

THE WIRELESS INSTITUTE — OF AUSTRALIA —

TASMANIAN DIVISION

BOX 851J, G.P.O., HOBART.

JANUARY 1963

MONTHLY BULLETIN

Price 6d

PRESIDENT

Mr. T. Allen VK7AL

TREASURER

Mr. C. Harrison 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 will be held in the Club Room on WEDNESDAY, 1st January 1963 at 2000 hours. A lecture is being arranged.

NORTHERN ZONE.

The next meeting will be held at 73 George St., Launceston, on FRIDAY 11th January 1963 at 2000 hours. There is important business to discuss and all members of the Zone are asked to make a special effort to be present.

NORTH WESTERN ZONE.

I have not received any information as to when the next meeting will be held, but as the usual night is New Year's Day it might be a good idea to check up before going along on that date.

COUNCIL MEETING.

The next Council Meeting will be held on MONDAY, 21st January at the residence of Mr. C. Harrison VK7CH, 88 Giblin St., Lenah Valley.

LIBRARY

The Library Sub-Committee have done a good job in renovating the book case and are now ready for business. We have some new publications on order, but would particularly like to have handbooks on surplus gear to build up a reference library. If anyone has any that they would care to donate to the Division it would be much appreciated.

R. D. CONTEST.

Congratulations to the VK6 Division in winning this year's contest. I'm afraid that we did not put up a very impressive performance, but will do better next year. And certainly the two northern Zones put it all over the South this time.

HAMFEST.

Mr. L. Jensen VK7LJ has very kindly presented the Institute with an enlarged copy of a photograph of all the licensed amateurs at the Hamfest, and has very generously offered to supply us with 6½" x 4¼" prints at cost, all profit to go to Club funds. If you would like one send 2s/6d (plus postage) to the Secretary by January 21st. This is an excellent photo of what is certainly the largest group of VK7s ever assembled together.

NEW MEMBERS.

We welcome Joy Batchler VK7YL back as a member, and are also pleased to have Messrs. J. R. Gumley and P. J. Goss as new associate members.

NOISE

Enclosed with this Bulletin is a Noise Report Form. Anyone troubled with electrical interference (and few of us aren't) are asked to complete this form and forward it to Mr. E. Beard, 148 Derwent Ave., Lindisfarne, or to the Secretary. The Noise sub-committee will then collate the information and pass it on to the right quarters.

CRYSTAL ETCHING.

The ammonium bifluoride is now to hand and those who ordered can collect at the next meeting. Cost is 4s/- each. There is still some available if anyone else is interested at this price, but bring along a small plastic container please.

PORTABLE OPERATION.

Most of the VK7 crystal controlled portable/mobile rigs have crystals on 3590 kc/s and this has become more or less the standard frequency for portable working. It is expected that several stations will be active during the next couple of months, so keep a lookout on that frequency. Weather and other circumstances permitting VK7CH, with VK7KA as assistant op., will be mobile marine from the South West and Port Davey for a couple of weeks from Christmas, and would welcome contacts. Regular sked times are 0800, 1200 and 1800 hours on either 3515 (c.w.) or 3590 (phone). I hear that VK7YY will also be spending a few weeks at his country residence at Bond Bay, Port Davey, in January and will have his portable along.

R.S.G.B. HANDBOOK.

The order has been despatched for these books, and to simplify matters two copies will be posted direct from London to the members mentioned below and it would be appreciated if they would pass on the extra copy to the other member shown. Those whose names do not appear on this list will receive theirs by post.

Addressed to:

Allen,	T.A.
Beard,	E.
Berry,	D.
Brown,	J.
Connor,	T.
Cordell,	L.
D'Emden,	G.
Dore,	V.F.
Edwards,	L.W.
Emmett,	R.K.
Frith,	P.D.
Kelly,	D.H.
Macey,	J.E.
Millin,	K.E.
Morrisby,	A.H.
Nichols,	I.
Tanner,	W.E.
Wilson,	R.K.

Extra copy for:

Secretary
Aschman, G.
McGinniss, M.
Johns, D. H.
Spiegel, C.
Hancock, H.
Pieniacki, F.
Kelly, K. M.
Jensen, L. R.
Rogers, R.
Self.
Byrne, A.E.
Self
Library.
Secretary
Secretary
Frith, P.D.
Durkin, L.

CONTINUED USE OF 50 - 52 Mc/s BAND.

Federal Executive advise that conditional use of this segment until December 31 1963 has been granted by the Department, subject to the condition that the band will be vacated at the expiration of 14 days notice at any time before the 31 December 1963 if found desirable.

The attention of amateurs is drawn to the possibility of second harmonics of signals from stations operating on the 50-52 mc/s band causing interference to reception of television programs in Channels 4 and 5 (94-101 mc/s and 101-108 mc/s respectively). In the event of such interference being caused it may become necessary to review the position at short notice.

OPERATING PROCEDURES.

Reports from observers on the amateur bands indicate a general deterioration of the standard of operating among amateurs generally. This includes failure to announce call signs within specified periods; use of "10/4" code which is not recognised in this country, and the general behaviour is below the standard expected of amateurs.

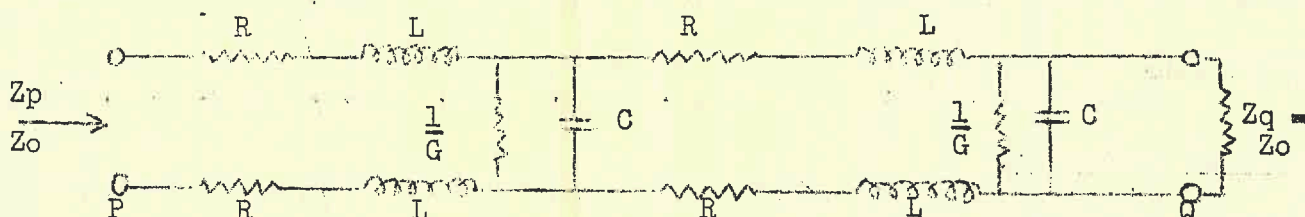
Council urges every active member to take a good look at his operating procedure, and to do his bit to bring about an all round improvement.

TECH NICAL.

Facts on Feedlines. by G. C. Johnston B.Sc.

At one stage or another every person with a serious interest in radio is confronted with the problem of "how to match their feedline into their new antenna". Most handbooks provide data on input impedances of various types of antennae but few, unfortunately, give details of feedlines beyond saying that coax. of x ohms characteristic impedance is necessary. As many have found the cost of purchase of this "x ohms" feedline is often out of proportion with that of the project in hand. It is in an attempt to alleviate the worry and distress symptoms so often seen upon such a discovery whether made by the XYL or OM himself, that this short note is being written. Perhaps it will assist you to use that piece of nondescript coax. you have in your junkbox to good effect.

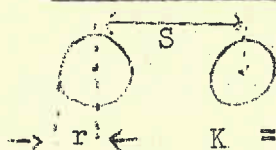
The conductors of a feeder cable possess distributed self-resistance (R, ohms per metre), self inductance (L, henries per metre), shunt capacitance (C, farads per metre) and shunt conductance (G, mhos per metre). Thus the equivalent circuit of a feeder cable may be considered as being represented by the circuit below :



The feeder exhibits a characteristic impedance of (Z_0) ohms at P when the termination at Q is also of Z_0 ohms impedance. Thus when input and output impedances (i.e. at P and Q respectively) are matched then $Z_0 = \sqrt{\frac{(R \text{ plus } i W c)}{(G \text{ plus } i W l)}}$ which approximates closely to $\sqrt{L/C}$ at R.F.

Since the physical dimensions of the feeder govern the magnitude of L and C these dimensions will also govern its characteristic impedance (Z_0). Characteristic impedances of two popular types of feeder may be simply determined by the formulae shown below :

(a) Twin lead (unshielded)



$$Z_0 = \frac{276}{\sqrt{K}} \log_{10} \frac{S}{r}$$

$K = 1$ for air, 2.3 for polyethylene

(b) Coaxial.



$$Z_0 = \frac{138}{\sqrt{K}} \log_{10} \frac{S}{r}$$

$K = 1$ for air, 2.3 for polyethylene

Generally speaking coaxial cable covers the range 50 to 250 ohms and twin lead 200 - 500 ohms. Two devices for matching a feeder with an impedance somewhere in this range to the desired output impedance are :

(a) $\frac{1}{4}$ wave transformer. The procedure here is to insert a $\frac{1}{4}$ wave section of cable of impedance Z_0 , $= \sqrt{Z_q Z_o}$ between the feeder of impedance Z_o and the desired output of impedance Z_q .

(b) "Stub match"

When $x = \frac{\lambda}{2\pi} \tan^{-1} \sqrt{Z_q/Z_o}$ metres or feet from our feedpoint

Z_x comprises $R = Z_o$ paralleled by a reactance plus/minus $i X$. A stub is teed in at this point x and stub length and hence reactance is adjusted (by a shorting bar) to cancel the plus/minus $i X$ on the line at x. A standing wave indicator is invaluable here.

Of the two methods the first is the easiest to my mind as it is likely to work "first up" without hours of adjustment.

FEDERAL COUNCILLOR.

As one only nomination was received, from Mr. E. J. Cruise VK7EJ, the retiring Federal Councillor, he is declared re-elected unopposed.

CALL BOOKS.

These are not obtainable through the Division this year, but they are available through newsagents. The Avalon Newsagency, Elizabeth St., Hobart, have a limited supply but as stocks cannot be replenished best get in early if you want one.

DISPOSALS.

The first shipment from the Victorian Division has been nearly all sold. Another lot has since been received and a further list will be included with next month's Bulletin.

CLUB ROOM FUND.

Don't forget we still want scrap copper, brass and lead - also rags. These can all be sold quite profitably to help the fund along.

RECEIPTS.

Receipts on hand : 609 G. Ranft. 618 R. Jones. 20 R.M. Barker. 47 A. Hubbard

FEDERAL CONVENTION.

You are reminded that items for the Agenda should be forwarded to the Federal Councillor as soon as possible.

On behalf of the President and Council I would like to take this opportunity of wishing all members, their wives and families, a very happy Christmas, and good health and happiness in the coming year.

73

C. Harrison VK7CH
for Bulletin Committee

WIRELESS INSTITUTE OF AUSTRALIA
Tasmanian Division

- - - - -

NOISE REPORT FORM

Name Call Sign (if any)

Address

Date on which the noise was last heard Time

GENERAL DESCRIPTION OF NOISE

WHEN IS NOISE HEARD? (a) Continuously (b) Intermittently

If noise is intermittently heard is it heard :

(a) Frequently Occasionally Rarely

(b) In fine weather wet weather windy weather

or in what particular conditions

(c) In day time night time week days

week ends any time

or at what particular time

FREQUENCIES ON WHICH THE NOISE IS HEARD (Give strength)

On Broadcast band On 1.8 mc/s on 3.5 on 7 mc

on 14 mc on 28 mc on 56 mc on 144 mc

NATURE

Does the noise appear to be associated with rotating machinery?

Or does it appear to be associated with leakage of electricity over insulators transformers etc?

What high voltage AC feeders or transformers are located near you? (Attach sketch)

.

AREA AFFECTED. Over what area can the noise be heard? (Show on sketch)

.

Names and addresses of others who are affected by the noise

.

.

SUSPECTED SOURCE OF NOISE

What evidence have you to substantiate this suspicion?

.

ANY OTHER RELEVANT INFORMATION (e.g. tests made, results etc.)

.

.

Signed

Return this form to Mr. E. Beard, 148 Derwent Ave., Lindisfarne, or to the Secretary, Box 851J G.P.O., Hobart.

