

THE WIRELESS INSTITUTE

OF AUSTRALIA

MONTHLY BULLETIN.

Tasmanian Division.

MAY 1961.

Box 851J.
~~HOBART~~.O.
HOBART.
Price 6d.

PRESIDENT.
Mr. T. Allen.
VK7AL.

TREASURER.
Mr. C. Harrisson.
VK7CH.

SECRETARY.
Mr. K. Millin.
VK7KA.

Registered at G.P.O. Hobart, for transmission by post as a periodical.

GENERAL MEETING.

The next General Meeting of the Tasmanian Division will be held at the Club Rooms, 147 Liverpool St. on Wednesday, May 3rd., at 8.00 hrs.

LECTURE.

The Lecture this month will be given by Mr. Paul Edwards, of the Tasmanian University, and is entitled "The Practical Use of Transistors". With transistors making their appearance in more and more equipment these days, this will be a good opportunity to find out a bit more concerning those mysterious little tubes with some wires coming out of the bottom (or the top). VISITORS WILL BE WELCOME.

SUBSCRIPTIONS.

If your Subscription had not been received by April 20th. the amount owing appears below.

@@@
@ @
@ @
@ @
@@@

If no amount has been shown, your Sub. has been received.
THANK YOU.

Subscriptions and Donations received from 17/3/61 to 20/4/61.

VK's 7AB? 7KC, 7FJ? 7TT, 7JB, 7TE, 7CA, 7NC, 7SF, 8RY, 7YH, 7MY, 7RX, 7AL, 7EC, 7EJ, 7BT, 7MS, 7LZ, 7MX, 7PA, 7BJ, 7OM, 7CH, 7DW, 7MK, 7DZ, 7ML, 7LE, 7CF, 7LR, 7AF, 7DJ, 7RK, 7MZ, 7PJ, 7ZRJ, 7ZAI, 7ZAA, 7ZAK, 7ZAJ, 7ZBE, 7ZAU, 7ZAV, 7ZAX, 7ZAG, 7ZAZ.

Messrs. H.A. Wright, J.M. Kerr, F. Pieniacki, G. Crompton, R? Bradshaw, A. Bedelph, L. Schultz, L. Jacobson, G.J. Harper, S.H. Boyd, A.L. Beaumont, R.K. Jaeger, O.C. Winter, G. Long, M.J. Dawes, D.F. Ford, H. Chesterman, D. Allen, G. Ranft, J.H. Schuringa, M.R. Bethune.

V. H. F. GROUP.

The next Meeting of the V.H.F. Group will be held on May 17th. next.

New stations on the V.H.F. bands are Brian Jones, VK7ZAZ, who is going well on 50.18 Mc/s. and David Berry who intends to operate on 288 Mc/s. We welcome these chaps and hope to hear a lot of them.

Two projects came up for discussion at the last Meeting:-

1.

A satellite tracking installation which the V.H.F. Group hopes to set up in the near future, our chief consultant will be Paul Edwards, VK7ZAJ. This will work in conjunction with the local Moonwatch Group of the Astronomical Society. There are, of course, plenty of opportunities in this field, including bouncing from balloons (a series of these will be placed in orbit by the U.S. in the near future, and Project OSCAR - a satellite with a 144 Mc/s beacon followed by a 144 Mc/s Amateur repeating satellite. Initial tracking will probably be done on 108.3 Mc/s.

2.

A two-metre transceiver design and kit is being prepared which, we hope, will enable more to make the acquaintance of this band. This should

enable us to have on hand, for the use of the Institute if required, a number of identical complete 2 metre fixed/portable stations which could be used for emergencies, field days, Regattas, Boy Scouts etc. as well as cross-town communication. We'll probably also be able to supply these ready built. However, more of that later.

V.H.F. hounds, incidentally, did quite well in the recent Fox Hunt VK7ZAI first in and VK7ZAK second. The 2 metre fox was heard as far away as New Norfolk. We'd like some more hounds next time!

(Signed) Reg Bennett VK7ZAO.

S.W.L. GROUP.

The next Meeting of this Group will be held at the Club Rooms on Wednesday May 10th. Mike Jenner hopes to be able to supply enough material in the near future whereby the S.W.L. Group will be able to have some space in this Bulletin. In the meantime please take note that there is no extra sub. required to belong to any of the Groups within the Institute, all that you have to do is to address your enquiries to the Group Secretaries and PLEASE enclose a stamped addressed envelope for the reply. For the S.W.L. Group the Secretary is Mr. M. Jenner, 20 Church St. New Norfolk and for the V.H.F. Group Mr. D. Thorne 308 Park St. New Town. Hobart.

NORTH WESTERN ZONE.

The next Meeting of this Zone will be held on Tuesday, May 2nd. at the Burnie Fire Brigade Headquarters, Burnie, at 1945 hrs. This Meeting will be a Social meeting, the main topic being the handing over of the Mobile units and Base Station which have been built by Members of this Zone. Supper will be provided and a good evening is assured. It is understood that there will be quite a few of the gang from Devonport and Ulverstone going mobile on the way over.

A Transmitter hunt was held last Sunday, April 16th. Only three stations plus the fox participated, very poorly attended. Looks like something will have to be done to get the N.W. Zone more active again.

(Signed) D. M. Slowan, N.W. Zone Sec.

This Zone is to be congratulated on the work which they have done in constructing the radio equipment for the Burnie Fire Brigade. A really fine effort by all concerned.

OFFICER FOR THE YEAR 1961-62.

At the Council Meeting held last Thursday, April 20th. the following Officers were elected.

PRESIDENT.	Mr. T. Allen.	VK7AL.
VICE-PRESIDENTS.	Mr. C. Harrisson.	VK7CH.
	Mr. L. Edwards.	VK7LE.
	Mr. D. Watson.	VK7DW.
SECRETARY.	Mr. K. Millin.	VK7KA.
TREASURER?	Mr. C. Harrisson.	VK7CH.

To save the wear and tear on the stencil, the typewriter and my fingers, you can include the above List in the one contained in last month's Bulletin. Thank YOU.

ANNUAL GENERAL MEETING AND DINNER.

This event is over for another year and was quite a success in everything but the financial side. This was caused by the fact that there were ten acceptances for the Dinner from Members who eventually did not arrive and did not pay their Dinner Sub. either. One of the reasons we asked for early notification of those intending to be present was to finalize catering arrangements. Which should be fairly obvious. Next Dinner SUBS. PAYABLE IN ADVANCE. NO SUB. → NO DINNER.

IF YOU DID NOT PAY YOUR DINNER SUB. BUT NOTIFIED YOUR INTENTION OF BEING PRESENT? YOU CAN STILL SEND THE SUB. THANKS.

SUNDAY BROADCASTS.

In future the Sunday Broadcasts will be re-transmitted on 2.672 Mc. through station VK7CT. Terry will appreciate reports on reception.

COUNCIL MEETING.

The Next Council Meeting will be held at the residence of
Mr. C. Harrison. COUNCIL MEMBERS PLEASE NOTE.

Material for inclusion in the June Bulletin must be in the hands of the
Secretary on or before May 20th. next. DON'T FORGET.

FOR SALE.

2 only Command Receivers. 3-6 Mc/s and 6-9 Mc/s. Both of these have been
converted to 12 volt heaters and a gain control and B.F.O. has been added
to each. There is a common power supply and speaker for same, plus a set
(new) spare valves. Price £15 the lot. Apply Mr. K. Johnson, VK7RX
34 Tower Road, New Town.

TECHNICAL.

Some members may have heard VK7CH operating mobile marine on the yacht
"Moorina" on the 3.5 and 7 Mc/s bands and this brief description of the rig
used may be of interest.

Circuit line-up is:

Receiver. R.F. 6AK5, Converter 6AN7, I.F. 6BH6, BFO. OC45, Det. OA85, A.F.
6C4 Output 6AM5.

Transmitter: Crystal Osc. 6C4, P.A. 6V6. Speech Amp. 6AU6, Mod. 6BW6.

Power Supply: Two OA211 rectifiers, V6066 vibrator.

Recharging the battery is a problem and the rather mixed collec-
tion of valves, diodes and transistor are the result of efforts to minimize
battery drain whilst using parts on hand if possible. Receiver heater
consumption is 905 ma. and transmitter 600 ma. on CW and 1.35 amps on Phone.

Receiver:

Built on a $8\frac{1}{2}$ " x 6" x 2" chassis with a $8\frac{1}{2}$ " x $4\frac{3}{4}$ " panel on which
there is just room for a 3" speaker, National vernier bandset and band-
spread dials, phone jack, BFO on/off switch, volume control and band switch.

The 7 Mc. band covers approximately 4.5 to 7.3 Mc. enabling
reception also on the small ships frequency 6280, out stations 5355 and
limited coast stations 4335. The 3.5 Mc. band is tuned the lazy man's way
additional capacity being switched in which gives a range of approximately
3.5 to 4.3 Mc/s. and includes the 4095 fishing boat frequency. The BFO
transistor is powered from a tap on the cathode resistor of the output
stage.

Transmitter.

Chassis is $8\frac{1}{2}$ " x 6" x $1\frac{1}{2}$ " with the panel the same size as the
receiver. On this there are the mike jack, mike gain control, phone/CW/Net
switch, heater switch, crystal sockets, (3 for different type holders)
key jack, PA plate meter, pea lamp RF indicator, PA tune, band switch and
antenna load switch.

The PA tank coil also covers the 6280 Mc/s frequency for which
a small ships licence is held for contacts with VIH. For 3.5 Mc/s extra
capacity is switched in. With an eye on battery consumption heaters of the
speech amplifier and modulator are disconnected whilst on CW and all trans-
mitter heaters can be disconnected when the receiver only is wanted. Input
is about 7 watts on CW and slightly less on phone.

Power Supply.

This is built in a 6"x5"x $6\frac{3}{4}$ " metal box, on the front of which
there is the send/receive switch and power lead socket. A combination AC/DC
transformer is used, with vibrator for 6 volt operation, and silicon
diode rectifiers. Changing from 6 volts DC to 240 Volt AC input is simply
a matter of changing input leads, the necessary connections being effected
in the 6 pin plugs and socket.

The three units are assembled with the receiver to the left,
transmitter on the right, both mounted vertically, and the power supply
between. These fit in a wooden case $15\frac{1}{2}$ " x $9\frac{1}{2}$ " x $8\frac{1}{2}$ ". The lid is removable
and holds log book, pencil and spare crystals and pea lamp. Key and battery
leads are carried in the space above the power supply.

Antenna.

The back stay, which is over 50' long (For the landlubbers the

stay that runs from the top of the mast to the stern or blunt end of the ship!) has been insulated and a lead of about 20' runs under the deck to the cabin where the rig is used.

Results have been excellent, the best DX being W on 7 Mc/s. From observations made during many regular skeds with VK7OM from various locations, ranging from Port Davey on the West to the Schoutens on the East Coast, 3.5 Mc/s has proved the most reliable during both daylight and dark and very seldom was a sked missed owing to conditions. Most States and ZL have been worked on 3.5 Mc/s on CW and the phone has been reported from ZL.

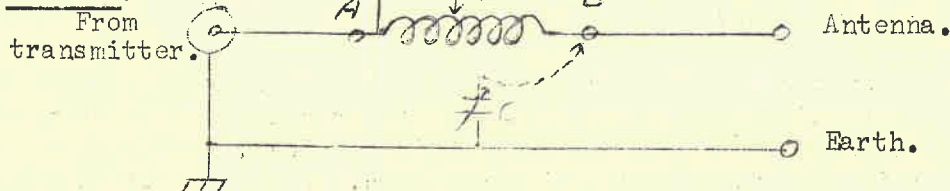
The rig is also used on National Field Day's, as a stand-by at home, and was used mobile on our trip to Ulverstone for last year's Annual Meeting.

ANTENNA COUPLER FOR RANDOM LENGTHS OF WIRE.

The pi-coupler has the reputation of being able to load anything but in its usual form this is not so and it gives best results when it feeds into a non-reactive line of the correct impedance. In some cases it may give the appearance of loading, but the power is being dissipated in the coupler and not radiated.

The coupler to be described is useful for field days, for mobile use, and even for home use when it is desired to use a random length of wire.

Circuit.



C Approx. 150 pf. Max. spacing according to power used.

L 30 turns 2" diameter spaced 10 turns/inch. 16 g. tinned copper.

A clip lead is used for shunting out unused portion of coil. Another clip lead connects the condenser to either the input or the output of the coil.

Operation.

If a good short earth is available then it should be used, this may be useful in keeping the chassis of the transmitter "cool" to RF with some lengths of antenna. To tune up some indicator of RF will be required. This could be a RF ammeter of suitable range. If the length of the antenna is such that a current maximum is near the coupler a pea lamp can be connected in series with the antenna or across a short length of it, depending on the power. If a voltage maximum is near the coupler then a neon bulb can be hung on the output terminal. In any case the important thing is that for any given length of wire and frequency maximum indication on this device will indicate maximum power in the antenna. This will not apply if the indicator is connected further back than point "B".

TUNING.

Resonate the final and alternately adjust C and the tap on L for maximum output indication for a given DC power input, keeping the final in resonance. If no sense can be obtained transfer the condenser to the input of the coil and try again.

As a guide the following number of turns is somewhere near right.

Wire length.	Frequency.					Turns.
	3.5	7	14	21	28	
100 ft.	$18\frac{1}{2}$	$7\frac{1}{2}$	$6\frac{1}{2}$	$4\frac{1}{2}$	$2\frac{1}{2}$	"
90 "	"	$9\frac{1}{2}$	$4\frac{1}{2}$	"	"	"
80 "	"	$11\frac{1}{2}$	$3\frac{1}{2}$ a	"	"	"
70 "	"	$15\frac{1}{2}$	$5\frac{1}{2}$ a	"	"	"
60 "	"	$21\frac{1}{2}$	$8\frac{1}{2}$ a	"	"	"
50 "	"	$15\frac{1}{2}$	$6\frac{1}{2}$ a	"	"	"
40 "	"	$11\frac{1}{2}$	$5\frac{1}{2}$ a	"	"	"
30 "	$26\frac{1}{2}$	$2\frac{1}{2}$ a	$6\frac{1}{2}$	"	"	"
20 "	"	$7\frac{1}{2}$	$6\frac{1}{2}$	"	"	"

a indicates condenser connected to input of coil.

This unit would be quite useful also used in conjunction with the filter described in last month's Bulletin.

All for this month.