

DDRC Ink

The official journal of the Darling Downs Radio Club

NOTICES

Next meeting:

9th July, 2018 : **Management**

23rd July, 2018: **AGM**

4th August, 2018: Club Lunch

25th August ALARA contest

Office Bearers

President:

Mark Brandwood VK4IL

Vice-President:

David Curry VK4SP

A/Secretary:

Sheryl Erdmann SWL

Treasurer:

Kevin Crandell VK4VKX

Contact the club

All contact should be made to the secretary of the DDRCi via email:

secretary@ddrci.org.au

Or by phoning the secretary on 07 46961045.

From the editor's desk

As the first edition of the newsletter went out in a bit of a hurry, some mistakes were made. However this edition has evolved over the last few weeks and hopefully there will be fewer errors.

Firstly I must correct an error regarding the **Scrub Turkey Net**. This net runs on Thursday night on the **Mt.Kynoch repeater**, not the Preston repeater as reported in the last Newsletter. Mt Kynoch repeater operates on **147.050** with **+ve offset and 67Hz tone**, so for those newbies trying to find this net, this is the correct frequency. My apologies to Merv (VK4EM) and all his marry followers.

I have taken the liberty to include in this edition a projects page, so if anyone have completed a new project recently or restored an old one and would like to share this, please send me details of such projects, include photos and descriptions, to be presented in the next newsletter edition. If for any reason I receive more that two projects, I will put one on the following edition and the next on the month after.

Also as a request from my XYL, she would like to see some articles relating to women on amateur radio. If I could request input from any female ham operators or XYL's.

I hope that you enjoy this newsletter and please comment or send letters to the editor, and I will publish the clean ones (chuckle, chuckle).

73's for now from David VK4DAV

Waiting to communicate with the Space Station.



CONGRATULATIONS AND WELCOME

We welcome the new amateurs that have passed their exams and got their licenses, these are:

Mark Appo	VK4DMA	Advanced
Darren Campbell	VK4DCC	Advanced
Jacquie Uzzell	VK4GXM	Advanced
Matt Hesse	VK4PZZ	Standard
Elizabeth Lynch	VK4FEBY	Foundation
Mary Lynch	VK4FMAJ	Foundation
Alexander Lynch	VK4FAIM	Foundation
Michael Lynch	VL4FMDA	Foundation
Wayne Anderson	VK4HCP	Standard

Please make use of our repeaters, see the list below.

Repeater News

For the benefit of the new license holders, below is a table with the repeaters that are available in this area. If you feel that there is an error in this table, please advise the editor so that changes can be made.

Rep TX	Rep RX	Call sign	Location	Details
146.750	146.150	VK4RDD	Preston	No Tone req.
439.275	434.275	VK4RDD	Preston	91.5Hz tone to access
147.050	147.650	VK4RTQ	Mt Kynoch	91.5Hz tone to access Connected to Mt Mowbullen and Braeside
439.4875	434.4875	VK4RTQ	Mt Kynoch	DMR Digital Repeater on the DMR-MARC Network
53.825	52.825	VK4REG	Mt Mowbullen	6M repeater, no tone required
146.950	146.350	VK4REG	Mt Mowbullen	91.5Hz tone to access, connected to Braeside & Mt Kynoch
438.650	433.650	VK4REG	Mt Mowbullen	91.5Hz tone to access
146.675	146.075	VK4RET	Mt Kiangarow	91.5Hz tone to access
438.700	433.700	VK4RET	Mt Kiangarow	91.5Hz tone to access
147.100	147.700	VK4RZD	Mt Perseverance	91.5Hz tone to access. 90 sec Time-Out

**2 Meter Net
Every Sunday**

Remember to join us on Sunday mornings at 10 am for the Darling Downs Radio Club 2 meter net, Join our net controller Kevin VK4VKX for a chat and to have a good rag chew.

**80 Meter Net
Every Saturday**

Or if you prefer HF, then join the conversation of 80 meters hosted by Theo Moller VK4ESK, I am sure that you will be able to ask questions and get several responses by a group of very knowledgeable amateurs, after all, this is what amateur radio is all about.

**Scrub Turkey net
2 meters
Thursdays**

Another well attended net is on Thursday nights commencing at 7:30 pm on the Mt Kynoch repeater 147.050 +ve offset and 91.5Hz tone, this is the Scrub Turkey Net hosted by Merv Morrison VK4EM, you might hear a lot of SSTV and satellite issues.

Social/Technical group

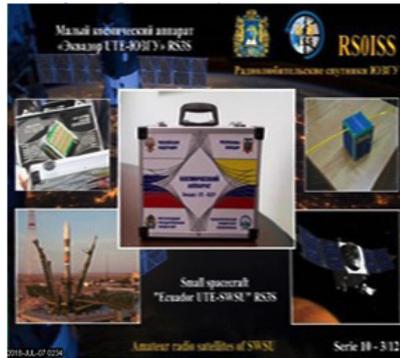
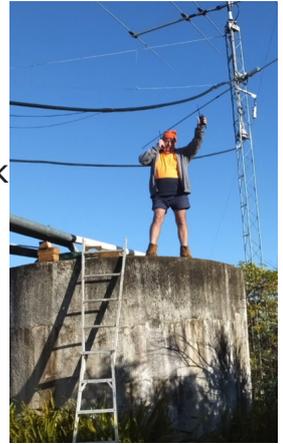
This month Social/Technical meeting was well attended, Bob Murton VK4ZOW spoke about a 2 meter antenna and also presented the club with a folder with a number of articles from the Brisbane VHF group, the folder is kept with the secretary Sheryl and can be accessed by anyone. The articles will be comb bound into booklets so that more than one can be lent out to amateurs who wish to read the articles.

Rod Webb VK4ZJ spoke a little about satellite issues and what he is trying to achieve to enable him to hear the satellites.

During the period when the Space Station was actively sending SSTV, there were a good number of participants that got some if not all of the pictures that were sent, some of the participants obtained the Certificate while others are still waiting for it.

On the other activity regarding satellites, some participants go to extreme lengths to make a contact.

A well known local amateur has gone to those extremes to make contact, and I think he was successful in making the contact. Well done Merv, your enthusiasm and encouragement to others is infectious and I personally applaud you for your efforts.



This next picture is one of many that has been received

from the Space Station. We hope that the Space Station will have another round of SSTV so that we can try and obtain a many picture as possible, and it would be nice if we could chat with the astronauts from time to time.

By Monthly Luncheon



A.L.A.R.A. CONTEST

NOTE: Contest is always on the last FULL weekend of August
ELIGIBILITY: All licensed operators throughout the world are invited to participate.

OBJECT: Participation: YLs work everyone; OMs work YLs only.

CONTEST: Combined phone and CW run over 24 hours:

STARTS: Saturday 25th August 2018 at 0600 hours UTC

ENDS: Sunday 26th August 2018 at 0559 hours UTC

SUGGESTED FREQUENCIES: All HF Bands to be used except 160m & WARC Bands.

Contacts made on ECHOLINK will also be accepted.

OPERATION: Single operator only (1 operator per call sign).

NB: If YL is operating as a 2nd operator, her husband/partner CANNOT participate in the contest.

Every individual phone or CW contact may be counted.

There must be an interval of greater than 1 hour between contacts with any one station on any one band and in the same mode.

All contacts must be made in accordance with operator and station licence regulations.

PROCEDURE: Phone: Call "CQ ALARA CONTEST"

CW: YLs call "CQ TEST ALARA"

OMs call "CQ YL"

EXCHANGES: ALARA member: RS or RST, serial no. starting at 001, ALARA member, name.

YL non-member, OM: RS or RST, serial no. starting at 001, name and whether YL or OM.

OMs work YLs only

SCORING: Phone: 5 points for ALARA member logged

4 points for YL non-member logged

3 points for OM logged

CW: All contacts made on CW count for double points

OM: 5 points for ALARA member logged

4 points for YL non-member logged

LOGS: Single log entry. Logs must show date, UTC time, band, mode, call sign worked, report and serial number sent, report and serial number received, name of operator of station worked and points claimed.

Please note in mode if contact is on Echolink.

For more information got to www.alara.org.au this website will give you more information on this contest.



Miss Kathleen Parkin at the age of 15 years, she has made her own apparatus

It was good to hear John's (VK4ZJE) eye operation went well, we wish you a speedy recovery, take it easy for a while until it all settles down.



A surprised phone call was received from VK4ZOW, who informed me he had suffered a mild heart attack (I think that is what he called it) and was home from hospital two days later, well Bob take those pills and don't miss them, otherwise we will miss you. We wish you speedy recovery.

CONTESTS

Remembrance Day Contest

Remembrance Day Contest - August 11th & 12th 2018
(UTC 0300 Sat - 03:00 Sun)

This contest commemorates the Amateurs who died during World War II and is designed to encourage friendly participation and help improve the operating skills of participants. It is held on the weekend closest to the 15th August, the date on which hostilities ceased in the southwest Pacific area.

Alara contest

Alara contest

A friendly contest for YIs and OMsp

We invite all YIs and Oms to join us for a friendly contest.

Start 25/8/18 - 1600 until 26/8/18 - 1559

EXPRESSIONS OF INTEREST

Any person willing to volunteer their knowledge and service to create activities for newcomers to the hobby of amateur radio and electronics.

Interests such as fox hunts, antenna building, electronic projects would be just a few projects to mention.

As with any project, we need volunteers to assist, any interested persons please contact David Erdmann, (VK4DAV) on 0490 122 268 for further information.

Projects could include display of amateur radio at markets and venues where there is a gathering of people (i.e. USQ, Pioneer Village, Jondaryan Woolshed, etc.)



Cube Sat or nano satellites on low orbit, these measure 10cm high by 10cm wide and 10cm deep, as you can see a very small satellite, however good contact has been made with these devices.

DARLING DOWNS RADIO CLUB Inc.

Annual General Meeting

The 2018 Annual General Meeting was held at the Toowoomba City Library on Monday 23rd of July.

The election of office bearers is as follows:

Management Committee

President: David Erdmann VK4DAV

Vice President: David Curry VK4SP

Secretary: Sheryl Erdmann SWL

Treasurer: Kevin Crandell VK4VKX

Steering Committee

Terry Walters: VK4KTP

Rod Webb: VK4ZJ

Cham Jarvis: VK4VOF

Mark Shepherd: VK4AMS

Repeater Sub-Committee

Chairman:

Bruce Boardman VK4MQ

Members:

Terry Walters: VK4KTP

Kerry Wilmott: VK4TP

John Mondientz: VK4ZJE

Station Manager

Theo Moller: VK4ESK

2 Meter Net Controller

Kevin Crandell

Backup: Kerry Wilmott VK4TP,
Merv Morrison VK4EM

80 Meter Net Controller

Theo Moller VK4ESK

Backup: Mark Shepherd VK4AMS,
Dougal Johnston VK4EKA

News Editor

Mark Brandwood: VK4IL

Tea Club Manager

Kevin Crandell VK4VKX

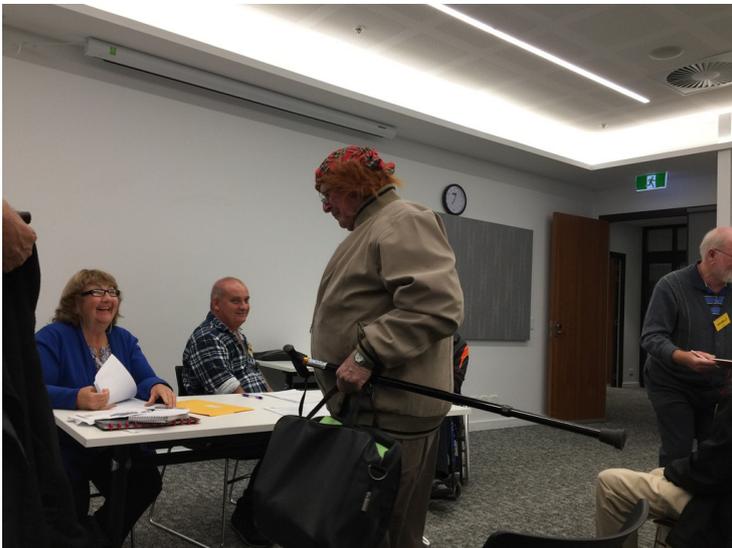
Club Assessor

John Kirk: VK4TJ



From The President's desk

I would like to take this opportunity to thank and congratulate all newly elected members, I would also wish to thank the outgoing president Mark Brandwood VK4IL for his contribution to the club over the past two years, and congratulate him on his appointment as the news editor. A huge thank you to Theo Moller VK4ESK for his professionalism in chairing the AGM elections. Thank you Theo. Working together as a team we will endeavour to progress throughout the year with a stronger community presence with many varying and interesting projects to be tackled. A big heart felt thank you to all those who showed their confidence by voting for me.



Projects page

As this is a newsletter for amateur radio, I have decided to include a different article every month related to electronics or amateur radio, this month a 2 meter 5/4 wave antenna design by Mike Martell N1HFX. I hope maybe someone would like to build it and let me know of your success or failure, remember that success is failure missing a bit.

Build a 5/4 wave 2meter antenna.

This month I decided to build a 2 meter 5/4 wave antenna. This antenna is unique in that it is enclosed entirely in 3/4" PVC which makes the design a little more complicated.

The primary problem is that PVC tubing has a significant velocity factor which causes RF to slow down. This means that an antenna encased in PVC will normally need to have its physical length reduced by about 19%. To further complicate the design, a 5/4 wave antenna's impedance has a highly inductive component which must be tuned out to get a good match. Fortunately, the design in Figure 1 solves all of these problems.

This antenna is made with the following components:

About 2 feet of outdoor type 300 ohm TV twin lead (Used for matching system.)

About 5 feet of #18 stranded insulated wire (Used for radiating element.)

About 5 feet of RG58/U coax

One PL259 Connector

One PL259 female to female coupler

About 8 feet of 3/4" PVC tubing. (normally sold in 10 foot lengths)

Two 3/4" PVC end caps

About 8 feet of 1/4" hardwood dowel (normally sold in 4 or 5 foot lengths)

About 25 small tie wraps

Miscellaneous PVC cement, solder, small piece of tubing, etc.

The twin lead was originally cut for 20 inches with 4 7/8 inches cut back on the braid or ground side.

The #18 insulated wire was cut to exactly 57 3/4 inches.

The overall length of the antenna assembly is 77 3/4 inches.

This indicates a velocity factor of about .81 compared to a normal 5/4 wave 146 Mhz antenna. See calculation below:

$234 * 5 / 146 * .81 = 6.49$ feet or about 77.88 inches

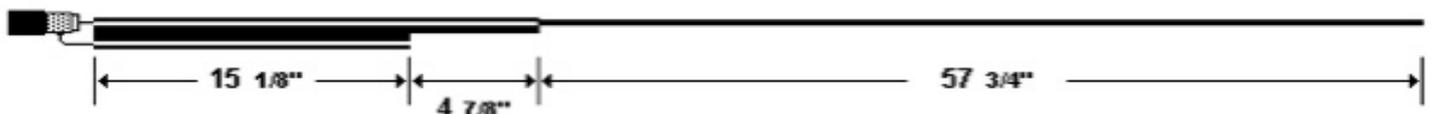


Figure 1

Now that we have all our parts, let's begin assembly by cutting back the insulation of the coax and the TV twin lead.

We will need to cut back the coax to expose the center conductor as well as part of the braid. It is a good idea to lightly thin the braid with solder to prevent any strands from shorting out to the center conductor.

Solder the center conductor to one end of the twin lead and solder the braid to the other end off the twin lead as in Figure 1.

Notice the braid of the coax is soldered to the shorter part of the twin lead which is left open. This serves as our matching system which adds capacitance to our antenna to offset

the inductive component of the antenna.

Trim the twin lead to 20 inches and solder about 60 inches of #18 stranded wire to the twin lead as in Figure 1. The insulation should not be removed except as necessary for soldering. Prepare the 1/4" hardwood dowel by joining two 4 or 5 foot lengths together.

The ends can be joined by crimping a 1 inch length of 5/16" aluminum tubing or using a good quality wood glue.

Now attach the coax, twin lead and wire assembly to the 1/4" dowel using tie wraps about every 3 inches.

Pull the twin lead and wire to keep it as straight as possible. Before attaching the PL259 connector to the coax, drill a hole in one of the PVC end caps and slide it over the coax to prepare for permanent mounting in the PVC.

Now attach the PL259 connector as well as any other connectors needed to check SWR. Cut back the open end of the twin lead to about 16 inches as in Figure 1

Now we are ready for final tuning.

Slide the antenna, dowel assembly inside the 3/4" PVC first.

All SWR readings must be taken with the antenna, dowel assembly inside the PVC tubing or the antenna will appear electrically shorter than necessary.

Check SWR on both the top and bottom edge of the band.

If the SWR is higher at 147.995 Mhz than at 144.005 Mhz then the antenna is too long and should be shortened.

Cut off no more than a 1/4" at a time of the #18 wire. Also, trim the open end of the twin lead by no more than 1/8" at a time to further lower SWR.

Remember the twin lead is simply a matching system which changes impedance and has no real effect on the electrical length of the antenna.

The final lengths of the #18 wire and twin lead should very closely resemble those listed in Figure 1. The prototype antenna achieved SWR readings of less than 1.2 to 1 across the entire 2 meter band. Remember to keep the antenna away from metal objects when checking SWR.

After the antenna is properly tuned, trim the antenna dowel assembly to about 7 feet.

Leave a few inches of coax attached to the bottom of the dowel so that the mast will be away from the twin lead portion of the antenna when mounted.

Trim the PVC tubing to about 7' 2" and cement the top end cap. Double check SWR before cementing the bottom end cap.

After SWR has been double checked, slide the antenna, dowel assembly into the PVC and cement the bottom end cap. If desired, styrofoam spacers may be used to get a very snug fit. Waterproof the bottom end cap where the coax leaves the antenna. When completed, the antenna should resemble Figure 2.

When mounting the antenna, use a PL259 female to female coupler.

Do not use RG58/U for the entire feed line because it is too lossy.

Use good quality RG8/U or similar coax for the feedline. Of course, do not forget to waterproof the female to female coupler.

Mount to any mast using standard TV antenna clamps at the bottom of the antenna and keep it high and away from other metal objects for best performance and lowest SWR.

Completed 5/4 Wave Antenna



Figure 2

Although not actually measured, this antenna should give at least 6 dB gain if mounted high enough.

Remember, the small diameter of the radiating element has no effect on the radiation resistance. The only real benefit with using a large diameter radiating element is durability and slightly improved bandwidth. This antenna should give many years of reliable performance for a fraction of the cost of a commercial antenna.

DE N1HFX

The Darling Downs Radio Club Incorporated appreciates the support of the following businesses

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