

QRM

BULLETIN ISSUED BY THE NORTHERN
BRANCHES OF THE WIRELESS INSTITUTE
OF AUSTRALIA, TAS. DIVISION.

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TAS. 7250

MAY 1975
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MEETINGS

May 3rd Northern Branch Executive Meeting
May 10th Northern Branch Civil Defence Rooms
Bourke Street 8 p.m.
May 13th North-West Branch, Lakins Hall, Ulverstone.
Y.R.C.S.

May 3rd
& Radio Instructions Class Lakins Hall
May 17th Ulverstone 2p.m.

&
May 31st

May 10th
& Kings Meadows High School 10 a.m.
May 24th

		<u>Contests</u>
May 3rd-4th	Bermuda	CW
May 10th	World Telecomm	phone
May 11th	Worked all Britain	CW
May 17th	World Telecomm	CW

SUBSCRIPTIONS

Subscriptions to the Northern Branch are now due. The cost this year will be \$2.50 as decided by motion at the last meeting. If you wish to continue getting Q.R.M. then please pay by sending your subscription to P.O. Box 1010 Launceston or by giving it to the treasurer at the next meeting.

Editorial

The announcement last Sunday that the W.J.A. broadcast may soon be originated on the 432 ~~MF2~~ band in A.T.V. was indeed pleasing and it may bring an important "first" for the Tasmanian Zone. I, for one, am most pleased to see that there are still those amongst us that are not "appliance operators" and are experimenting with new and old methods of communications as amateurs have a lot to give in this field. It is perhaps worthy of note that when filling out the application for an amateur license one has to supply details of the type of experimentation that, as an amateur, one is going to carry out.

This announcement also indirectly raises another question: that is on what band/bands should the broadcast be originated? There have been in the past comments as to the quality of the 80 metre signal when the broadcast is originated on other than this band. 80 metres has always been the primary frequency for statewide broadcasting as it is the only frequency used which can reliably transmit across the whole state and the quality does therefore need to be of a high standard. On the other hand, originating the broadcast on V.H.F. frequencies does allow Z calls to act as originating stations and thus gives others a chance at collecting and giving the news. Different people each week does give variety to the type of news and audio that one hears and surely this is a good thing but poor quality does reflect badly on the Institute. One suggestion has been that Z calls could originate the broadcast on 80 metres from the QTH of full calls and perhaps this suggestion may merit discussion by branches and/or council. I have originated the broadcast myself on 2 metres channel 48 and as a result both favourable and unfavourable reports were made. Some of these reports were of a conflicting nature as they are on many callbacks, but, as requested in the bulletin, perhaps a test by the originating station together with relay stations prior to the broadcast may help to overcome some of the problems reported on by callback stations. Any reader who feels he/she would like to comment on this or any other problem only has to send a letter to the editor and it will be published or perhaps you may feel it is better to discuss it at your next branch meeting.

Graeme VK7ZGG Editor.

Extract from Northern Zone Minutes 11/2/55

"We had much pleasure in welcoming
Mr. Ed Bovis ex G3EXD who is now in Launceston".

Ed VK7HE.

Northern Branch

The April meeting of the Northern Branch was held on the 11th at Kings Meadows High School. Present were two visitors Terry Hays and Bill VK3ZLK. Peter VK7Pf reported on the problem one N.W. branch member has been having while operating on 52.525 MHz and explained the complex situation involved.

A Library exhibition on amateur radio has been arranged at the Launceston Regional Library during the 9th - 21st June inclusive. Norman VK7NR is in charge of this and would appreciate and equipment including old units which could be put on display. It is also hoped to have some equipment operational.

The increase of branch levies was discussed at great length and finally a motion was passed to the effect that levies for the ensuing twelve months would be \$2.50. These levies are now due and it would be appreciated if they could be paid at the next meeting which is to be held at the Civil Defense rooms in Bourk street - members will be able to examine the proposed new rooms at first hand. Members holding Northern branch magazines are asked to return them to the secretary as soon as possible so that a library may be set up to enable all members to make use of them.

John VK7JV has been elected clubroom finance officer so, chaps, start digging deep.

The meeting then adjourned to enable some most informative films to be shown thanks to Wally VK7ZWX.

Notes as told to VK7ZGG by Ed VK7HE

Summary of costs of running the Northern Branch last financial year as extracted from the Balance sheet.

<u>Repeats.</u>	Power Costs:	\$67
	Licence:	\$25
	Call sign VK7NZ:	\$12
	Cost of running QRM:	\$70
	P.O. Box:	\$8
	Hiring of Rooms:	\$20
	Cost of Suppers:	\$25
	Total	<u>\$219</u>

This does not include donations to AMSAT etc.

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Divisional Annual General Meeting Notes

Well, the divisional AGM has come and gone again. It was held this year in Launceston at the Adult Education Rooms in High Street. While 33 attended some felt there could have been greater attendances from the various Branches.

It appeared everyone was eager to get going so previous minutes, correspondence, reports and financial statements were all tabled and accepted.

The Constitution amendments were passed, also the Merit Award, with some minor alterations.

Since the position of Patron had fallen vacant, Jack Mike VK7AG was duly elected.

The following Councillors were elected for the ensuing twelve months: VK7AK, KK, PF, ZGJ, FB, ZAQ and ZBY.

Southern members were concerned with safekeeping of magazines they had accumulated. It was resolved that for any libraries set up, Council would be the custodian while actual Branches handled and looked after the books.

Some aged divisional equipment held in the Southern Branch is to be disposed of except for the 7MHz equipment.

The N.W. representatives agreed to look into their Branch A.G.M. timing to bring it into line with other Branches.

Finally several members praised the efforts of the Broadcast Officers for the consistency and quality of the broadcasts.

The members retired at 1700hrs to brace themselves for the dinner to follow.

I think all who attended the dinner at the Village Motel thoroughly enjoyed themselves. Several made use of the dance floor and the lively orchestra, while one local identity burst into the "Gay Gordons" or was it a "Quickstep" or a "Foxtrot?" Unfortunately it was on the table, which nearly capsized performer and all.

Nevertheless all ended well.

73 Bob 72RF.

T.V. TRANSLATOR FREQUENCIES

Round Hill, Burnie	National Channel 4	Commercial Channel 10
Table Cape	1	5A
St. Helens	0	7
Willis Hill Stanley	8	6
Tier Hill Smithton	4	10

A.B.C. BROADCAST TRANSLATOR FREQUENCIES

St. Helens	1570	KHZ
Fingal	1160	KHZ

HF notes for April 1975

Due to the earlier sunsets now with us listening times on the higher HF bands have been somewhat limited. However, 20m has been reasonably good with DX available most days until about 1100z when weak CW can be worked. 15m has been giving the usual openings to the North and the Americas.

Some weak signals have been heard on 10m from time to time, and perhaps more calls would provide some activity.

40 and 80m have been good for DX into all continents after sunset and around dawn.

On 20m the following have been worked with good signals. BV2B, 8P6AH, FB8YD, 9H3R, LA1NG, 4Z4HF, KV4AA, plus the usual European and South American stations between 0800-1200z.

VEØNWF M/M on HMCS "cootenay" is active in the VS6/JA area and looking for Vk's after exercising with the "Hobart" etc.

Jack VK7AG has heard strong signals from Europe on 80m around dusk with the ZL's working them with ease.

40m has provided good DX especially on CW which with some searching can still provide WAC each day.

73' VK7BC

These stations have been heard and worked using (as Frank says) a rather poor G5RV so its obvious a sophisticated aerial is not required to work DX stations (Editor.)

LOOKING BACK.

Extract from Northern Zone Minutes 22 Mar. 1963.

"The President Mr. D. Kelly 7DK then presented his report of the years progress and had pleasure in reporting that membership had increased by 6 to 16. Also that during the year 4 members had gained their limited AOCF (T. Bevis C. Barnard G. Ranft R. Grant) and he hoped they would carry on and pass the code to gain a full certificate."

REMEMBER

The northern branch is now the Tasmanian Agent for VICOM INTERNATIONAL Pty Ltd. This company through our agency sells amateur radio equipment to amateurs. See lists and prices of equipment elsewhere in this issue and in last months issue.

LADIES PAGELetter via Editor.

Hi Girls,

Firstly a vote of appreciation for 7 JV John and XYL Joy for all the work that they did for the last 4 years in putting together news for the boys.

Secondly, congratulations to 7 ZGG Graeme, also wishing you luck.

Thirdly, I wonder what has happened to all of us. We carried on no end about not having a page of our own in Q.R.M. As the wives showed an interest in the monthly news letter, we asked for a section for ourselves. Our wish was granted.

Well, this went well for a very short while, and gradually fizzled. Why? This is International Woman's Year, so let's put a little of I.W.Y. into Q.R.M. and prove that we are interested when it comes to doing a little of the written chatter ourselves.

I know a lot of you have young demanding families, and sometimes we haven't enough hours in the day. Don't show the O.Ms we blow hot and cold, they'll think what they say about women is true. Also, there is a new Editor to help get started. There must be some of us with a recipe or two, or maybe some house hold hints, maybe just some plain old news. I'll try if 7 ZGG will let me, but I can't do it on my own. Please help.

Cheers and 73's
VK 7 NR's XYL Ann.

LOOKING BACK.

Extract from Northern Zone Minutes 5 Nov 1959.

"A discussion took place as to where the future meetings be held. Whether now that the numbers had increased, to endeavour to find a fixed place. No suitable place was suggested and taking in consideration the cost of some places it was held over for further discussion. Col Wright suggested that to ease the burden on the hosts that a "Plate" or basket be provided."

PLEASE HELP FILL THIS SPACE NEXT MONTH

Dear Editor. Q.R.M.

VK7ZGG who ever you are.

For any new comers to the world of Amateur Radio as I and many others are and will be, it is very exasperating listening to Broadcasts, Reading A.R and QRM and seeing names such as VK7xYZ Ken and not knowing really who is being referred to. I, like others have been trying since last November to obtain a call book but as yet with no success. Perhaps a new book is not available or I am trying in the wrong place (Perhaps WIA is not the right place) but as yet with no success in obtaining a call book.

What do others think of the idea of including sur-names with call sign and christian names in articles. I would suggest that it would only be necessary to put sur-names on the first appearance of name in each article. Another alternative would be to provide an index of all names in the magazine. I prefer the first.

Food for thought!

Signed
Vk7ZBL Brian.

P.S. If you have not got an up-to date call book or don't know who I am then you will now know what I am trying to say.

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1 Belcom Liner 2 2 metre S.S.B. Rig
20 watts P.E.I. Solid state unit with extra crystals.
Price \$230
Danny Apted VK7ZDA Phone L'ton 316643
65 Brougham St. West Launceston 7250

1 Eddystone EC10 Communications Receiver
Five bands covers 540 kc-30mHZ
Transistorised and runs off batteries
Easily adapted to A.C. operation. Price \$150 o.n.o.
Graeme Reardon VK7ZGG Phone L'ton 469455
2 Trent St Youngtown 7250

TOWNSVILLE PACIFIC FESTIVAL CONTEST 1975

This year the contest will be held on Saturday 15th
June 1975 from 0200 GMT to 1400 GMT.

VHF Notes.

The only openings on 6 metres that I have in my Log. Book occurred on Sat. 30th March for about 30 minutes, then again on April 1st very briefly when Kevin worked VK4 ZJB and I worked VK2 ZLU in five minutes, signals were very weak with deep QSB. On the Saturday opening I only received one 5/9 signal report, the others were around the 5/7 mark. In all, seven VK4's were worked, three of them being new stations on the air. Activity has been very spasmodic but you will usually find most stations have their receiver tuned to 52.050 MHz. So if you intend calling CQ 6 metres try 52.050 first.

Two metres has provided some activity in the last week when a large high was present across Bass Strait. Repeated contacts to VK3 were not uncommon, we even had a VK3 in Victoria reply to the callback following the Broadcast.

On 13/4/1975 Kevin VK7ZAH worked VK3ARC, VK3ZNJ, VK3AQR, VK3ZLW, VK3ZHY. I did not check with Danny 7ZDA but I am sure he would have worked a few more stations as well.

73's Until next month.

Joe VK7ZGJ

Sorry there are no N.W. branch notes this month.

Hope to have some for the next issue of Q.R.M.

Standing-Wave Ratio

The standing-wave ratio is an important quantity in impedance measurements (q.u.) and particularly in micro wave measurements (q.u.) at ultra-high frequencies and above, the moving-probe slotted line is the most commonly used method of impedance measurement. Unless the impedance of a circuit is exactly equal to that of the transmission line to which it is connected, the transmitted wave is partially reflected through the transmission line to the generator. An interference pattern is created as a result of the periodic addition and cancellation of the incident and reflected waves. This is called a standing wave because it is a spatially fixed variation of amplitude along the line. An electrical standing wave is similar to standing waves of sound in a closed chamber. The ratio of the Voltage peaks to the voltage valleys is called Voltage Standing Wave Ratio (V.S.W.R.).

The ratio T of the reflected wave to the incident wave voltage is related to the load impedance and to the V.S.W.R. :-r:

$$\frac{Z_1}{Z_0} = \frac{1-T}{1+T} ; r = \frac{1+T}{1-T} ; \frac{Z_1}{Z_0} = \frac{1}{r}$$

Slotted-line impedance meters are usually constructed with a section of transmission line of the desired type of line (two-wire, coaxial, strip line, wave guide) and desired Z_0 , a coupling means to the E field along the direction of propagation, a moveable probe to sample the E field at any point in the line, and a scale to ascertain the position of the probe. The probe is set to a point of maximum E, and then to a point of minimum E. The ratio of E max to E min is r, the V.S.W.R. The position of E min is measured as seen from the relationship between Z and T, Z is readily obtained. A Smith Chart (q.u.) is frequently used to facilitate the determination of Z from a V.S.W.R. measurement.

The wave pattern in the slotted section will depend on the load. If the load is a short circuit, the standing wave patterns are as in Fig 1: the voltage is zero at the load and a maximum at a position $\lambda/4$ away. The minimum voltage points repeat every $\lambda/2$ along the slotted section. Similarly, the maxima repeat at $\lambda/2$ intervals, occurring at $\lambda/4, 3\lambda/4, 5\lambda/4$ along the line starting from the load. It follows that the voltage and impedance minima as well as their maxima are coincidental.

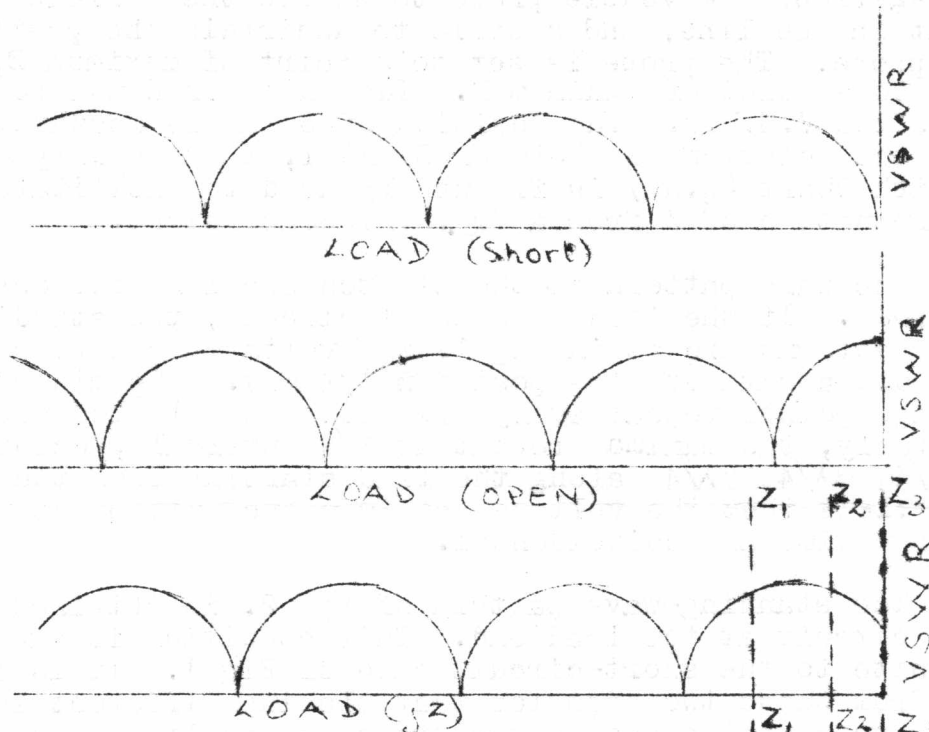
The standing-wave pattern of Fig 2. is obtained with an open circuit at the load end. This condition is exactly opposite to the short-circuit case of Fig 1. It is apparent from these two examples that placing different load impedances at the end of the transmission line produces different standing-wave patterns, with the voltage at the load varying anywhere between zero and maximum. The dashed lines $Z_1, -Z_1, Z_2, -Z_2$ and $Z_3, -Z_3$ in Fig 3 represent three different conditions of load impedance and the corresponding voltage values at the load.

It is not necessary (nor desirable) to measure these terminal voltages. From the wave-length, it is quite easy to determine the position of any of these lines in terms of wave-length by measuring the distance from the load to the nearest minimum on the standing-wave pattern.

A reflectometer measures V.S.W.R. without providing information to determine the phase of the load impedance. Frequently in measurements phase is unimportant, as many devices are specified to have a maximum V.S.W.R. with no limitation on phase. A reflectometer consists of two directional couplers (q.u.) one sampling the incident wave, the other sampling the reflected wave. The two outputs are detected and the ratio determined, either by measurement and computation, or directly by a ratio meter calibrated in T or in V.S.W.R.

Although the reflectometer method is simple, there are several important sources of error. First, the directional couplers must have a great discrimination between incident and reflected waves (called directivity) in waveguide, directional couplers commonly have 40db directivity, corresponding to an error of ± 0.01 in reflection coefficient. Coaxial line directional couplers rarely have directivity greater than 30 or 35db, which correspond to errors of ± 0.3 and ± 0.02 in T, respectively.

Second, the relative coupling of the incident and reverse wave couplers must be known accurately. Errors in relative coupling of 0.2db result in an error in T of 2.3 per cent.



"From Encyclopedia of Electronics -- written by Stuart Casper HARDA microwave corp."

Shown below is additional equipment available from VICOM INTERNATIONAL through their Tasmanian agents W.I.A. Northern Branch.	
SEIWA SV-250 incl 5 chs (1/4/50)	210.00
SEIWA SU-710 incl 1 ch 455.00 Mhz	295.00
D60 Frequency Counter incl 2Mx Prescaler	360.00
RB-145 PRE-AMP 144-146 Mhz Mast Head	32.00
RB-147 PRE-AMP 146-148 Mhz Mast Head	32.00
DIGITAL CLOCK 24or12HR. (electronic)	39.00
TRIO VT106 F.E.T. V.O.M.	85.00
TRIO AG202A Audio Generator	94.00
TRIO 75mm Scope	170.00
TRIO SG402 RF Generator	76.00
TRIO CS1557 Scope (DC-10Mhz)	340.00
YAESU FTV 650 (6Mx Transverter)	105.00
TRIO TV506 (5Mx Transverter)	212.00
TRIO TV502 (2Mx Transverter)	243.00
ATLAS 215	570.00
ATLAS 210	570.00
ATLAS 210/M	555.00
ATLAS POWER SUPPLY	150.00
ATLAS AR200 POWER SUPPLY	96.00
ATLAS MOBILE MOUNT	47.00
ATLAS MOBILE BRACKET	6.00
ME 11B SWR bridge/Power Meter (3-150Mhz)	22.00
ME 11N SWR Bridge	31.00
ME-UA VHF POWER METER	69.00
ROYCE 2-105 27Mhz Whip (AS-27B1)	23.00
AS-GM GUTTER CLAMPS	7.50
CX-2A (A) 500HM Coax Switch 2pos	21.00
CX-6A (A) 500HM Coax Switch 6pos	54.00
CX-6A (B) 700HM Coax Switch 6pos	54.00
MIDY 111N MULTIBAND TRAP DIPOLE	31.00
LISTENER-1 ANTENNA	14.90
BTF -1 BALANCED FEEDER	12.00
AL-48 DXN 40/80 DIPOLE TRAP	31.00
AL-24 DXN 20/40 DIPOLE TRAP	24.00
A-4VPN 40M DIPOLE	24.00
A-8VPN 80M DIPOLE	26.50
BL-50A BALUNS 1:1 50ohm	14.90
BL-70A BALUNS 1:1 70ohm	14.90
AS-3L BALUNS 1:1 50ohm	23.00
SH-7E LIGHTNING ARRESTOR	14.90
- P1259/30239 ADAPTOR	1.88

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