WHAT’S ON IN FEBRUARY

Meeting Thursday 8th March, 2007:
This month Greg VK3VT will be talking about the art of foxhunting. A short meeting will follow Greg’s talk to organise the John Moyle Field Day.

“Foxhunting” to amateur radio operators means the sport of hidden transmitter hunting (so you won’t need to bring your butler, horses, or dogs :-). It comes in several forms and while it is primarily a lot of fun, it is good practice for the more serious tasks of locating emergency distress beacons, tracking wild life, and locating sources of radio interference.

In Melbourne there is a dedicated group that hold vehicle based hunts on a Friday night once a month. There are also regular hunts held during the day and on foot in an orienteering style called ARDF which is also a popular international sport.

Greg will be running a beginners foxhunt on Saturday 10th March starting at 2pm for all those that would like to give it a try. “Sniffers” will be available for loan - just bring yourselves! No licence required. Bring your kids!

The annual John Moyle Memorial Field Day is only a week away on the 17/18 March weekend. We hope everyone will have a go at this popular contest, either joining the NERG station VK3CNE at Mount Macedon or running your own field station. Those unable to escape to the great outdoors can still have a lot of fun from home or catch a few contacts while out mobile. In any event, we hope you’ll be able to swap a few contacts with the NERG’s VK3CNE station. The protocols and rules are easy to pick up as you go – just ask the other stations if you are not sure.

73, Mark Harrison, VK3BYY, NERG NEWS Editor

DEJÀ VU – THE FEBRUARY MEETINGS

Our February meeting featured a talk on Radio Astronomy by guest speaker Mihai Dumitru from the Astronomical Society of Victoria. Amongst other things, Mihai studies radio emissions from Jupiter and is a member of the NASA JOVE project that educates students about Solar and Planetary radio astronomy.

Mihai talked about using simple dipole antennas with conventional amateur receivers such as the ICOM 7000 and WinRadio. Steerable antennas aren’t required – simply adjust the elevation angle of the phased dipoles and wait for the earth to rotate underneath the heavens! SkyPipe software then records and extracts the weak signals from the noise.

We also learnt a bit about the history of radio astronomy too. Karl Jansky pioneering the science back in 1931 when he detected faint radio emissions from the Milky Way on 20.5MHz. Radio astronomers have since named the unit of flux density measurement the “Jansky” in honour of Karl’s work (One Jansky is 10⁻²⁶ Watts/Metre²/Hz).

Mihai and ASV members are building a radio observatory near Officer in Victoria and now have a large dish that is already receiving Hydrogen line signals at 1420 MHz (21 cm).

NASA’s Radio Jove is at: http://radiojove.gsfc.nasa.gov/

Some nice photos of Mihai’s antennas appear here:

NERG, seeking donations to establish an Amateur Radio Communications and Training centre. The centre's aim is to provide courses that will provide complete training in Radio and Electronics to all interested people. Age is no barrier; we train prospective Amateurs from school age through to folk in their 80's, with retirees often seeking involvement in a community based hobby. Funds will be used to purchase teaching aids and radio equipment used in the classes.

Banyule Gives is a service that manages the donation process for community groups in the Banyule Council region. See more at: http://www.ourcommunity.com.au/banyulegives/nerg
The Gainfully Unemployed Group

The first meeting for 2007 of the Gainfully Unemployed Group was held Tuesday, 27 February, at the QTH of Ernie VK3FM. Those present were Jim VK3KE, Steve VK3JSE, Greg VK3VT, Ian VK3XJ, John VK3ZRV, Dave VK3JMB and host Ernie VK3FM.

An apology was received from Gerhard VK3EWM, who was unable to pass muster this time around, as was one from Ted VK3FEAP.

A plentiful array of snack food, and a simple lunch of bread rolls and your choice of fillings, orange juice, fruit salad and ice cream and cream cakes, amply complemented with a plentiful supply of tea and coffee, all prepared and presented by Ernie’s XYL Jan ensured that the conversationists never ran out of gas during the interminable discussions about anything and everything.

The next meeting will be at Dave’s VK3JMB QTH on Tuesday 27, from 10.00 am. I hope to see you there for a chat.

Regards - Ernie VK3FM

Listen out on the NERG chat channel of 146.575 MHz during the day for directions, and for the latest DX spots.

The NERG John Moyle Station

NERG has permission from the park rangers to again use its spot on the Northern peak of Mount Macedon. A dozen or so NERGs and associates are expected to operate under the club callsign VK3CNE. Newcomers are most welcome, regardless of experience.

Further planning and photos of last year’s event can be viewed at the NERG website: www.nerg.asn.au/Fieldday2007.html

Contest rules can be found online at the NERG and WIA web sites, and appeared in the Amateur Radio magazine.

The plan is to operate the club call VK3CNE as a 24-hour, multi-operator, all band, all mode station again this year. They’ll be located on the northern peak of Mt Macedon, at the end of Lion’s Head Road Location: Lat: 37° 22’ 6”S; Long: 144° 36’ 42”E; Maidenhead Grid: QF22HP (see directions below).

A group of tents, caravans, and camper-trailers serves as the station. Various masts, towers and wire antennas are spread around the tent city with ‘armstrong’ and powered rotated masts close to the respective operators.

We aim to have operators working on every active band. Some HF operators will look after several bands because they don’t all become active at the same time of day.

We will have an operator on each VHF & UHF band, usually with two rigs each – one for SSB with a high gain horizontal Yagi, and one for FM with a vertical. This way we can monitor both modes when things are quiet and avoid missing DX stations when they appear.

The contest starts at mid-day on Saturday 17th. Activity gets busy around the start and end of each 3 hour re-work block so if you want a chat then call us half way through a block while it’s quiet! Blocks run: Saturday midday-3pm; 3pm-6pm; 6pm-9pm; 9pm-midnight; midnight-3am; 3am-6am; 6am-9am; 9am-midday Sunday.

Getting to the NERG Station

The NERG station for the John Moyle Field Day on Mount Macedon will be located at the end of Lions Head Road.

The quickest way to the hill from Greensborough is to take the Calder Highway west to the Calder Highway. The turnoff is the next after the Melcomore drive exit. Follow the Calder past Sunbury.

Turn off towards Mount Macedon (that’s the town and mountain) before reaching Macedon (that’s a different town!). The Mount Macedon turnoff leaves the highway from the left hand side. Turn right immediately to pass under the freeway. Continue through the roundabout and on to the township of Mount Macedon (stop here briefly for an early coffee break at the general store if required!). Continue up the very steep hill leading out of the township to a Y-intersection. Follow the right hand fork towards the Camel’s Hump and Woodend. Do not go left to “The Cross”. Be careful not to miss the dirt road appearing on the right just 100m from the Y-intersection. Turn Right into the dirt road, and then turn Left almost immediately into Lions Head Road. Follow the road past the Days Picnic Ground and on past Sanatorium Lake to the very end of Lions Head Road - that’s where we’ll be!

Some team members will be setting up on Friday afternoon, with the majority arriving around 9am to set up the rest of the station for the first contact at mid day.

www.youtube.com/profile?user=vermontcreekbed

The latest contributor of amateur radio videos available on the Internet is Jack, VK3WWW. There are several short videos on field days, including the John Moyle, a balloon launch, and some Islands On The Air DXpeditions.

Well worth a look if you’d like to see how portable stations work and the kinds of places they go.

Hamfests

Eastern and Mountain District Radio Club has the hugely popular hillbilly’s White Elephant Sale at the Great Ryrie Primary School, Heathmont opening at 10:30am on Sunday 25th March. $6 entry. New and pre-loved radio and computer gear, BBQ, food, free tea & coffee. Talk-in VK3REC. Table bookings before 16 March phone Colin 0414879682 or email wes2007@emdrf.com.au.

Centre Victoria RadioFest - a new event on Sunday 22nd April, at the Kyveton Racecourse, 10am-3.30pm, $10 admission. Just 50 minutes up the Calder Highway. A collaboration between the Midland Amateur Radio Club, Central Goldfields Amateur Radio Club and Amateur Radio Victoria. New and used gear, Traders, seminars, foxhunts. For further information see: radiofest.amateurradio.com.au
Last Saturday saw more than a dozen NERGs, families and friends take to the skies in gliders. They were guests of the Victorian Motorless Flight Group and the Geelong Gliding Club at a shared air field in Bacchus Marsh.

A week or so earlier at a special NERG meeting we were introduced to gliding by George Brindley from the VMFG. George, a very experienced pilot and instructor, lead us through the safety procedures and what would take place on the day.

All flyers enthusiastically want to thank the two clubs for their efforts in making it a wonderful day.

The photos are of the GGC Puchacz intermediate training 2 seater sailplane. The name Puchacz, pronounced "puhatch" is Polish for Eagle Owl. The Australian registration for the GGC owned aircraft is VH-OWL, quite fortuitous! Basic Aircraft Data:

- Wing Span: 16.67m
- Length: 8.38m
- Empty Glider Mass: 360kg
- All up mass: 570kg
- Load factors (acceptable "g" loading): +5.3/-2.65
- Glide ratio: 1m fall in 30m @ 85kph
- Stall speed: 60 km/h
- Never Exceed Speed: 215 km/h

This aircraft is approved for extended aerobatics.

Further information on gliding can be found online at:
http://www.vmfg.org.au/ and
www.gliding-in-melbourne.org
If you listen to the NERG net in the small hours of the morning you may hear NERG members John VK3BIZ and myself VK3BYY waffling on about mysterious things called F-P-G-A’s. In case you’ve been wondering, FPGA stands for a Field Programmable Gate Array. They are digital integrated circuits that can be made to perform almost any tasks. More on how they work later...

The good thing about FPGAs is that you can replace vast numbers of conventional chips and even whole microprocessors with a single FPGA chip. If you don’t like the results, or want to change its operation, then you just edit some computer files and load in a new configuration. No soldering and no new PCBs required!

One of the many things that John has been doing with FPGAs is to make them function as microprocessors (when he’s not so busy we’ll get him to design a digital amateur transceiver as a NERG project!). Lately however he’s been helping to squeeze all the circuitry from the historic Digital Equipment Corporation PDP-8 mini-computer into a postage stamp sized FPGA chip.

The PDP-8 was the first really affordable mini-computers to appear on the market way back in 1965. It still has an enthusiastic following by computer historians and hardened hackers everywhere.

John has been working with an international group of retro-computer enthusiasts on this project because they can’t buy new PDP-8 computers these days. The FPGA emulates the real thing, allowing programmers to run their favourite tick-tack-toe games on a virtual glass teletype screen in much the same way as they did back in the ’70s. The only thing missing is the sound of roaring cooling fans, the smell of hot teletype oil, and the millions of paper dots that get stuck in the carpet (from the paper tape punch machine!).

Despite its name, the PDP-8 was actually a 12-bit machine with a standard magnetic core memory of 4,096 bytes. It was constructed out of thousands of discrete transistors mounted on hundreds of little plug-in circuit boards, making the machine the size of a bar fridge. The circuitry in an FPGA on the other hand is incredibly small – the whole PDP-8 emulator fits into one corner of the million gate Xilinx Spartan-3 FPGA chip (its about 10mm square x 2mm thick).

So how do FPGAs work? They are basically unfinished integrated circuits. All the logic circuits such as gates, flip-flops, memories and oscillators are all there but nothing is connected together. Inter-connecting “wires” running between these blocks are selectively turned on to form a functioning circuit. This ‘configuration’ of the FPGA is setup using a computer with either a schematic editor or a special computer language such as VHDL or Verilog (just like writing a program). The configuration is usually stored in a small re-programmable memory which helps configure the FPGA when it is powered up. Sometime a master microprocessor configures the FPGA on the fly, allowing the FPGA to change function while in operation. FPGAs are often used when producing a full custom chip would take too long or be too expensive, especially for small runs. It also allows manufacturers to manufacture the hardware for a new product well before the FPGA configuration is finished. In some cases manufacturers use one standard hardware product to suit many applications simply by loading in the required functions into the FPGA and sticking on a front panel label literally as the product leaves the factory. They can also make changes in the field by issuing software updates to fix bugs, add new functionality, or adapt to new industry standards as they are ratified.

See John’s web page for various other FPGA projects he’s been working on at:

members.optusnet.com.au/jekent/FPGA.htm

There is also a great PDP computer collection by Henk Gooijen, PA8PDP, at: www.pdp-11.nl (don’t miss photos of his great RACAL communications gear collection also!).

### 2007 ARDF/Foxhunt Calendar

Events from the ARDF web site – check for updates and further details at www.ardf.org.au and www.melbfox.com.au

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<th>Type</th>
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<td>Northern Summer Series - Research</td>
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<tr>
<td>Other</td>
<td>Thu, 8 Mar</td>
<td>NERG meeting – Foxhunting talk</td>
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<td>Other</td>
<td>Sat, 10 Mar</td>
<td>NERG Beginners radio Foxhunt</td>
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<td>FoxHunt</td>
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<td>Friday Mobile Foxhunt</td>
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<td>Other</td>
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<td>FoxHunt</td>
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<td>Foxhunt</td>
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<td>Inter</td>
<td>Sat, 26, 27 &amp; 28 May</td>
<td>Shropshire ARDF Festival</td>
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<td>FoxHunt</td>
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<td>Bush</td>
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<td>Bush</td>
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<td>Inter</td>
<td>Sat, 18 Aug</td>
<td>Friendship Radio Games - 2007</td>
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<td>Inter</td>
<td>Fri, 14,15 &amp; 16 Sept.</td>
<td>Region 2 ARDF Championships, USA</td>
<td>Lake Tahoe</td>
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<td>Inter</td>
<td>Sat, 6 Oct</td>
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<td>Inter</td>
<td>Sat, 27 Oct</td>
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<td>Bush</td>
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2007 AMATEUR RADIO EVENTS

MARCH

Until Mar 31 - Special event station 8J1ANT - Celebrates 50th anniversary of the Japanese Scientific Research Expeditions in Antarctica. QTH JARL headquarters.

Mar 10/11 - The 70th Commonwealth Contest, a team event between UK, New Zealand, Canada, India, and Australia. See www.contesting.co.uk/hfcc/rules/rberu.shtml

Mar 17-18 - John Moyle Field Day contest - NERGs operating from Mt Macedon - Contest aims to encourage portable operation and provide training for emergency situations.

Mar 25 – (Sunday) EMDRC White Elephant Sale - Great Ryrie Primary School, Great Ryrie St, Heathmont, door open 10.30am. wes2007@emdrc.com.au

JULY

July 7+8 - GippsTech - The premier conference for VHF, UHF & SHF enthusiasts in Australia. Held at the Gippsland Campus of Monash University in Churchill, about two hours drive east of Melbourne. www.qsl.net/vk3bez/index.htm

OCTOBER

Oct. 20+21 - The 50th Jamboree On The Air (JOTA) involves 500,000 Scouts and Guides worldwide contacting each other. NOTE: Confirm details closer to the posted date – some will change.

UTC dates may be used for International events

Gathered from AR Vic, WIA, ARRL and various clubs.
The NERG Inc. RegNo A0006776V http://nerg.asn.au

The North Eastern 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 each August):
Full: $30 Family: $40 Concession: $20

Send to: NERG Treasurer, PO Box 270, Greensborough, Vic., 3088

Committee
President Greg Williams VK3VT 9432 0563
Secretary John Weir VK3ZRV 9431 0667
Treasurer Marg Baxter VK3VOJ 9467 1253
Committee Betsy King VK3BBK
David Aston VK3THY
Peter Cosway VK3DU 9379 3626
Don Haslam VK3KDT 0409 024 597
Repeaters Mark Harrison VK3BYY 9435 3043

Meetings
2nd Thursday of each month at 7:45 PM (excepting Dec. & Jan.)
Briar Hill Community Hall, 126 Mountain View Road, Briar Hill
(Near Sherbourne Road intersection) Melway map ref 21-C3

Classes
NERG occasionally runs classes and exams for Amateur licences

NERG News – March 2007

Next Meeting: 7:45pm Thursday 8th March 2007

Foxhunting – the art of locating hidden transmitters

2007 Calendar (NERG Activities in Bold Type)

Mar 8 NERG Meeting – Radio Foxhunting for beginners - followed by....
Mar 10(Sat.) Beginners radio Foxhunt, Briar Hill Hall, 2pm, 80meters & 2meters.
Mar 17+18 John Moyle Field Day – VK3CNE portable contest station at Mt Macedon
Mar 25 Eastern and Mountain District Radio Club White Elephant Sale, Sunday open 10:30am
Great Ryrie Primary School, Heathmont (Map 49 K-11)

April 12 NERG Meeting – To be advised
April 22 Centre Victoria RadioFest (Sunday) Kyneton Racecourse, 10am-3.30pm, $10 admission.
April 26 NERG Dinner at Di Riccardos
May 10 NERG Meeting – To be advised

Callsigns and Repeaters (25km North East of Melbourne)

Club call - VK3CNE http://www.qsl.net/vk3cne
6m rpt VK3RMH FM 52.550 MHz in 53.550 MHz out
70cm rpt VK3RMH FM 433.25 MHz in 438.325 MHz out
IRLP node 6350, EchoLink node 140587
6m bec’n VK3RMH CW 10 Watts 50.295 MHz – Off air
10m bec’n VK3RMH CW 20 Watts 28.2565 MHz
Packet Radio VK3CNE2m 144.700 MHz, 1200 bps
VK3CNE-1 for mail etc; VK3CNE-7 for the DX Cluster.
Occasionally home to the Scout Radio & Electronics Group repeater:
2m VK3RSR FM 146.375 MHz in 146.975 MHz out

NETS
NERG NETS run on 146.575 MHz FM Simplex (8.30 – 9.30 pm Thursdays). Please join the discussions. NERGs often monitor this frequency and the 70cm VK3RMH repeater.

WEB Sites: http://nerg.asn.au and http://www.qsl.net/vk3rmh

NERG News submissions and comments invited:
editor: Mark Harrison VK3BYY
ph: 9435-3043 hm
post: 266 Nell Street West, Watsonia, 3087
email: news@nerg.asn.au

next meeting:

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