.3 |
| Let's Build a Tower | Aug. | p.5 |
| Lightning Protection for the Transmitting Antenna | Nov. | p.7 |
| More About "Skelton Slots" | Oct. | p.9 |
| "Skeleton Slot" Antenna | Apr. | p.2 |
| Twin-Lead "Sprigs" | Apr. | p.9 |

AUDIO FREQUENCY EQUIPMENT AND DESIGN

| | | |
|--|------|-----|
| 120 Watts of Audio Without Driving Power | Aug. | p.2 |
|--|------|-----|

CONTEST RESULTS

| | | |
|---|------|------|
| National Field Day, 1955 | Sep. | p.12 |
| Ross A. Hull Memorial V.h.f. Contest, 1954-55 | July | p.12 |
| 1954 VK-ZL DX Contest | Jun. | p.11 |
| 1955 Remembrance Day Contest Results | Dec. | p.12 |

DISPOSALS EQUIPMENT

| | | |
|---|------|-----|
| Command Conversions for Five Bands | Jan. | p.2 |
| Command Receiver Roundup .. | Feb. | p.2 |
| Modification of MN28 Receivers | July | p.5 |
| Triple Conversion Amateur Band Receiver | Sep. | p.8 |

MEASUREMENTS AND TEST EQUIPMENT

| | | |
|--|------|-----|
| Circuit to Measure Capacity and Inductance | Sep. | p.7 |
| Practical Vacuum Tube Voltmeter | Aug. | p.7 |
| 144 Mc. Heterodyne Frequency Meter | Feb. | p.7 |

MISCELLANEOUS

| | | |
|-------------------------------------|------|------|
| Accurate Electronic Timer | July | p.7 |
| Amateur Radioteletype | Aug. | p.17 |
| Are You Complacent About TVI? | Oct. | p.15 |

A TRANSMITTER WITH LOW HARMONIC OUTPUT

(Continued from Page 11)

fers. The writer took the different filament windings off and extended the primary winding to nearly twice the number of turns. So we now have the 2 x 500v. winding on the primary side of the modulator and the new 2 x 220v. winding on the p.a. stage side. The result is that just the correct ratio was achieved to get never more than 95% modulation if the p.a. and modulator valves are connected to the same plate voltage.

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In Fig. 4 we see some switch positions for "c.w. or phone" operation to switch the filaments of all modulator amplifier valves and the scope off when working c.w. The "T or R" switch disconnects also the B plus of the receiver from the r.f. stages to prevent overloading. Here, too, the 1 megohm grid resistor of the r.f. stages limits grid current of the first receiver valve. Due to stray capacities around the transmitter antenna relay the co-ax antenna cable will still conduct some transmitter r.f. to the receiver. All wiring of modulator stages is done with shielded wire.

| | | |
|--|------|------|
| Bi-monthly Victorian Scramble | Sep. | p.12 |
| Denmark Pays a Tribute to VK1EG | Apr. | p.13 |
| DX Countries of the World | Jan. | p.9 |
| Economical Relay Operation | Feb. | p.5 |
| Handy Index to "AR" Technical Articles—1945-55 | Dec. | p.6 |
| Have You Ever Gone Portable? | Jun. | p.8 |
| Hints and Kinks— | | |
| Feeder Spreaders | Mar. | p.5 |
| Valve Sockets for EF50s | Mar. | p.5 |
| Neutralising 6J6s | Mar. | p.5 |
| Weatherproofed Ribbon Feedline | Apr. | p.9 |
| 24 Volt Relays on 12 Volts | Apr. | p.9 |
| Stable Receiver Oscillator | Apr. | p.15 |
| Simple Code Practice Oscillator | Jun. | p.15 |
| Introduction to Two Metres | Aug. | p.10 |
| Max Howden, VK3BQ | Apr. | p.11 |
| Olympic Games Communication Demonstration | Nov. | p.15 |
| Pan Pacific Scout Jamboree 1955-56 | Dec. | p.10 |
| Science in Antarctica | Dec. | p.2 |
| Silicon Xtal Noise Generator | Apr. | p.7 |
| Television Station Operators' Certificate of Proficiency | Dec. | p.14 |
| Trade Reviews— | | |
| Geloso Pi-Coupler Tank Coil | Oct. | p.9 |
| Philips Miniature I.F. Transformer, Type 4260 | Mar. | p.7 |
| Plated Crystals | Dec. | p.18 |
| Transmitter-Receiver Voice Operated Control Unit | Oct. | p.10 |
| Use of Electronic Valves | Nov. | p.9 |
| VK3 Awards for 100 V.h.f. Contacts | Nov. | p.15 |
| Who will be on the Air when TV and TVI is on? | Sep. | p.2 |
| Worked All VK Call Areas (W.A.V.K.C.A.) Award | May | p.12 |
| Writing an Article for "Amateur Radio" | Feb. | p.9 |
| 6146 Beam Power Amplifier Data | Aug. | p.12 |

RECEIVING

| | | |
|---|------|------|
| Band Spreading and All That! | Oct. | p.7 |
| Command Receiver Roundup .. | Feb. | p.2 |
| Discussion of Receiver Performance | May | p.2 |
| Low Noise R.F. Stage for 144 Mc. | Apr. | p.5 |
| Modification of MN28 Receivers | July | p.5 |
| Simple S Meter | Jan. | p.7 |
| S Meter Circuit | Mar. | p.13 |
| Triple Conversion Amateur Band Receiver | Sep. | p.8 |
| V.h.f. Automatic Tuner | Nov. | p.5 |
| 7 Mc. Mobile Converter | Sep. | p.7 |

TELEVISION

| | | |
|--|------|-----|
| Frequency Channels for Television Stations | Sep. | p.5 |
| Wobblers—Sweep Generators | Mar. | p.2 |

TRANSMITTING

| | | |
|--|------|------|
| Anti TVI Filters for the Amateur Transmitter | Nov. | p.10 |
| Command Conversions for Five Bands | Jan. | p.2 |
| Transmitter With Low Harmonic Output— | | |
| Part One | Oct. | p.2 |
| Part Two | Nov. | p.2 |
| Part Three | Dec. | p.11 |
| Wideband Audio Phase Shift Networks, Part I. | Jun. | p.2 |
| Part II. | July | p.3 |

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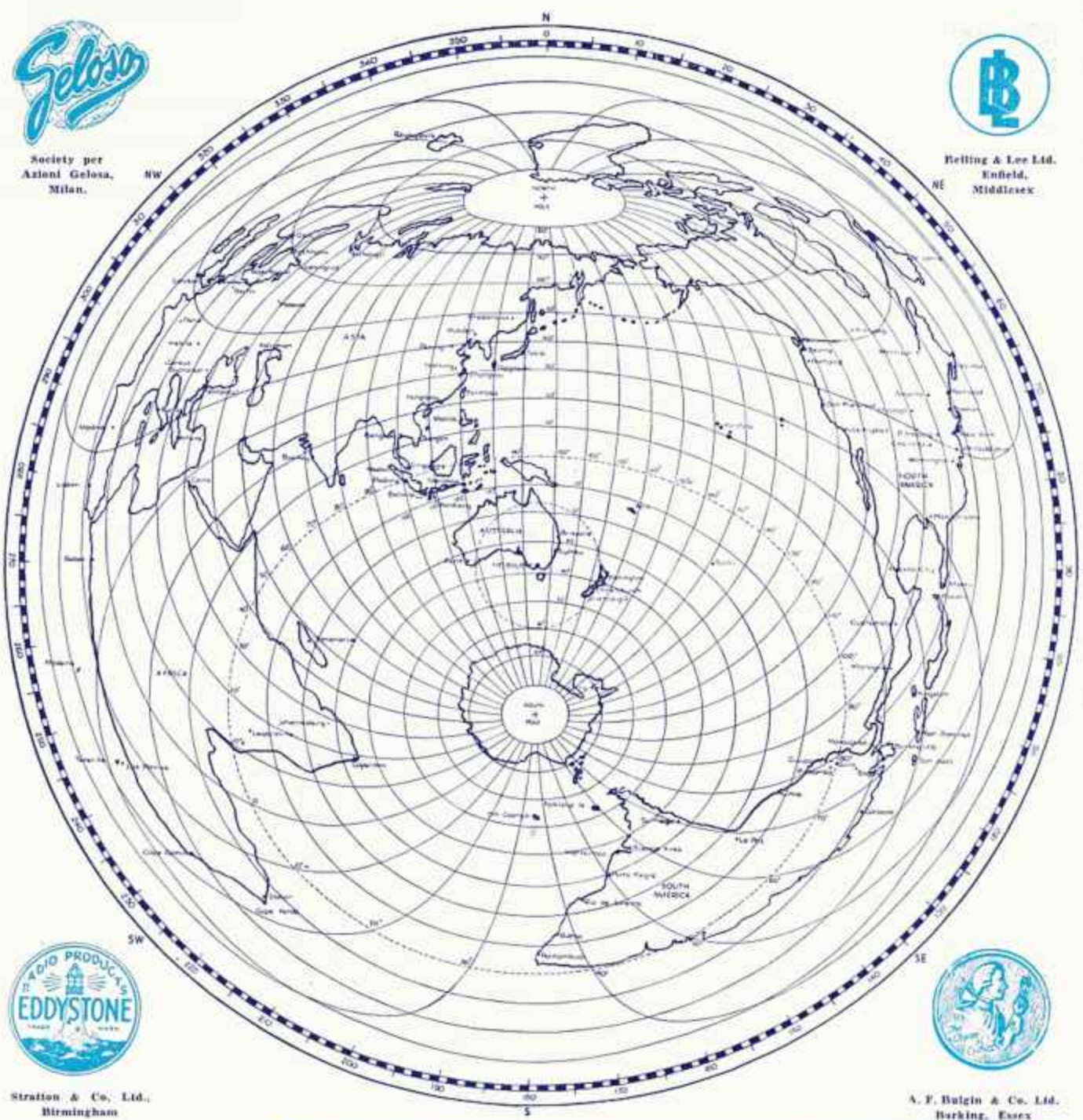
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