

QRM

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

P.O. BOX 1010
Launceston
Tas. 7250

JUNE 1975
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MEETINGS

June 10th North West Branch Lakins Hall Ulverstone 8p.m.

June 13th Northern Branch Civil Defence Rooms, Bourke
Street 8 p.m.

Followed by Lecture: "The Strange Story of
False Teeth."

YRCS MEETINGS

June 14th
& Kings Meadows High School 10 a.m.

June 28th

June 14th
& Lakins Hall Ulverstone 2 p.m.

June 28th

CONTESTS

June 1st Worked all Britain LF CW

June 21st All Asian DX Phone

June 28-29th ARRL Field Day

SUBSCRIPTIONS

Subscriptions to the Northern Branch are now due
The cost this year is \$2.50. If you are unfinancial
please fill in the form elsewhere in this issue and
return it to P.O. BOX 1010 Launceston without delay
if you wish to continue getting QRM.

Ladies Page

Pumpkin Pie (Enough for two pies)

Pastry:

$\frac{1}{2}$ lb. Plain Flour
 $\frac{1}{2}$ lb. Butter
 $\frac{1}{4}$ teaspoon Salt

Sift flour and salt, divide butter into 4 parts. Rub one piece through flour. Mix with a little water to a soft dough. Fold and roll out three times, spreading one portion of butter each time. Line plate or shallow pie dish. Cut edges upward.

Filling:

1 Cup cooked pumpkin
3 eggs, $\frac{1}{2}$ cup sugar
 $\frac{1}{2}$ Cup Milk, 1 Oz. Butter.
Nutmeg, Juice of half lemon
 $\frac{1}{2}$ pint whipped cream.

Rub pumpkin through sieve, add sugar, butter, lemon and eggs one at a time and then milk, and lastly egg whites beaten stiffly. Blend and pour into pie dish. Sprinkle with nutmeg. Bake in fairly hot oven for 30 minutes. Top with whipped cream.

Banana Loaf (Ideal for freezing)

3 mashed bananas
 $\frac{3}{4}$ cup sugar
1 egg
 $1\frac{1}{2}$ cups Plain Flour
1 teaspoon Carb. Soda
1 teaspoon Baking Powder
6 tablespoons Butter

Mash bananas, gradually add sugar. Beat in egg. Sift flour, soda and baking powder and add to mixture and lastly add melted butter. Bake at 350° for approximately $\frac{3}{4}$ hour. (Better kept for a couple of days before cutting.) Slice and sprinkle with butter.

LETTER TO EDITORIAL

Dear Editor Q.R.M.,

I found the May editorial of Q.R.M. very thought provoking and as a result offer a few observations. As these are personal I trust that they will not be censored and I can get my message across.

According to our licence we are all amateurs or saying it in another way the object of the exercise is to experiment. Even the Sunday morning broadcasts are in the nature of an experiment. We are not public broadcasters. Therefore I cannot see that, to quote, "Poor quality does reflect badly on the Institute". Reflect to whom? The broadcasts are directed primarily to amateurs and not to the public in general. So let us go on experimenting even in this field.

The first paragraph extols the virtues of "those amongst us that are not appliance operators", and later insists on perfection in performance. We all know that amateur gear does not always work that way (Murphy's Law) and so let us not be too critical of those who are having a go.

My second observation is directed to the reference to Z calls participation. This becomes necessary because full call holders will not be involved in the Sunday morning broadcast. So the answer is to get more full calls. I cannot understand why more limited licence holders do not bother to finish the job and qualify in Cw. If all calls in VK7 were full ones there would be plenty of stations available for HF broadcasts and ultimately eliminate the poor quality referred to. I for one am always willing to help anyone to master morse code.

If it does little else this letter will help to fill one of the blank spaces in Q.R.M.

Signed

MAX VR7MX

June 1975

QRM

Northern Branch Notes

The May meeting was held at the Civil Defence rooms in Bourke Street and attended by 31 members and visitors. It was reported that Council is prepared to pay the Licence fee for the repeater VK7RAA in line with payments for the Devonport Beacon and the VK7WI licences.

A motion was passed thanking Joe Richter for his help with the publishing of Q.R.M. over the past several years. Peter VK7PF reported on the Federal convention and brought to our notice the need to make a call on members due to lack of federal finance.

Further information may be found in the bulletin. Other points noted were:

It is necessary to apply for the suffix /T to carry out ATV transmissions.

The Wicen coordinator is VK1QJ who is to remain in close contact with Canberra.

There is to be a change in the Radio Act to allow for maintenance of equipment to be sufficient guilt of illegal activities.

There is still a hold up regarding clubrooms as we are now awaiting a report from the Architects regarding the proposed alterations and at this stage other possibilities are still being looked at.

Reg VK7KK, Lindsay VK7ZLD and Robin VK7RH have offered to help Robin with the display at the Museum.

Robin VK7RH has offered to help anyone waiting to learn morse and informed the meeting that CW practice is available by tuning 3550khz at 7.30 p.m. each evening - the station is VK7BWI.

Members are asked to make known their preferences with regard to social activities - I think this covers the main points.

73's VK7ZGG Graeme.

1975 Subscriptions Northern Branch

Please find enclosed \$2.50 being subscription for Northern Branch W.I.A. Tas. Division.

NAME:.....CALLSIGN:.....

ADDRESS:.....

.....

North West Notes

The meeting at Lakins Hall proceeded smoothly with the usual club statistics re-balance etc. and a welcome extended to Lindsey Johnson of Ulverstone who is desirous of becoming an associate.

It was proposed that council be approached to clarify the situation of official WIA.QSL cards to be used at official W.I.A. functions.

Some discussion ensued about the possibility of Morse practise on 2 metres and Max 7MA agreed to look into the why's and wherefore's of a workable scheme.

Tony 7AA outlined conditions pertaining to the new Novice licence.

Copies of the proposed style of exam were distributed for persual and as a listener I couldn't help wondering that if this new sanction is not a step in the wrong direction. It is claimed by many that it is at least a chance for novices to build and align a transmitter and stand back in a cloud of glory with the exclamation/ "I did it". As I see it this is not the case because this can already be done under the wing of a fully licensed amateur. The big question remains, How many lads are keen on home brew? The trends of the last few years indicate that there has been a mass exodus from home brew to store goods so it does give us food for thought.

As one who hasn't achieved the coveted goal yet the old system seemed to fill the bill adequately and discouraged Murphy from getting his foot in.

Graham 7ZA gave an interesting talk on voltage regulation using solid state.

Sid 7SF gave a film show on the capabilities of four wheel drive and it left no doubts that if you get stuck, its the driver- not the vehicle.

Closing comments: The next meeting is the A.G.M. there should be 100% attendance - health and duty permitting. If you haven't held a position of office in the club, now's your chance to show 'em.

Cheers - Reg. (Associate Member)

As stated, some thoughts are those of the writer and not necessarily of the branch members. (Editor)

There has been no sporadic openings this month on six metres, so I have very little to report, local activity is also quiet with the occasional contact on 52.525. Malcolm Salier VK700 was heard last weekend on 52.050. the first time for several months the only stations during the month were VK2BQJ on meteor scatter VK7ZAH & VK7ZDA.

Dont forget the mid-winter DX openings on six during June they dont last long so you have to be around to catch a contact.

While on the subject of meteor scatter here is an extract from a book I obtained from the library.

Meteoroids are small bodies, most of which orbit the sun. Their orbital velocity lies between 11.3 Km/s (minimum velocity for a solar orbit) and 72Km/s (the velocity required to escape solar gravity). The measured mean velocity is 40Km/s. On the other hand, the orbital velocity of the earth is approximately 30Km/s.

At 0600h local time at the point of observation, the orbital velocity of the earth is directed towards the zenith, and the relative velocity of the earth is directed towards the zenith, too. and the relative velocity of meteoroids in relation to the atmosphere lies between 41 and 102 Km/s with mean value of 70 km/s. At 1800h local time at the point of observation, the orbital velocity of the earth is directed towards the nadir, and some meteoroids are unable to catch up with it, while others arrive at velocities between 0 and 42/Kms with a mean value of 10Km/s.

Therefore, the number of meteoroids encountered and their velocity are considerably greater at 0600h than at 1800h.

The deceleration of meteoroids by the relatively low layers of the atmosphere produces intense heat, which causes their combustion at a greater height and more rapidly if their initial velocity was greater. The combustion products are ionised and form a meteoric trail that is capable of reflecting radio waves. Very thick trails can be seen with the naked eye at the moment of their formation meteoric ionization occurs at altitudes between 80 and 100Km, with a maximum ionization occurs immediately after the trail formation altitudes between has been formed; the trail then begins to expand and to diffuse outwards. Its electron density decreases and it is no longer capable of reflecting high frequencies.

At the same time, the trail is distorted by atmosphere disturbances. In the case of a large meteor, the head of the trail reflects a considerable amount of energy. Because of the motion involved, this reflection occurs with a change in frequency due to Doppler effect. Waves reflected by the head of the trail interfere with those reflected by the body of the trail, thereby ascends again. On 52 Mhz is sounds like a "Ping".

I hope you have found the above interesting and you now know why one carries out meteor scatter contacts at such an unearthly hour.

Two meteoroids still provides openings to VK3 via out our repeater on these foggy mornings also if you live in a good location you can work through the VK3 repeaters,

73 till next month
JCE. VK7ZGJ

Part One.

CO- AXIAL CABLES.....Some thoughts
7NR style.

We spend time and money generating R.F. and then feed it into a "CABLE" which we hope will carry it to our radiating devices for onward transmission or inversely we connect that super duper receiving device to the same cable, and are disappointed at the results.

That cable I refer to in this instance we know as "Co-ax". The following comments are intended to give a better appreciation of Co-axial cable.

For the younger members it is necessary to give a simple explanation of the use and development of co-axial cable and we use here as an example a common telephone circuit.

Transmission of signals over wire lines requires two conductors to complete the circuit -- the "go" wire and the "return" wire. In some telephone applications only the "go" wire is mounted on the pole, and the earth itself is used as the "return" wire. Or pairs of cables can be bundled together to form a multi pair cable.

Whatever the arrangement, these wires carrying the very delicate electrical currents conveying the telephone conversation are exposed to external interference, lightning which cause static, wet weather causes leakage across conductors giving a frying noise, faults on power lines cause plops, buzzes and hums, and the proximity of other cable pairs to your pair gives another problem known as "cross talk". These are some of the problems we call Q.R.N.

Two other major problems relate to the use of "able pairs" the first is attenuation, that is the signal gets weaker, the longer the wire circuit, so that amplifiers are needed every 30 miles or so to keep the intelligence above the line noise.

The other problem and perhaps the most important of the two is that of "Band Width". Telephone conversation can be satisfactorily carried if the audible tones can be kept in the range 300.C.P.S. To about 2.7 K.C.S. It is also possible to carry more than one conversation simultaneously on a pair of wires by "Frequency Multiplexing" the conversations.

In this system each conversation occupies a band width of approx. 2700 cycles with a guard band 500 cycles between each channel to prevent their mixing.

Because of the relatively low upper limits of frequency that a pair of wires can carry simultaneously we cannot keep adding the number of conversations infinitum.

TO BE CONTINUED

Part one contin....

Co-ax cable was developed primarily to alleviate the foregoing problems.

In co-ax cable the "go" wire is the center conductor around which is placed a heavy insulator. But the "return" wire is no longer another identical wire, instead it takes the form of a copper tube, either braided or drawn over the insulator and completely surrounding the "go" wire and insulator and concentric with it. Hence the term co-axial.

Because of it's construction no external interference can affect your conversation (when used for telephones) because the currents are completely shielded by the "return" (Braid) conductor.

If properly protected and sealed even the effects of weather are excluded, all though attimes co-axial cables buried four feet down are STRUCK!? by lightning.

Co-axial cable has an extremely broad band width, and is capable of carrying signals from zero frequency to many MHz.

Hundreds of conversations can be frequency multiplexed and transmitted at the same time over a single co-ax cable and because of it's low attenuation at these frequencies fewer line amplifiers are needed. Those that are required are relatively cheap because they can boost all signals on the line simultaneously.

The uses of co-axial cable extends to any application in which signals lose, and attenuation must be kept to a minimum or in which the elimination of outside interference is desirable and important.

Identification by type numbers.

In this article I can only comment on cables made strickly to U.S. Government specifications and marked with the legend R.G.

What does this mean, using R.G.8 A/U as an example.

R means Radio Frequency.

G means Government.

8 is the Government approval no.

A means a Specific modification or revision.

/U means it is a universal type.

You can except to identify a cable the legend doesn't give any technical details - Current wire tables run from RG1 to RG325 so it is not possible to publish all this information in Q.R.M. Should you require information on a particular cable give me a call - I might be able to help.

TO BE CONTINUED.

----- FOR SALE FOR SALE -----

Home brew cw Transmitter geloso VFO \$ 70.00
 Home brew receiver plug in coils \$ 50.00
 Or both for \$ 100.00
 6 metre transistorized convertor (vK3) \$ 8.00
 Coil winder

All in going order.

Contact ED VK7HE

Phone Launceston 391 863

FT 200 just been tuned, has several new tubes
 Home brew power supply
 Three transformers instead of the usual one \$ 350.00

Contact Ross Broomhall

27 Suncrest Place

Phone Launceston 391515

Book shelf speaker enclosures 1 cub.ft. containing five
 and six inch twin cone speakers professionally constructed
 \$ 50.00

Speaker alone cost this much.

A.W.A. 150 watt base station on 52.525 mhz. \$ 50.00

I.G.L. receiver 98% complete \$ 20.00

-has been operational, missing mpf1z1 and one I.F.
 transformer.

Wanted to but "STOLLEE" aerial rotator or similiar.

Contact Joe VK7ZGJ.

40 Lavender Grove.

Phone Launceston 443882

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FROM: AMATEUR COMMUNICATIONS ADVANCEMENTS
 47 Ballast Point Rd, BIRCHGROVE 2041

HF Notes for June 1975

The HF bands have, with the exception of 10 metres been quite good for DX despite the sunspot cycle situation. The crop of HF contests have produced plenty of activity over most weekends and some usually rare countries are obtainable for those of us who look for them deep down "with the cans on".

On 80 and 40 metres the following countries have been worked during the evening and early mornings VE7, VE8, VO1, G, GC, D, HB, VP9 and other mornings during the early evenings with the control and Southern Americas coming in later.

20 metres as usual carried most traffic and has been open most days until late evenings when good DX can still be worked by using the cans and a hey!

15/10 metres have not been watched much from this station this month but is usable for DX most days if conditions are fair. A good opening was into ZL on 10 metres during the morning of the 20th.

VK7BC Frank.

Looking Back

Extract from minutes of the Northern Zone held on 14 June 1963.

"The next item on the Agenda was the amendment of the Zone Rules and the President read the rules and each rule was discussed fully (sometimes at both ends of the room at once) and from the many suggested amendments and amended amendments the following alterations were finally decided upon after Ccl 7LZ had warned of the tendency to overgovern."

Extract from minutes of the Northern Zone held on 16-June-1971.

"Following complaints by some members that the activity of Launceston Amateurs had become very poor in recent weeks, it was decided to hold a weekly VHF net for which President 7PF chose Monday at 1930 on the 6 metre frequency to be the most suitable arrangement, with a further 2 metre exercise to be arranged by members at a time which was most suitable."

FOR SALE ***** FOR SALE ***** FOR SALE ***** FOR SALE *****

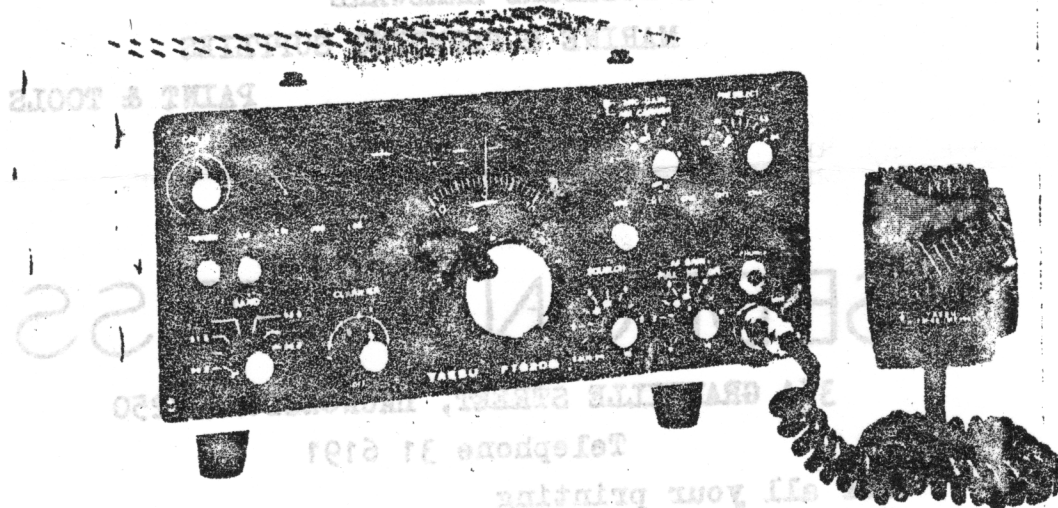
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Join the action and DX on 6 Meters with our new, all solid state, 10 Watt SSB, CW and AM transceiver. The FT-620B features, in one compact unit, complete band coverage in eight, 500 KHz segments with 1 KHz VFO readout across the entire band. Provision for up to four crystal controlled channels in each of the eight band segments, a receiver

offset clarifier, and an effective noise blanker; all add up to total operating flexibility. A built-in AC and DC power supply adds to the portability of the FT-620B transceiver. Add up all the features, and you have another total performance transceiver for the leader in amateur radio equipment.

Specifications

GENERAL

Frequency Range: 50.0–50.5 MHz, 50.5–51.0 MHz, 51.0–51.5 MHz, 51.5–52.0 MHz, 52.0–52.5 MHz, 52.5–53.0 MHz, 53.0–53.5 MHz and 53.5–54.0 MHz. (For 52.0–54.0 MHz crystals are optional.)

Mode: Selectable USB, LSB, CW or AM.

Frequency Stability: Within 100 Hz during any 30 minute period after warm-up. Not more than 100 Hz with 10% line voltage variation.

Calibration Accuracy: 2 KHz maximum after 100 KHz calibration.

Backlash: Not more than 50 Hz.

Antenna Impedance: 50 Ohm unbalanced nominal.

Circuitry: 35 Transistors, 7 FET, 2 Integrated Circuits and 40 Diodes.

Power Requirement: 100/110/117/200/220/234 V AC, 50/60 Hz, 60 Watts maximum, or 13.5 V DC nominal, 0.3 A for receive and 2 A for transmit.

Size: 280(W) x 125(H) x 295(D) m/m.
Weight: 8 Kg.

RECEIVER

Sensitivity: 0.5 μ V for 10 dB Noise plus Signal to Noise Ratio on SSB and CW. 1 μ V on AM.

Selectivity: 2.5 KHz nominal bandwidth at 6 dB down, 4.1 KHz at 60 dB down on SSB and CW. 6 KHz nominal bandwidth at 6 dB down, 10 KHz at 60 dB down on AM.

Harmonic & Other Spurious Response: Image Rejection better than 60 dB. Internal Spurious Signal below 1 μ V equivalent to antenna input.

Automatic Gain Control: AGC threshold nominal 1 μ V. Attack time 5 milliseconds and release time 1.5 seconds.

Audio Noise Level: Not less than 40 dB below 1 Watt.

Audio Output: 2 Watts to internal or external speaker at 4 Ohm impedance.

Audio Distortion: Less than 10% at 2 Watts output.

TRANSMITTER

Input Power: 24 Watts PEP on SSB, 20 Watts on CW at 50% duty cycle and 8 Watts on AM.

Microphone: 50 K Ohm dynamic type.

Carrier Suppression: -40 dB.

Sideband Suppression: -40 dB.

Spurious Radiation: -60 dB.

Distortion Products: -25 dB.

Frequency Response: 350 to 2700 Hz.

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