



NERG NEWS

North East Radio Group Inc
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Incorporated 1985 Victoria Reg No A0006776V
Affiliated with the WIA
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NERG Net

The NERG NET will be on non-meeting Thursday evenings on the VK3RMH 70cm repeater. That is 433.325MHz repeater input with 91.5Hz CTCSS. Set your receive frequency to 438.325MHz. 8:30pm. You can also use the 9700 remote to take part.

December Meeting Report

Once again we had the NERG Christmas party at the club rooms and what a great night it was the food was excellent and everyone seemed to have a great time. Thanks go to the great team that organised and worked so hard to look after us – great job!!

Get well Tony VK3ZTR

Tony had triple by-pass surgery 2 weeks ago and is progressing well. All the best Tony.

February 2024

WHAT'S ON THIS MONTH?

Monthly meeting

Thursday 8th February

Show and tell as well as a general catch up – bring along your latest project, something you found in the back of the shack or other interesting item and have a chat with your fellow members.

Every Thursday afternoon – Radio Café

At the hall – Commencing at 2:00pm

Come along and play with the radios, have a chat and a cuppa.

Forth Tuesday of the month –

Gainfully Unemployed Group

Please let Jim know if you are coming to the next one on Tuesday 27th February 2024

If you would like to be a member of the mailing list for this group please request membership on groups.io the group name is nerg-gug.

Kit Building and testing Day

Saturday 17th February 2024

Note: Date changed due to our Bunnings BBQ on the 24th. We will be working on the spiderbeam at the clubrooms.

NERG Traditional Yum Cha report

Once again we had the Traditional NERG January Yum Cha lunch. An excellent time was had by the 7 attendees, food was fantastic and fast service, we all left feeling very full!!

WE NEED YOU!

Saturday 24th Feb 2024

Once again we have been allocated a Bunnings BBQ. This is on Saturday 24th February 2024 at the Eltham Bunnings, we need helpers! The income from these BBQs fund the club's activities and we are looking for 10 or so helpers for a morning or afternoon shift. Please let us know if you are willing to help by emailing us at vk3cne@gmail.com detailing your availability. Times are between 8am-12pm and 12pm-4pm. If you can only do a couple of hours that will be fine but come along and help your club and have some fun with the other volunteers.

Discounts from Suppliers

Club members can get discounts from two suppliers:

Altronics. (Australia Wide), Mention you are from the North East Radio Group or give our customer no - 64429. Discount will be minus 10% up to 45% off depending on the item. (Actual discounts depend on the product type and quantity purchased). There is No Minimum Spend in store to receive the discount. For on-line or phone Sales there **IS** a Minimum spend of \$25.00 inc GST but **NOT** including Freight. In the comments section put "64429" to receive the discount.

We have discovered that David VK3UQ gets an email, that you may not get, detailing delivery of your order. So pop him an email when you order and he will be able to track which email belongs to you. We hope to have a method of dealing with this soon. President at nerg.asn.au

Jaycar Electronics stores by mentioning you are from the "NERG" no spaces quotes or dots etc, Account code is 44700493. You need to spend a min \$25.00 to receive a 10% discount. <http://www.jaycar.com.au/>

February 2024

PLANNED DXPEDITIONS

Before we look at who's on the air this month we would like to remind DXers that

there is a NERG DXers email group. This was hosted on the NERG Email server but we are moving to a new list on groups.io this is called the NERGDxers and if you search groups.io you will be given the option to request membership of the group. If you experience difficulties then email us at vk3cne@gmail.com We post things like ARRL DX bulletins and propagation reports and any recent DX information.

There will be a few good ones on this month particularly the Juan Fernandez CB0ZA expedition. Where there is a + sign after the callsigns other similar calls will be used.

Start	End	Entity	Callsign
Feb 02	Feb 07	Norfolk I	VK9N/ GM4DLG
Feb 03	Apr 16	Senegal	6W7/ ON4AVT
Feb 04	Feb 09	Philippines	DU3/ WE7WJR
Feb 04	Feb 11	Reunion	FR4AV
Feb 04	Feb 11	Vanuatu	YJ0AA & YJ0MN
Feb 05	Feb 12	Aruba	P49X
Feb 06	Feb 20	Antigua & Barbuda	V26CV
Feb 07	Feb 10	Fiji	3D2AD+
Feb 07	Feb 29	Senegal	6W7/ ON4AVT
Feb 10	Feb 18	Georgia	4LK6VHF
Feb 10	Feb 19	Samoa	5W8A+
Feb 10	Feb 24	Juan Fernandez	CB0ZA
Feb 10	Feb 28	Solomon Is	H44MS
Feb 12	Feb 22	Vietnam	XV9WJR
Feb 13	Feb 22	Greenland	OX7AM+
Feb 14	Feb 24	Guyana	8R7X
Feb 15	Feb 28	Sint Maarten	PJ7/ DM7HB+
Feb 17	Feb 27	St Kitts & Nevis	V47JA
Feb 17	Mar 03	Madagascar	5R
Feb 19	Mar 09	Wallis & Futuna	FW8GC+
Feb 20	Feb 27	Mauritius	3B8/

			OK6DJ
Feb 20	Feb 27	Tonga	A35AD+
Feb 22	Mar 07	Temotu	H40WA
Feb 25	Mar 04	St Kitts & Nevis	V4/K1ZN
Feb 26	Mar 15	Cambodia	XU7GNY
Feb 27	Mar 01	Fiji	3D2AD+
Feb 27	Mar 03	Lord Howe I	VK9L/ GM4DLG
Feb 27	Mar 04	US Virgin Is	NP2R
Mar 01	Mar 31	Benin	TY5C
Mar 02	Mar 30	Sint Maarten	PJ7AA
Mar 03	Mar 11	Curacao	PJ2/ DK5ON
Mar 03	Mar 22	Grenada	J38R
Mar 04	Mar 16	Grenada	J3
Mar 08	Mar 20	Tanzania	5H3VJG

Thanks to <http://www.ng3k.com/misc/adxo.html>

February 2024 CONTESTS

Big one for those into RTTY contesting – the CQWPX RTTY on 10th & 11th February is the biggest and most enjoyable RTTY contests going around – a really great contest! N1MM+ Logger is the way to go. Be warned - for the ARRL DX (CW on 17/18 Feb and SSB on 2/3 Mar) the DX is looking for North American stations only and get zero points for working other countries, don't call them! However these stations are often on before and after the contests and are happy to work everyone!!

CQ 160-Meter Contest, SSB	2200Z, Feb 23 to 2200Z, Feb 25
UBA DX Contest, CW	1300Z, Feb 24 to 1300Z, Feb 25
South Carolina QSO Party	1500Z, Feb 24 to 0159Z, Feb 25
North American QSO Party, RTTY	1800Z, Feb 24 to 0559Z, Feb 25
North Carolina QSO Party	1500Z, Feb 25 to 0100Z, Feb 26
ARRL Inter. DX Contest, SSB	0000Z, Mar 2 to 2400Z, Mar 3
Open Ukraine RTTY Championship	1800Z, Mar 2 to 1359Z, Mar 3
YB DX RTTY Contest	0000Z-2359Z, Mar 9
RSGB Commonwealth	1000Z, Mar 9 to 1000Z, Mar 10
South America 10 Meter Contest	1200Z, Mar 9 to 1200Z, Mar 10
EA PSK63 Contest	1200Z, Mar 9 to 1200Z, Mar 10
Stew Perry Topband Challenge	1500Z, Mar 9 to 1500Z, Mar 10
Oklahoma QSO Party	1500Z, Mar 9 to 0200Z, Mar 10 and 1500Z-2100Z, Mar 10
TESLA Memorial HF CW Contest	1800Z, Mar 9 to 0559Z, Mar 10
Idaho QSO Party	1900Z, Mar 9 to 1900Z, Mar 10

Many thanks to

<http://www.contestcalendar.com/contestcal.html>

Contest	Times & Dates
CQ WW RTTY WPX Contest	0000Z, Feb 10 to 2359Z, Feb 11
Asia-Pacific Spring Sprint, CW	1100Z-1300Z, Feb 10
Dutch PACC Contest	1200Z, Feb 10 to 1200Z, Feb 11
Balkan HF Contest	1300Z-1700Z, Feb 11
ARRL School Club Roundup	1300Z, Feb 12 to 2359Z, Feb 16
YLRL YL-OM Contest	0000Z, Feb 17 to 2359Z, Feb 18
ARRL Inter. DX Contest, CW	0000Z, Feb 17 to 2400Z, Feb 18

Below is a reprint of Paul's article from May 2015 – A number of our newer members have asked about dual band antennas and this is an excellent unit.

2m & 70cm Dual-Band Vertical

By Paul McMahan VK3DIP

I recently needed a dual band 2m&70cm vertical for setting up at home, and buying one

would have felt like giving in. The end results were reasonably good so I felt I should share them with the rest of the NERGS.

Some “Theory” and Selecting a Design.

The most important thing to remember is the harmonic relationship between 70cm and 2M ie. $435\text{MHz} = 3 \times 145\text{MHz}$ or the wavelength on 70cm is $\frac{1}{3}$ of the wavelength on 2M. All dual-band verticals (or at least those which aren't just broadband enough to go from 144MHz to 439MHz) exploit this fact.

The simplest dual-band 2M-70cm antenna is the 2M $\frac{1}{4}$ wave worked against a resonant ground plane i.e. radials. A $\frac{1}{4}$ wave at 2M looks like a $\frac{3}{4}$ wave at 70cm so as the impedance at $\frac{3}{4}$ is also a close match to 50Ω , you at least as far as matching is concerned have a good dual band antenna for very little effort. The problem is that the radiation pattern of a $\frac{3}{4}$ wave ground plane (ie. the 70cm pattern) has most of the power going in a large lobe straight up. So apart from cases like talking to overhead satellites you can do better.

The next reasonable set up in order of simplicity is based around the 70cm $\frac{5}{8}$ wave ground plane. You may recall that a $\frac{5}{8}$ ground plane has a pattern that puts most of the power at a low radiation angle and has some dB's of gain over a $\frac{1}{4}$ wave. So it is good at 70cm, also one of the many different ways of matching/feeding a $\frac{5}{8}$ ground plane is to add some inductance in the form of a few turns of wire (simulating about $\frac{1}{8}$ wavelengths, $\frac{5}{8} + \frac{1}{8} = \frac{6}{8} = \frac{3}{4}$) in series with the base to, for matching purposes, make it more like a $\frac{3}{4}$ wave, while the radiating bit is still only $\frac{5}{8}$ of a wavelength long. As you would have noted from before, something that looks like a $\frac{3}{4}$ wave on 70cm can look like a $\frac{1}{4}$ wave at 2M so this set up is reasonably simple and can work well. ie. as a 70cm $\frac{5}{8}$ ground plane / 2M $\frac{1}{4}$ wave ground plane. It does however usually need a good ground plane so a set of radials for both 2m and 70cm is usually employed. But you can do better.

The next up viable setups are based around two 70cm $\frac{5}{8}$ ths, in phase. When centre fed this is often called an extended double zepp, or when end fed the commercial named “ringo ranger” was popular in the 70s. Basically then in the end fed case the two $\frac{5}{8}$ ths have a phasing section between them which in the ranger case was typically a hairpin stub of about $\frac{1}{8}$ wavelengths long (ie. a $\frac{1}{4}$ wave of phase difference between the two arms, an $\frac{1}{8}$ th going out on one arm and $\frac{1}{8}$ th coming back again on the other).

So for matching purposes again this can be set up to make the top element look like a $\frac{3}{4}$ wave. If we do the same series inductance trick at the base then our two 70cm $\frac{5}{8}$ ths look like two 70cm $\frac{3}{4}$ waves which can then in total look like a $\frac{1}{2}$ wave (ie two $\frac{1}{4}$ waves) at 2M. So in this case we end up with two $\frac{5}{8}$ ths in phase at 70cm and a $\frac{1}{2}$ wave dipole at 2M. A good aspect of this set up is that you only need the ground plane/radials for 70cm the 2M (even when end fed) dipole does not need a ground plane.

You can of course do even better by adding further 70cm $\frac{5}{8}$ ths. For odd numbers of 70cm $\frac{5}{8}$ ths the base section is arranged to be a $\frac{1}{4}$ wave at 2M , with the even number remaining being used as phased $\frac{1}{2}$ wave dipoles. For even numbers it is just the dipoles and no 2m ground plane required. As you can imagine however the more you add the more difficult it becomes to come up with an workable arrangement of coils and capacitors to get the phasing and matching even close to correct at both frequencies. Similarly tuning up difficulty increases exponentially. The big advantage of just buying a higher gain dual band antenna is that someone else has done all the experimentation to get this correct and you just have to put it up in the air.

So as a compromise, and especially as the design for it was in the latest RSGB Handbook I have (11th ed. Page 16.26), and as such I was reasonably confident of it, I settled on a two 70cm $\frac{5}{8}$ ths in phase model. The particular design is attributed in the RSGB to PA0HMV. Equivalent commercial antennas are the

Diamond X30, with a number of clones/look-a-likes, as well as the Cushcraft AR-270 which does look somewhat different but is the same thing.

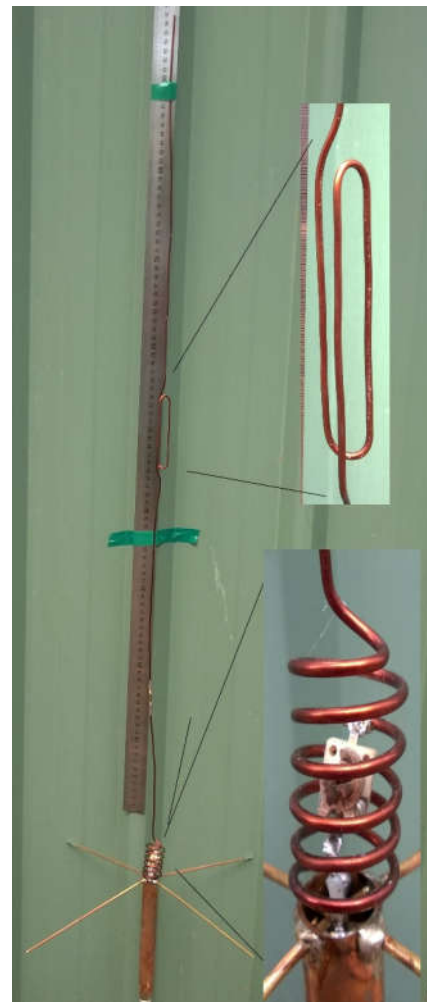
Building it.

My implementation was a bit different to that shown in the RSGB. I kept the main bits of the insides of 2mm diameter wire, which as well as the radiating elements form the matching and phasing sections, almost exactly as per the RSGB design, but the outer cover was made up using miscellaneous plumbing bits sourced from the local hardware store.

Hopefully this can be seen in the photos.

The dimensions as given in the RSGB are :

- Top section - 420mm from tip to top of phasing section
- Phasing section - 83mm, the bottom section is 450mm
- Bottom section – 450mm
- Base coil 5.75 turns 19mm inner diam tap at 4 turns up from base, spaced out to 45mm.
- Series 2M resonator trim cap approx 10pf variable.
- Radials - 173mm
- Phasing section end bends 9-10mm radius. Evenly spaced.



The phasing section looks special but it is just the equivalent of the $\frac{1}{8}$ wavelengths hairpin of the ringo ranger folded up a bit so as to fit inside the outer covering tube rather than sticking out in the weather.

For the outer cover I used basically 20mm plastic pressure pipe finished off with a cap, with a short section of 25mm pipe, joined with reducers, over the fatter part of the coil. I also used only 19mm copper tube for the bottom inner as it was much cheaper than the 28mm specified in the RSGB, and better fitted the female N connector I had to hand.

The bottom reducer and the bottom of the short 25mm segment were notched for the radials, so that when put together only one hole was left for the exit of the radial. The whole lot was (after testing and tuneup) glued up with lots of (blue) pipe glue.



On Air.

After tune-up and installation the VSWR more or less across the 2m and 70cm band was better than 1.5:1. In my case I had the 70cm match skewed towards the lower frequencies so it is better on 432MHz than 439MHz. The 2M tuning was quite touchy, I believe because I used a single turn trimmer with a 34pf top end, rather than a multi turn lower value one (the RSGB design specifies 10pF), simply because that is what I had.

Performance to date has been good with no noticeable difference in signal levels for the 2M beacon from that received with the 2M $\frac{5}{8}$ ths that was previously located in this position, and on the same run of coax, and while not a real test the 70cm beacon is significantly stronger than using that same 2M only antenna. Who knows maybe I will even get to try it out on the NERG net assuming I can remember to be in the shack with the radio turned on at the right time and date.

73 Paul VK3DIP.

VK3CNE REMOTE STATION



Can be used for receive on all HF bands. Provides transmit on 160 metres using a dipole, 80 and 40 metres using a trapped dipole and a Spiderbeam for 20 through 10 metres.

This is available to members, you will need:

- An Amateur Radio Licence – any grade.
- A windows computer with sound card connected to a speaker and a microphone. A PC headset is ideal.
- OR an android tablet or phone and are prepared to pay for the app (less than \$20)
- Download the client from RemoteHams.com install it on your machine and register with RemoteHams.com using your **callsign**. The android app is called RCForb and is available on google play.
- The NERG station is “VK3CNE” Connect to it and request “club” membership and TX capability. Then wait until your membership is approved and away you go!
- Transmit usage privileges are only available to financial NERG members with VK callsigns.

VHF / UHF Remote

The VHF/UHF remote operates exactly the same as the HF version, the Station is “VK3CNE – 9700”



About the NERG

The NERG Inc. Reg No A0006776V <http://nerg.asn.au> The North East Radio Group, Inc. is an amateur radio club devoted to encouraging members and others to enjoy the hobby of amateur radio. It tries not to hang on ceremony and endless reporting but rather

participate in the fun aspects of this fascinating hobby.

MEMBERSHIP FEES

**Due in August: Full: \$35 Family: \$50
Concession: \$25 You will get a renewal notice please wait for this before you pay.**

COMMITTEE

President	David VK3UQ
Vice President	Greg VK3VT
Secretary	Anthony VK3YH/BNR
Treasurer	Greg VK3VT

Committee Members

Mark VK3BYY	Ben VK3UW/SWK
Phil VK3RP/BOY	Chris VK3IK/AWG
Peter VK3PCC	Ed VK3BG

NERG NEWS ARTICLES

The NERG is always happy to receive news, articles, and member's wanted or for sale advertisements for inclusion in the newsletter. Please contact the editor at news@nerg.asn.au

NETS

NERG NETS run on the club's 70cm repeater VK3RMH TX 438.325MHz and RX 433.325MHz both C4FM and analogue. **That means you RX on 438.325MHz and TX on 433.325MHz.** You will need a 91.5Hz CTCSS tone on your analogue FM TX and if you don't want to be bothered with listening to the C4FM digital signals on the output then set your radio to 91.5Hz CTCSS tone on RX as well.

(8.30 – 9.30 pm Non-meeting Thursdays). Feel free to join the discussions.

146.575MHz is used as a general Net frequency by a number of NERG Members and is often used by the DX chasers in the club while hunting DX. Foxhunters use this channel for liaison as well on the third Friday of the month.

Club Sponsor



Margherita Pizza ph 9434 4980
89 Main Road, Lower Plenty, Vic 3093
web www.margherita.com.au

Margherita's Still Sponsor the NERG and provide the excellent suppers that we have come to enjoy. Order your next Pizza dinner from them and tell them you appreciate their support of the club.

Facebook

The NERG is on Facebook – A group has been established and can be found at

<https://www.facebook.com/groups/nergamateur/>

Members are encouraged to join this group