

QRM

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

P.O. BOX 1010
LAUNCESTON
TAS. 7250.

July 1975
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PRICE 40c

MEETINGS

July 8th North West Branch Lakins Hall Ulverstone 8pm.
July 11th Northern Branch Civil Defense Rooms
Bourke Street 8pm.
Followed by Films.

Y.R.C.S. MEETINGS.

July 12th
&
July 26th Kings Meadows High School 10am.
July 12th
&
July 26th Lakins Hall Ulverstone 2pm.

CONTENTS

July 12th-13th ARRL Open CD CW
July 19th-20th ARRL Open CD Phone
July 26th-28th Country Hunters CW
August 9th-10th European DX CW
August 15th-16th R.D Contest

July 1975

Q.R.M.

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Office Bearers for North West Branch for 1975.

President:	Ian Ellings	VK7ZIE
Vice Presidents:	Max Ives	VK7MX
	Brian Lord	VK7ZBL
	Graham Rand	VK7ZAQ
Treasurer:	Max Ives	VK7MX
Secretary:	Graham Rand	VK7HX
Activities Committee:	Ian Ellings	VK7ZIE
	Bob Simpson	VK7ZJS
	S. Redford	VK7SF
Y.R.C.S Co-ordinator:	Graham Rand	VK7ZAQ
Broadcast Co-ordinator:	Tony Bedelph	VK7AX
Branch Correspondent:	Graham Rand	VK7ZAQ
Equipment Officer:	Adrian Sheriff	VK7ZAT
WICEN Co-ordinator:	Bob Simpson	VK7ZJS
Q.S.L. Officer:	Harold Hancock	VK7HZ
Beacon Committee:	Wayne Gibson	
	Ian Ellings	
	Adrian Sheriff	
	Graham Rand	

CHANGE OF EQUIPMENT STORE OFFICER FOR
NORTHERN BRANCH

DUE TO KEVIN VK7ZAH HAVING UNDERTAKEN A TWELVE MONTH COURSE AND REQUIRING TIME TO STUDY, THE EQUIPMENT STORE WAS BEEN TAKEN OVER BY DANNY APTEO.

65 BROUGHAM ST.
WEST LAUNCESTON

PHONE: 316643

Danny will be moving shortly, his new address will be notified as soon as the shift occurs so listen to the W.I.A. broadcast weekly.

Northern Branch Notes

The June meeting of the W.I.A. Northern branch was held on Friday 13th at the Bourke St Civil Defence rooms. The meeting opened at 8.15 p.m. with visitors 7ZIE, 7ZAT and 7ZAQ from the north west in attendance, Also present were Stuart Beveridge (a new member) and Mr Finlay McClean.

The treasurers report showed a bank balance of \$2035-42 with the sales for the month amounting to \$1427-51 and accounts to \$1287-15 -- quite a business!

A special vote of thanks to all those who helped 7NR and 7KK with the exhibition at the Library and specially to those who helped man the exhibition.

Robin 7RH has asked that any persons with ideas for a VK7 CW net get in contact with him. CW classes are being held at YRCS meetings in preparation for Novice licencing.

The proposed extensions to the Civil Defence rooms were discussed and Ed 7HE reports that we may have concrete proposals on which to vote at the next meeting. The proposed bye-laws were discussed and passed by the meeting in 4½ minutes (a record surely).

The business was dispersed with by 9.15 p.m. and a most interesting lecture on "The Strange Story of False Teeth" was given by Mr Finlay McClean - (who wants to sell their teeth for 2 guineas?). What interesting lecture will Wally 7ZWX think up next?

The repeater has been turning itself off again lately and it would be appreciated if members could let 7PF (or 7ZRF or 72BY) know if they find it off so it can be turned on again with minimum delay.

73's Graeme VK7ZGG.

TO ALL NORTHERN BRANCH MEMBERS

So that the Northern Branch Executive can better provide for the social side of the Branch, it needs to know the feelings of the members on this matter.

Below are a few suggestions on what could be organised. Please indicate your preference by numbering the indicated choices:

- 1) Cabaret, to possibly co-incide with a suitable artist.
- 2) Film evening.
- 3) All family involvement outing - e.g. trip to Ross Deer Park.
- 4) Members to make their own entertainment.
- 5) Present social side of Branch activities suitable.
- 6) Own choice.....

When completed, please pass your views on to Ed Hewens VK7HE, either personally, or by posting to Ed P.O. Box 1010, Launceston. If you prefer, bring it along to the next meeting.

73, Brian VK7ZBY

North West Branch Notes.

Our last meeting was our Annual General Meeting and as a result we have a new set of officers. Ian 7ZIE is now President yours truly is secretary and Max is our new Treasurer. (I knew Max couldn't stay out of the executive for long).

There has been a lot of discussion around the Branch about the proposed \$4.00 call on members to be made by Federal. In general members are not too hostile about the \$4.00 but are worried about the possibility of even larger future calls being made and want to know the cause of the Institute being in this financial mess. Some members had strong feelings on the matter but alas these were not strong enough to prompt a trip to the Special General Meeting in Launceston. If you think this is a dig fellas you are dead right. Thanks to those who did turn up.

On to the upcoming meetings.....At the next meeting a technical talk will be given on the theory and practical application of 'operational amplifiers'. So all you members who are a bit rusty on the subject let us see you there. The meeting after that (August) we are having a 'Junk Night', so dig out your 'Junkus Misclani' and bring it along. A small percentage of course will go to the branch coffers. So lets have a good role up. Remember, the Branch is under new management and is rearing to go. See you at Lakins Hall.

73's VK7ZAQ

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73, Brian VK7ZBY

LADIES PAGE

USE BUTTONS FOR

EYES

To all you sewing fans who like fun things.

Hi Girls,

this isn't a picture of anyone we know,
 although some of us may know someone it's like.

No, actually this is Ferdinand the Floppy Frog.

I borrowed him from Moira, 7GW Gordon's

wife. He can be made from any material

just as long as they aren't too stiff.

Sew him up and fill him with bird seed.

Don't use too much seed though because

he won't flop. I think that he can be a

fascinating little creature, and is ideal

for children of all ages (including adults).

Little Freddy has been known to be
 used for all sorts of things, including a door-
 stop, but mainly as a toy for a kiddy.

Make sure you give him a good seam
 allowance, because he may burst with use. In this
 day and age is it any wonder.

Have fun with him.

73's

7NR's, XYL

ANN.

Cut along unbroken line.

Machine along dotted line.

NORTH WEST BRANCH - TASMANIAN DIVISION.WIRELESS INSTITUTE OF AUSTRALIA.ANNUAL PRESIDENT'S REPORT 1974/75.

It does indeed give me much pleasure to report on the Branch's activities for the last ten months. For those persons unaware, members of this branch resolved to shorten this and next year to allow our next year ending to coincide with other branches and Divisional Annual General Meetings i.e. approximately March-April.

HAM. FEST.

The 1st. big challenge to the Branch was the organising of the state Ham Fest. at Turners Beach. Despite pictures of gloom and statements of "This Branch could never organise such a function," we took on the task. Those who attended the function, know the outcome. For those who didn't I can report from comments received, it was a tremendous success. Apparently as far as we know this is the 1st or maybe 2nd time a Divisional "HAMFEST" was held on the North West Coast. Most pleasing to me personally, was the offering of some members of their services to form a Hamfest Committee. Also other persons offering to help out on the occasion. This in my opinion, strengthened our branch and if all members maintain this attitude, it can only lead to a better and stronger branch.

EQUIPMENT STORE.

Early in the year a large quantity of components was purchased privately by a member and offered for sale to branch members. This highlighted the needs to perhaps re-open an equipment store. Grahame Rand VK7ZAQ offered his services as equipment store officer and was duly given the job. Thanks again Grahame.

NEW MEMBERS.

Three (3) "A" grade and five (5) "B" grade members joined the Branch during the term, with the possibility of two additional "B" grade members early in the future. A % increase of this order, if continued, would of course increase the size of our Branch. Thanks to those members who made this possible.

NOTICE OF MEETINGS.

As an experiment I decided to personally contact each member prior to one of our General Meetings, informing them of the date and other incidentals, activities etc. The meeting had a record attendance of 38 persons. Although the attraction was perhaps a lecture and demonstration on Colour Television plus a quantity of cheap components for sale, I'm of the opinion the communicating to various members resulted in the high attendance. I therefore suggest the Branch in future investigates the forwarding of meeting notices to members prior to meeting.

ACTIVITIES

On Air Equipment has been made available at some of the meetings. This seems to have some attraction especially to the younger persons. Also Morse Practice sessions made available were poorly received. I think it would be advantageous to persevere with both of the above activities.

MINI "HAMFEST"

The normal "Mini" hamfest at Port Sorrell was again held in conjunction with the Northern Branch. I'm sorry to report it was poorly attended by N/West Branch members. Despite this, the Northern Branch made up for the lack of N/West people and a great time was had by all.

DIVISIONAL A.G.M. & DINNER.

Little to report as far as this Branch is concerned, except again, very poorly attended by our members.

BRANCH CORRESPONDENT.

Unfortunately our Branch Correspondent resigned due to personal reasons. A volunteer in Reginald Carter took the job.

DIVISIONAL BROADCASTS.

This Branch has had a very successful year regarding broadcasts. I'm pleased to report we have the highest participation of H.F. originating stations i.e. four (4) located from Devonport to Burnie. Thank you to all gentlemen concerned for doing this thankless task. However there are still plenty of vacancies for V.H.F. relay stations. I would like to see some more interest shown in this area.

DIVISIONAL COUNCILLOR.

Congratulations to Grahame Rand on being elected as a Divisional Councillor again this year.

MORSE PRACTICE SESSIONS.

Max Ives VK7MX has offered to conduct Morse Practice sessions on the V.H.F. Nets. for those interested.

W.I.C.E.N.

The Branch resolved to become involved again with W.I.C.E.N. Robert Simpson VK7ZJS offered his services as Branch co-ordinator.

V.R.C.S.

The most important activity in my view, was the formation of a Radio Instructional Class held at Lakin's Hall Ulverstone each Saturday Fortnight. The class has now come under the Youth Radio Club Scheme. The class is being conducted under the guidance of Grahame Rand VK7ZAQ with other helpers including Adrian Sherriff VK7ZAT, Ian Ellings VK7ZIE and Wayne Gibson. Average attendance is 12 plus, which is very satisfying, considering the class has only been operational since February.

CONCLUSION.

Above are some of the main activities which come to mind. There are others of course. I trust ALL members in the forthcoming year will assist your incoming office bearers to ensure another successful year.

Finally, thanks to all Office Bearers during this current term for their assistance.

A.I. Bedelph.

July 1975

QTH

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HF Notes by Frank VK7BC

Conditions have been average for the season and times spent listening with the strongest paths from this QTH being mostly North/south between 0300/1000GMT.

3B9DL who is operating from Rodrigues between 13th June and 13th July has not yet been heard from here, some VK3 stations are looking for him daily and his operating times should be known in due course.

The HKOAA expedition to Serrona Bank in the Caribbean sea was heard with weak signals on SSB and CW between 0400/0600GMT on 40metres/20metres on 20/21 of June.

80metres JA and 1.6 CW has been heard late evenings but ZL'S and VK'S have been providing most of the SSB signals.

40metres has been quite good around 0600/0800GMT with VK2FI strong at 07002. JA, W6 and some european stations have been worked around this time on AM and ssS. through JA QTH becomes heavy later in the evenings.

20 metres has provided most DX as usual. Most of my times on this band have been between 0300/1100GMT. YV7, VR1, ZK1, W, KCC, KIC, KLT, VE8, NE, HK, 424, OZ5, UL7, JV, have been heard with strong signals mostly SSB eastern Canadian stations have been heard with very strong signals around 0500GMT.

15 metres has provided openings on most days to JA and AI and during the afternoon.

10 metres has been looked at from time to time (maybe my 10 metre coil is oc. F7TXY reported very good 10metre openings in W land last weekend.

73 Frank VK7BC

VHF NOTES BY JOE VK7ZGJ

As I mentioned last month you must be listening all the time on six metres if you want a contact this time of the year. The calling frequency of most stations is 52.050. This. Kevin VK7ZAH worked VK4AAL on the 7/6/75 then on the following weekend worked VK5SU, both contacts only lasted about five minutes.

Listening on 52.050 this morning (22/6/75) at 0845 local time I could hear Wally VK2ZLW calling CQ via meteor scatter. I replied to his call and exchanged callsigns with him, time taken to achieve this was about 15 minutes. At 0915 I again heard Wally calling CQ signals this time were 5-9+ for about three minutes we had three short overs exchanging 5-9 and 5-3 reports.

Later on in the morning Bill VK7ZWK reported hearing VK2ZLW I tuned across Six and heard the following stations, VK's 4RO in Ayre 2ZWW, 2ZYL, 2BUC, 4ZUC, back scatter, 2ZNS, plus a CW station and another station in north Queensland. Most signals peaked to 5-9 with shallow QSB, the opening lasted for about one hour.

VHF activity in Launceston area on the tuneable portions of the band is very quiet, Daniel VK7ZDA is in the process of shifting QTH, and Kevin VK7ZAH has undertaken a twelve month Study course.

During the month we had a couple of good openings to VK3 Daniel temporarily erected a beam in his drive way and worked a large number on 2 meters SSB. We also heard a VK5 mobile in the Barossa Valley working VK7's via the Mt Barrow repeater. Summing up activity for the month considering it is the middle of winter it has been rather pleasing.

73 till next month JOE.

FILMS TO BE SHOWN AT NEXT NORTHERN BRANCH MEETING

1. PROJECT ECHO:- 27minutes Colour Echo Satellite
Launched 1960, 100ft. circle,
Passive device used to reflect
radio signals, was the first
communication for satellite.
2. WORLD BEYOND ZERO:- 30minutes Colour Shows World wide
tracking network in action observing
An Unmanned satellite from posts
at Cape Kennedy, Lima, Santiago,
Johannesburg, Anchorage, Winkfield &
Woomera.

Wally VK2ZWX.

Co-Axial Cables. Part 2 By VK7NR.

Last month we ended by explaining the "RG" legend - we should have concluded by stating that cable types not identified RG are primarily intended for use where application is not met by some government type. Or in other words a cheaper cable can be bought with the same specifications as RG but is not bullet proof, sun proof or some other specification as demanded by armed services.

It is proposed this month to look at definitions as applied to co-ax cables.

Attenuation - is loss of power expressed in dB, and applies to a given length of cable at a given frequency. i.e. RG 8A/U has a loss of 5.5 dB per 100 foot at 400 MHz.

Impedance is a term expressing the ratio of voltage to a current in a cable of infinite length and is measured in "ohms impedance". Generally cables of three main classes are manufactured. i.e.
 50 ohms is RG8A/U Type cable
 70 ohms is RG11A/U " "
 93 ohms is RG62A/U " "
 etc, etc.

Capacity Capacity is the property of a system of conductors and dielectrics which permit the storage of electricity when a potential or voltage difference exists between the two conductors. When dealing with co-axial cables the capacity is usually expressed in mmf or pf per foot. Capacity is the major factor governing impedance. The three cables we are using as examples are as follows:-
 RG8A/U - 50 Ohms - 30 pf per foot approx.
 RG59A/U - 70 Ohms - 20 pf " " "
 RG62A/U - 93 Ohms - 13 pf " " "

Velocity is the ratio of the speed of the flow of an electric current in an insulated cable to the speed of light. All insulated cables have this ratio and it is expressed in percentage. In the case of co-ax cables with polyethene dielectric this ratio is 65% to 66%.

Design In selecting co-axial cable we must carefully consider use and application. It is hoped the following V tables and comments are of use. Design formula for characteristic impedance of a single co-axial line is;

d = outside diameter of inner conductor
 D = Inside " " outside conductor

$$Z_0 = \frac{138}{\sqrt{E}} \log_{10} \frac{D}{d}$$

where Z_0 = Characteristic Impedance

E = Inside diameter of the outer conductor

D = Outside diameter of inner conductor.

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Table 1.

Dielectric Material	Dielectric Constant
Air	1
Polyethylene - FOAM	1.5
" " - SOLID	2.3
TFE (Teflon)	2.0
Butyl Rubber (Generally used in pulse cable)	3.1

Another very important key to selection of co-axial cable is the required attenuation. In our hobby we usually try to avoid this. But in some facets we need to introduce attenuation into a circuit.

The formula for theoretical calculation of attenuation (A) is the attenuation due to conductors plus attenuation due to the dielectric:

$$A = 4.35 \frac{R_t}{Z_0} + 2.78 E_{pf} = \text{dB per 100 ft.}$$

Where $R_t \equiv$ Total line resistance ohms / 100 ft.

$R_t = 0.1 \left(\frac{1}{d} + \frac{1}{b} \right) F$ (for single copper line)

E_{pf} = Power factor of dielectric (.0005 for polyethylene)

F = Frequency in megacycles.

As can be seen, attenuation increases as the frequency increases. In perfect cable the pattern of increasing attenuation would be exact and regular.

However, on the practical side this is difficult to achieve and for this reason tolerances are specified. The RG specification spell out in detail the tolerances permitted on various electrical characteristics.

Because the manufacture of co-ax cable is a continuous process rather than a batch type process variations can be expected on long lengths of cable. These are usually detected during manufacture by sweep and spark testing. Cable not conforming to RG specifications is cut out and sold under some other number.

Looking at the basic Z_0 Formula it becomes quite evident that a few thousandths of an inch difference in D would significantly affect the impedance - and in the 50 ohms miniature group of cables, tolerance becomes more important.

Even after the manufacturer has made the cable as perfect as possible there still remains the practical installation and use to which we subject the cable.

Power rating and other characteristics will be affected by such things flexing, bending especially into radius smaller than 20 times the cable diameter.

Variations in atmospheric pressure and heat can also greatly affect co-ax cable.

Earlier in this article we made reference to "theoretical calculations", in our hobby we try to be more "practically correct" but a length of fair quality co-axial cable can be relatively expensive when compared with the rest of an aerial system.

But given reasonable care and in particular paying attention to waterproofing the ends after installation such a length of cable will give years of trouble free service, the alternative is a bad installation and a length of cable that corrodes out in a matter of months.

TO BE CONTINUED.

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