BREAKOUT

The Newsletter of the Hastings and Napier Amateur Radio Clubs

Hastings Branch 13 NZART – Napier Branch 25 NZART

Volume 10, Issue 4, April 2012

Hastings Br 13 Club Calls
ZL2AS
ZL2QS

Napier Br 25 Club Calls
ZL2GT
ZL2G

IRLP Node 6793 147.250

Branch Nets
9.00 AM Sunday Morning
3615 Hz
439.175 mhz

Editor
John Newson
ZL2VAF

Pakowhai Hall – the location of the next Branch 13 meeting

http://groups.yahoo.com/group/zl2as/

Join the KIWI DX Group
Talk to ZL2AL for Details

Inside This Issue

HASTINGS BRANCH 13

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Club Call:	ZL2AS and ZL2QS		

Club Nights: Fourth Wednesday each month at 7.30 pm Surf Club Rooms, Windsor Park, Hastings

COMMENT FROM THE COLONEL

Please note that the next meeting of HBARC/Br13 is to be held at the Pakowhai Hall on 25 April at 7-30pm.
At the last Br 13 meeting it was agreed that for the next Br 13 meeting we would meet at the Pakowhai Hall with a view to making a decision at that time in relation to changing our meeting venue for the future. In part this direction has come about by the need for a bit of storage area for our Club. The plan is to have a look around and in the proposed venue and decide if this is the way the club should go. Certainly to date there has been considerable support for the proposal and the economics are quite acceptable and manageable.
So, join us there and be part of the decision making group looking after the future of our Club.
We especially ask members from Br 25 to come along too.....I'm sure we can find a biscuit and cuppa afterwards to round off the night.
Clifton Accessor requires some ground work.....in particular a partial reconstruction of the supply line and cable going up the hill to the container.
Anyone willing to lend a hand or supply "stuff" for the day please make contact with Rob ZL2US.....give Rob a call and see what you can contribute.
PLEASE REMEMBER though that the supply cable is ALIVE.....while not 230volts it's not one to mess with. Safety is a prime requirement on the day.
Clifton Bay Cafe may even see us for a visit after the work's been done.
Complete call signs seem to be maintaining there come back in the area I'm pleased to observe.
A reminder that the Lighthouse Weekend is coming up. Already there are two known teams that are going to activate the lower NI East Coast. While it's definitely a "boys weekend away" it's also a time for great amateur radio action. See if you can muster up a third team and work the world from ZL.
Recently another "Training Weekend" was held and I'm pleased to say that we have two more new hams on the air. Welcome to Ray Barlow ZL2RB and Jason Paynter ZL2ON.....give them a call when you hear them on so they can stack up there 50 required contacts before they experience the HF bands.
Enjoy the hobby Jason and Ray.

Rob ZL2US (HBARC/Br 13 President/Chairman)

NAPIER BRANCH 25

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Committee Meetings: *Third Monday of the month 7pm at Club Rooms*

Club Calls: ZL2GT, ZL2G

Club Nights: First Wednesday each month (except January) 7.30pm at the Club Rooms: 123 Latham Street Napier

Napier News...

Hi all, not much to report this month, the May meeting topic will be discussion and voting on remits to National Conference, so bring your March/April copy of Break-In. Warren ZL2AJ will be at our meeting in his capacity as NZART Councillor to answer any questions on Council matters.

I had an approach recently from a group of deerstalkers who wanted to know how to ''buy'' amateur radio licences so they could use their VHF hand-helds in the bush. Apparently the radios had been purchased through an internet auction site, and they had been using them until intercepted by the MED.

From casual observation, there is a fair amount of second-hand amateur radio gear and so called ''free-band'' 10/11/12 metre radios being sold by people who are obviously not licenced and neither know nor care that the buyer has to be licenced . I've challenged a couple of these vendors and the response is usually ''so what''.

If you are offering amateur radio transceivers for sale, please keep our bands free of unlicenced users by making sure you sell to licenced amateurs only.

And, in the same vein, there are still QSO's occurring on 670 and 840 with no callsigns. C'mon guys, you know the rules, even if you know who you are talking to, use callsigns. Apart from the fact that it IS the rules, you never know who is listening.

And finally, this year will be 725 Taraponui's 30th birthday. Happy hamming.

73's
ZL2TC

Analysis of 2m Es Opening, 3 Jan 2012

Roger Harrison VK2ZRH

As reported in last month's column, 2m propagation put on a spectacular show on this day over more than five hours, from about 2300 UT through 0340 UT. It seems a new VK-ZL 2m record may have been established with a contact between Brian VK5BC/p at Corny Point (PF85MC) and David ZL2OK in Takapau (RE89EX), a distance of about 3493 km; 5x8 reports sent both ways. Brian worked all ZL call areas, starting at 2300 UT (2 Jan) with ZL1TPH at RF65IN. This was followed just after 0100 UT with ZL2WHO (RE79TP) and ZL2OK in quick succession. Then, just after 0200 UT, he worked ZL4PM (RE66DL) and ZL3TY (RE57OM).

As all four paths exceed 3000 km, the propagation was clearly double-hop Es. Or maybe *more*! A propagation analysis of the longest path, VK5BC/p to ZL2OK, revealed that it was most likely mixed 2-hop

and 3-hop! Figure 1 shows the four paths, the 2-hop ionospheric reflection points and the sea reflections. The map is an azimuth-equidistance projection, centred on VK5BC, thus showing great circle paths.

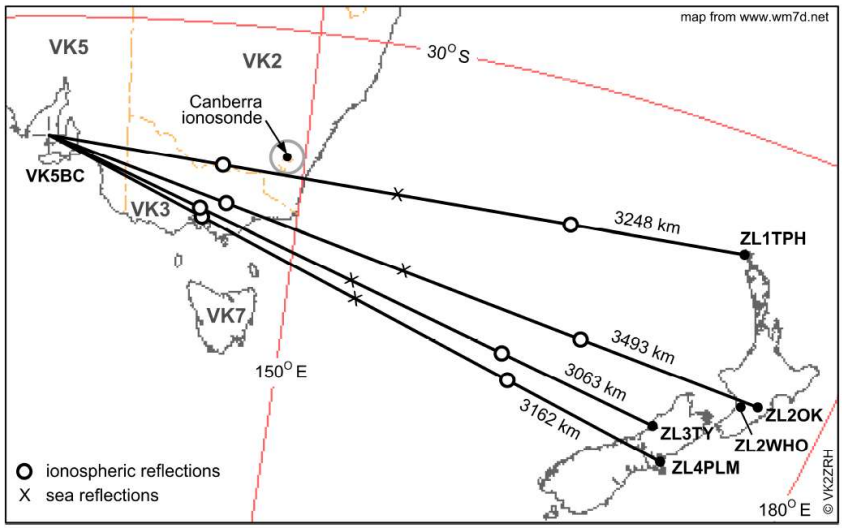

Figure 1. Geographic view of the VK5BC – ZL contacts.

The IPS ionosonde at Canberra is relatively close to the likely ionospheric reflection points at the western end of the paths. As Es clouds drift in a westerly to north westerly directions at speeds ranging from about 70 metres/sec to 120 m/s in this region, the ionograms relating to the reflection points grouped over Victoria are *earlier* than the times of the contacts. The geographic spread of contacts indicated an *extensive* Es cloud (or cloud cluster). Such an extensive Es cloud drifting generally west at 75 m/s will pass the meridian of the Canberra 'sonde and take another 55 minutes to pass the meridian through the westerly reflection point on the VK5BC-ZL2OK path. The contact occurred at about 0107 UT. The ionogram for 0013 UT (54 min. earlier) shows an intense, spread Es trace at 94 km, with a top frequency (ftEs) of 13.5 MHz. The ionospheric 'split' at Canberra is 0.8 MHz, so the penetration frequency, foEs, is 12.7 MHz. As the contact was confirmed, it can be safely assumed that similar or better conditions prevailed further east along the path, over the Tasman Sea.

The Es layer at the time was 'crinkled' or 'rippled', providing the conditions for *petit chordal hop*, which dramatically raises the MUF [1,2]. With foEs at 12.7 MHz, the electron density of the rippled Es layer was sufficient to support propagation with an MUF of about 145.7 MHz on this occasion. As the raypath elevation angles calculated for the VK5BC-ZL2OK path fall within the range that *petit chordal hop* will support [1,2], I investigated whether 2-hop or 3-hop propagation supported the VK5BC-ZL2OK contact.

For 2-hop propagation on this path with Es at 94 km, the raypath elevation angle is 2.1o. As it happens, VK5BC was using stacked 5-element Yagis at about 7m height. The vertical radiation pattern would have the primary lobe at 3o elevation, and the next lobe at about 7.5o. At 2.1o, the gain is only about 1 dB down. ZL2OK has a 16-element Yagi, with the primary lobe at 2.0o elevation, and the next lobe at 6.2o. The primary lobes of the antennas at each end are clearly well-matched to the 2-hop raypath elevation angle. However, the 3-hop raypath elevation angle turns out to be 6.5o, which is accommodated quite well by ZL2OK's Yagi, while the response of VK5BC's 5/5 array is about 5 dB down. It's entirely possible that both 2-hop and 3-hop modes carried the signals. Figure 2 sets out the general geometry. Discussion on path loss is a subject for a GippsTech conference sometime!

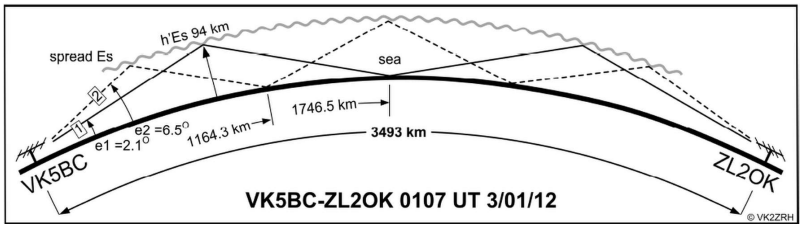

Figure 2. Propagation path analysis of the VK5BC-ZL2OK contact. Path 1 is 2-hop, path 2 is 3-hop; it's likely that both supported the contact.

From my viewpoint, the other notable contact of the day was spotted at 0340 UT, between ZL4DK and VK3DUT, with a 5x2 report. Path distance is 2068.3 km which, at first glance, looks like "classic" single-hop Es. An analysis of the propagation revealed that that's unlikely, and the most likely mode is 2-hop. Figure 3 lays out the path parameters.

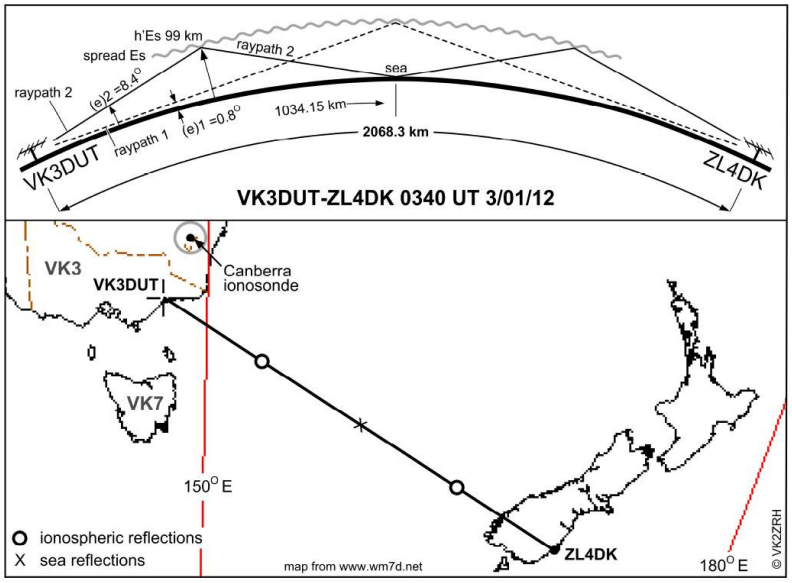

Figure 3. Path parameters for the ZL4DK-VK3DUT contact; the 2-hop path prevailed, it seems.

The Canberra ionograms had intense, very spread, Es at a height of 99 km having ftEs values above 15 MHz for over two hours (0458 to 0718 UT), thus giving a strong indication of the passage of the Es cloud, or cloud cluster and the extent of Es over the Tasman during the opening.

For 1-hop Es at a height of 99 km, the ZL4DK-VK3DUT raypath elevation angle would be 0.8o! VK3DUT was using his 4x13-ele Yagi array (13m high), while ZL4DK was using a 6-ele Yagi (about 8m high). The primary lobe of VK3DUT's array is at about 2o elevation, but the response at 0.8o would be about 9-10 dB down. ZL4DK's antenna primary lobe is at about 3o elevation and the response at 0.8o would be about 15 dB down. Not encouraging.

However, the raypath elevation angle for 2-hop Es propagation is 8.4o, which affords a better match to each of the antennas' elevation radiation patterns. In ZL4DK's case, the second lobe response at 8.4o elevation is only about 0.5 dB down from the primary lobe. In VK3DUT's case, the raypath elevation angle falls on the third lobe of the elevation pattern, again about 15 dB down, ie. the antenna has pretty much the same gain at 0.8o and 8.4o. The stronger signal would have been from the 2-hop path. Given the 5x2 signal report, the 1-hop signal would have been well below the 2-hop signal strength.

The path MUF for 1-hop propagation ZL4DK-VK3DUT works out to be around 207 MHz, while for 2-hop propagation, the MUF is about 156 MHz [1,2]. These values were calculated from the 0503 UT ionogram, with an ftEs of 19 MHz (foEs of 18.2 MHz), which is indicative of the Es in the vicinity of the reflection point closest to VK3DUT an hour and twenty minutes before the 0340 UT contact, taking the Es cloud to have drifted westward at about 75 m/s.

Sporadic E always has surprises in store!

Thanks to Brian VK5BC, Norm VK3DUT and David ZL4DK for help in providing information for these analyses, and Adam VK4CP/VK4GHZ for the VKLogger, a wonderful resource.

[1] "On Sporadic E, VHF Propagation, MUFs and Petit Chordal Hop", Roger Harrison VK2ZRH, DUBUS 2/2011.
[2] "A New Model of VHF Sporadic E Propagation", Roger Harrison VK2ZRH, at www.vklogger.com/forum/viewtopic.php?f=43&t=9832.

PIX FROM THE Br13/25 BBQ NET

A couple of pix taken at the rural Br 13/25 net hosted at the QTH of Craig ZL2ACJ . Sunday 22 April 2012.
Many thanks Craig and Suzy, a great morning.

The Silver Fern Car Rally 2012

I have been tasked with organising comms for this event.

The Silver Fern is a 7 day international marathon rally. It is being held in the North Island in the 2nd week of November 2012.

I am looking for operators that fit one of the following profiles.

1) A mobile operator that wishes to follow the rally through its 7 days. You must be HF ready for 80m and 60m portable communication. VHF while mobile, HF when onsite. Fuel and accommodation will be provided.
2) A local who wishes to participate as the rally passes through your area. This could be mid week. HF portable and VHF mobile required.
3) Base HQ operators. For part or all of the 7 day event. The base is likely to be in Hamilton.

If you are interested please indicate your interest to me via email. If you have worked car rallies before (and not one I've organised) please let me know so I know your capabilities.

warren@zl2aj.com

Some info is at http://www.silverfernrally.co.nz/rally2012/index.php

The course is to travel from Tauranga through Rotorua, Gisborne, Hawkes Bay, Palmerston North, Ohakune, Taupo, finishing in Hamilton.

NOTICES

HB Car Rally
Saturday 9th June 2012

Silver Fern Car Rally
November 10th - 18th 2012

Gisborne Car Rally
25/26 August 2012

Buy – Sell - Etc

WANTED TO BUY

- a non inductive 450 ohm 200w resistor
- 2m/70cm dual band ant.
- a set of headphones (low impedance)
- an 80m/40m/20m base type HF vertical ant.

Contact Lamont Kirton ZL2ALK, Esk Valley, Napier
zl2alk@yahoo.com or 022 1502883