FREQUENCIES VHF, UHF, SHF NEWSLETTER NZ

This newsletter is compiled by Kevin Murphy ZL1UJG to promote operational and construction activity on the VHF, UHF and SHF Amateur Radio allocations in New Zealand (and overseas).

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Hi Everyone,
It hasn't been a good start to 2007.
A fellow worker (of about 21 years for me personally) passed away suddenly.

I have recently developed a condition, which the doctors believe to be "Diabeties Insipidus" or "Water Diabeties", which leaves one feeling rather drained, in more than one way! I await Specialist tests. A search on the Internet will reveal further details, for those interested.

November December 2006 VHF Scene

There was a good DX opening to Australia, and good activity during the Microwave contest. Bob ZL3NE/1 is starting a propagation report.

DX

There were a number of DX openings, with some good DX to VK, and also good propagation from Auckland to Wellington. There were some ZL stations active during the ZL - VK opening, with ZL1AKW, ZL1TN, ZL1TPH, ZL1BT , ZL1IU and ZL3TY reporting that they were active.

Steve reports first on his activities:-

Opening to VK: Friday 13/10/2006 – Sunday 15/10/2006.

With ZL1BT and ZL1IU working VK stations on Friday evening and not hearing anything at all from my home station to the west, I decided to drive north the next day and operated portable from my car at a site called the Bryderwyns.

The basic portable 144 MHz station comprised of a TS700A transceiver and my Mirage B10/300G Amplifier plus a 6 element horizontal Yagi, perched at 310 metres ASL with a good take off. I included my spare 1.3 GHz 10 watt Transverter and a 33 element loop Yagi. My other higher spec 1.3 GHz Transverter was at home having a long overdue rebuild.

Stations worked on 144 MHz SSB:-

VK2ZT, VK2DVZ, VK2IF, VK2ARA, VK2EI, VK2MAX, VK2BA, VK2APG, VK2BZE, VK2FHN, VK2BHO, VK4JMC, VK4LC, VK4APG, VK4WS, and VK4TZL.

Some contacts required headphones for a Q5 QSO, while others were 59. Modest equipment is only required to work these stations. I had 2 contacts with VK2EI and VK2MAX on FM simplex. The signal was limiting on FM with only a small amount of noise.

I also worked VK2DVZ on 1.296 GHz SSB, for the first for this season. Ross is QRV with a 2.4m dish and 100 watts at the feed. Path distance is 2075 km. My basic 1.296 GHz setup comprises of an ICOM 202 SSB transceiver, MMT 1296 transverter and 10 watt brick Amplifier combined with a 0.38dB LNA. Head phones were not required to work Ross. This is an indication of what can be expected from ZL stations on

the 23cm band with a similar station and a reasonable take off. There was very fast QSB on 1.296 GHz with fades about every 2 seconds whereas fades on 144 and 432 MHz were up to 10 mins apart. (Nice report Steve)
Dave ZL1AKW at his home QTH (Tauranga RF82CG) worked VK2EI, VK2AH and VK2MAX on 144.1 MHz during mid morning on the 14th October. Dave also heard a few other VK's active but no further contacts were made. Newcastle Ch. 5A ABC TV was quite audible as well. (Nice to hear a report from Tauranga).
Bob ZL3TY reports that the opening to VK on 12 - 14 October extended as far south as Greymouth, however it only reached the area of VK2 around Sydney. He worked four VK2's starting Thursday night, Channel 5A sound and 148MHz pagers were in and out during the opening. (It is interesting to note that the path opened on Thursday for ZL3, while the ZL1's had to wait until Friday)
Although the Hamilton 144.256 MHz beacon was heard at weak strength by the VK's, the scribe didn't hear any VK's.

The path opened from the Auckland region to the Wellington region (~ 550 km distance), around Wednesday September 20th. Steve ZL1TPH reports hearing the Wellington VHF Group 144.275 MHz Beacon at 5/5 from his home QTH in Orewa. Steve also comments that the tropo ducting is better at the start of the season and could
well support higher band contacts at the same distance.
Ian ZL1AOX also heard the Wellington 432.275 and 1296.275 MHz beacons during the opening. No DX was reported to have been worked, by anyone, but it shows how important that beacons are in indicating band openings.

Repeaters
Eddie ZL2AQY and Michael ZL1ABS visited Klondyke on Friday 27th October. The PC for the Data node was completed and a RX aerial was also connected for the 9k6 Data repeater on 438.350 MHz. 144.5625 MHz is operational with APRS data being linked from 144.575 MHz simplex. The Power meters were also read, and batteries also checked.

Microwave
These are reports sent in for the activities during the Microwave contest during October.
First a report from Steve ZL1TPH
During the contest I worked theTaranaki stations of Ted ZL2TAX [310km] and Ray ZL2TAL [295km] on 5.76GHz from Moirs Hill, south of Warkworth.
(See adjacent picture of Ray)
Ray was using a DXR700 transverter and 1.2m Wellington VHF group dish with simple dipole feed. Ted was using also a DXR700 transverter and a commercial 1.2m dish with precision feed. Both DXR700's use 1.1232 GHz crystal oscillator injection instead of the internal PLL. We now have a reliable SSB link with these two stations. We encourage more DXR700 conversions to 5.76 GHz. (Both Simon and I also use DXR700 transverters)
With both Ted and Ray not having any contacts so far with their new converted 5.76GHz boxes it was decided to line up on 10.368 GHz first with Ted. An easy RS55 contact with his existing 1.2m dish. Ted then went to a commercial prime focus dish with feed on 10.368 GHz for an easy RS58 contact. Simon behind me at 23km then worked Ted at 333km on 10.368 GHz.
I then came up on 5.76 GHz and a easy contact with Ted on 5.76 GHz at 310km. Simon once again came from behind and worked Ted at 333km on 5.76 GHz SSB.

Then Ray came up on 5.76GHz at 295km. It really took a while to find Ray. Once we did I completed with Ray ZL2TAL 53 – 55 and exchanged contest numbers. Then Simon banged in again at 318km and worked Ray at 318km SSB.
We had good contacts in the microwave contest into the Taranaki region of ZL2. Band conditions were not enhanced and the effort on the bench converting the DXR700 is worth the hours spent, with great contacts to our friends. I also had a good contact with Dave ZL1AKW on 1.296 GHz at ~ 200km

A report from Simon ZL1SWW
What a great afternoon! A small group of us partook in the Microwave contest with activity running on the Sunday morning through to the early afternoon. Thanks to the stations that turned up on the bands. Stations heard were, ZL1TPH, ZL1BK, ZL1AKW, ZL1TBG, ZL2TAX (aka ZL2IP) & ZL2TAL. Without these stations active, we wouldn't have a contest and the funvalue.
Highlights of the day were Steve ZL1TPH and I (ZL1SWW) working Ted ZL2TAX on 10.368 GHz, then on to 5.76GHz for the first QSO's on Ted's new DXR700 transverter. Good signals and copy on both these bands.
Ray ZL2TAL went to his son's place with 4 foot dish under his arm to work us on 5.76 GHz. After a bit of tooing and froing, we finally heard him. Thank goodness for Ray's warbler as it distinctively cuts through the noise and makes for an easy ID. Max distance today at about 330km from Ted ZL2TAX to Simon ZL1SWW. Steve ZL1TPH at about 310km to Ted.ZL2TAX
Managed to work all bands I had with me, 925, 1296, 2424, 5760 & 10368. Although weather was very windy with big problems keeping Yagis and dishes pointing straight. Sadly I lost my swivel mount when a big wind gust blew the10 GHz transverter off the tripod onto to the ground. Lucky there was no damage to transverter or the dish. There must have had hairline crack in the diecasting that let go. 10 GHz now destined to run from the ground until tripod is fixed . Battery problems plagued me today with several lost contacts on 10.368 GHz due to PLL going out of lock on TX that was caused by low battery voltage. Seems I need new batteries. I had to run the car while working 10.368 GHz to charge the batteries.
Simon ZL1SWW thanks Steve ZL1TPH . for work, in getting Ray ZL2TAL and Ted ZL2TAX active on the higher Microwave bands. The scribe would also like to thank Tom ZL1THG for his work on Ray's (ZL2TAL) equipment for 2.424 GHz and 3.399 GHz.

General

The weekend 2m meteor scatter skeds continue each Saturday and Sunday at 8am local time on 144.230 MHz. Southern stations have a sked each Saturday morning at 7am with Rex VK7MO on 144.330 MHz using FSK441, ZL stations TX first period. Anyone wanting to know more please contact zl3ty@nzart.org.nz.
Murray ZL3MH is active on FO29, and has recently acquired a Yaesu FT101ZD Mk3, which he gave a tidy up. This is being setup for use with his transverters.

EME

Rod ZL3NW reports on his acivities
Six metre EME activity has increased on a world wide basis although nowhere near the activity that is currently on 2m EME, as 6 metre EME is more difficult. Faraday Rotation can be very frustrating on this band. It is interesting if not frustrating how signals vary at any given time at various parts of the globe. I am using a 10 element home made yagi on a 13.2 metre boom at a height of 25 metres. All contacts have been made at near moon set or just after moon rise and I have copied EME signals with the moon between 0° and 19° elevation.
Over the last two months I have completed EME contacts with the following stations using the WSJT JT65A digital mode. K2BLA, UT7UV, W8PAT, K1SG, PE1BTX, G5WQ, PA2V, MM0AMW and I6BQI
The DX stations were typically using a bay of 4 yagis, able to be adjusted in both azimuth and elevation. However the following three stations had smaller antennas with no elevation. In such a situation, ground gain (ground reflection) is made use of at both ends and the key requirement is having the moon at low elevation for both stations.
John W8PAT uses two 7 element yagis stacked horizontally at a height of 3.4 metres above the ground over looking a field of corn. John hears very well and according to John it is due to the number of ears (of corn) he has near the antenna His shack is some distance from his antenna and he uses a remote solid state

400 watt PA located near the base of his antennas. This low antenna height and location gives him low local noise and a high angle of radiation which peaks at 19° The antenna has little value for terrestrial work and John uses another antenna on a tower for this.
David MM0AMW who uses a single 7 element Trident antenna and is located near Campbeltown Scotland is at an interesting QTH as he has an EME window at both moon rise and moon set to ZL. The moon rise window is typically shorter in duration to ZL, but David is beaming over the Atlantic Ocean and gets good ground/ocean reflection and hence gain. A contact was completed on the 16th September with the moon at a maximum elevation of 6.7° in ZL and a maximum of 4.6° in GM. David could decode me right down to his moon set. This was a first ever GM – ZL 6 metre contact
Angelo I6BIQ uses a single 7 element yagi and I ran quite few skeds before we had a great contact. It high lighted just how variable 6 metre EME can be from day to day and location to location. Never let anyone say EME is predictable. The initial skeds Angelo copied very little from me and I copied a reasonable amount from him. This was enough for us to continue running skeds. On the 7th of October conditions turned out to be superb. We completed the contact before the moon reached my main antenna lobe which is at 3° above the horizon. I was able to send non standard JT65A messages i.e. "Tnx Angelo" at the completion of the contact and he received this three times as well. Kjell SM7BAE who had been monitoring as he often does for me and could not believe how strong my signal was on this occasion. (Great report Rod)

General

There is a new records update. www.nzart.org.nz/nzart/vhf/NZRecordsUpdateOctober2006.htm
The scribe also notes that while there have been NZ Internal distance records using digital modes on 144 MHz, 5.76 and 10.368 GHz, there are no records for the other bands, so there are opportunities for those interested…

Propagation

Bob ZL3NE/1 is giving some propagation predictions. The first one will be for December 2006 and January 2007. The scribe would welcome feedback on this new portion of the column. (such as DX worked…)

This season is similar to last year, with the easiest in the north. However, I expect it to extend south to the West coast of ZL3 and possibly further. In early December look for warm fronts advancing south in the central Tasman Sea. These give excellent contacts across the front to Australia, particularly on 6 metres. As these come further south they develop lightning storms and can become very severe, when that happens, look for Es propagation on 2 metres over the lightning activity. They also give an excellent start to VK6 on 6 meters with multi hops!
Look for cold fronts from the south western corner of the Tasman Sea between December the 15th, and the 31st. These travel north, bringing propagation on 6m to all ZL districts, starting with VK7 then VK3's and 5's, with propagation from ZL1 to ZL3/4 at the same time over the eastern end of the front. Every one has VK2, up to the VK4's, and if you are lucky you can end up with FK8, all from the one cold front!
When you see anticyclones 1024+mb to the north of ZL, look for any of the Pacific Islands. From early January we have big anticyclones covering all VK and ZL, one big high! Look for these with air pressures like 1024mb+ and with air temperatures of 26+ degrees. These are excellent for propagation on 6 metres to 23 cm and then some. At times you can hear both VK and ZL all at the same time. From mid January only anticyclones will provide good propagation, 1022mb and 26 degree temperatures? These are excellent for 2m, 70cm and 23cm but give diminishing signals for 6 metres. Any questions or requests?
For daily propagation predictions click on http://homepages.slingshot.co.nz/~split21204/ and select ZL3NE for my index page. Thank you, Bob for your prediction.
It also pays to keep an eye on Hepburns Tropospheric forecasts as well at
http://www.dxinfocentre.com/tropo_aus.html

Contests

The Microwave contest held on the 7th and 8th October, produced some good activity from 925 MHz through 10.368 GHz. The 5.76 GHz and 10.368 GHz bands produced high levels of activity, with the best overall DX on these bands being achieved by Simon ZL1SWW and Ted ZL2TAX (aka ZL2IP) at 330 km. Dave ZL1AKW worked Simon ZL1SWW on 1.296 GHz at 208 km while the other bands produced lesser distances.

I am pleased to report that this contest was won from the provinces with Ted ZL2TAX (at Inglewood, Taranaki) being a clear winner, with Steve ZL1TPH and Simon ZL1SWW coming in 2nd and 3rd respectively, while Ray ZL2TAL came in with a good 4th position.
A full report can be read at
http://www.nzart.org.nz/nzart/Update/Contests/microwavecontest2006.pdf

Jan/Feb 2007 VHF Scene

There has been lots happening, with the 2006 VHF/UHF Field day in early December and there have been a number of good DX openings both inside ZL and to VK. The National System has its 20th Birthday this year and also the VHF Convention 2007 is being held in Wellington

DX
Bob ZL3TY reports on his DX
The 6m Sporadic E openings this summer have been the best I have experienced in the past 18 years of operating on the band. All mainland VK call areas have been worked and there have been many prolonged openings into VK6 and VK8. The band has been open to some part of VK every day since mid December.
On the morning of 17 November, while operating meteor scatter tests to VK, 2m opened to VK2 briefly and 3 Sydney stations were worked. The next 2m tropo opening started here at 1105am on Sunday 10 December with a QSO with VK2GKA, then the band remained open until late Monday night. On Sunday I had SSB/CW QSOs with 11 VK2s and 5 VK3s, also digital (JT65b) QSOs with 6 VK3s, while on Monday the opening continued with SSB/CW QSOs with 15 VK2s, and 3 VK4s and a digital QSO with VK4WS. On the Sunday I also had several 70cm QSOs with VK2FZ.
On Saturday 23 December there was an excellent Sporadic E opening starting at 911am NZT which lasted until 1145am. Stations worked included 11 VK2s, 3 VK1s and 3 VK7s. Conditions were so good an easy QSO was had with VK7HSE who was running 50W to a 1/4 wave GP antenna.
Jim ZL1TYF reports having worked Steve ZL1TPH via the Belmont 710 repeater. He has also heard ZL3IJ (Chch) and ZL4IS from Dunedin during enhanced conditions.
Murray ZL3MH reports working 2 VK2's and a VK3 on 9th December. The 23rd produced 8 VK2's and a VK1. The 5th January also produced 2 VK2's and a VK4, while just the column was been finished on the 11th a further 2 VK2's were worked. Other stations in the Christchurch area also worked most the stations. (That sounds like some real nice DX)

Microwave
During late December Steve ZL1TPH and Kevin ZL1UJG tried the path from Moirs Hill to Hamilton on 5.76 GHz and 10 GHz. The scribe was at the home QTH with a 7 watt transverter and 60cm dish in the driveway, while Steve had his 15 watt transverter and 60cm dish. Over the 170 km+ troposcatter path between the 2 stations, we were able to exchange details on 5.76 GHz, as the scribes signals were just readable by Steve. Steve's higher TX power enabled better copy at the Hamilton end. 10.368 GHz was also tried and Steve's carrier was copied in Hamilton, but the 10 GHz TX power available in Hamilton didn't allow a full contact. The 10 GHz signal received was weaker by only a few dB.
The scribe lives in a typical suburb, not on any elevated site, and the dish was pointing through various local obstructions. Troposcatter paths are always present and require moderate TX powers

VHF DX from the South Island
Murray ZL3MH outlines some active VHF DXers from the South Island. (If you are not listed then drop the scribe an email)
First I start with the keen DXers on 2m with good beams and 100w or more.
From Christchurch ZL3AIC Mark, ZL3NW Rod, ZL3CU Star, ZL3MF Mike, ZL3AAU John, ZL3MH Murray.
On the West Coast ZL3TY Bob, ZL3FV James. In Ashburton is ZL3AAN Max and in Timaru ZL3OZ Ken and in Dunedin ZL4LV Peter and ZL4DK David.
On 70cms the numbers are very low. On 23cm they are even fewer that can have a contact on SSB. 2m and 6m are the bands most used. DX is much harder as you move south. We have a 2m and 6m ring round

arrangement with the Christchurch Dxers if any is on. In the last 2m VK opening on Sporadic E I rang Peter ZL4LV who also worked VK2+7. We also look at the Vklogger at http://www.vklogger.com/vhflogger/set.php

Even on VHF contest weekend in early December there is only a small chance that someone goes up on the Port Hills to work further north.

The good news is that there is a hard core of 2m Dxer's that are well geared up to work the Sporadic E to VK even if there is nothing for several years. A good season here is VK
on 2m and VK6 on 6m. Finally my best DX on 2m is VK5NC. I have worked VK1, 2, 3, 4, 5, 7 on 2m. (Thanks for outlining some of the activities Murray)
There is lots more information which will be held back for a later column.

VHF Convention 2007
The VHF Convention is being held over Easter Weekend 6th to 9th April at the Tawa Service centre in Wellington. The Conventions are always good value, with the social side, presentations, rallies, forums and no doubt some of the famous VHF Group Trading table. The 2005 Convention held in Wellington was very memorable and I am sure this one will be great value. Further info can be obtained at www.vhf.org.nz/convention and also updates on the www.nzart.org.nz/nzart , Auckland VHF Group Spectrum Newsletter as well as this issue of Break In.

Celebrating 20 years of the National System
The third National System Award will run during the month of March 2007.
The Purpose of the award is:
To celebrate 20 years of the National System, which first became operational between Auckland and Wellington on April 5th 1987.
To highlight the continued support by NZART, many NZART branches and the devotion of the Trustees and other helpers. Mention must also be made of the donations of time, expertise and equipment by a number of Companies that continue to make the National System possible.
To encourage home station and mobile use of the system, and to demonstrate the wide coverage over most of New Zealand.
Details of the rules, scoring and award application details can be found on the Wellington VHF Group web site at www.vhf.org.nz/nsaward.
The NZART Website, February Monthly Broadcast and Info-Line Newsletter to branches may contain additional notes or reminders.
(Its great news to hear that the National System has been running for 20 years

General
There is some new VHF/UHF Record updates, these can be found at
http://www.nzart.org.nz/nzart/vhf/index.html

EME
New 2-meter EME world record claimed (29 December 2006)
Moonbounce enthusiasts in New Zealand and Portugal are claiming a new EME world distance record on 2 meters. The 6 December contact, using digital JT65B mode, was between Nick Wallace, ZL1IU, in New Zealand (RF64vr) and Joe Kraft, CT1HZE/DL8HCZ, (IM57nh) in Portugal. Nick was running 500 W to 4-by-12 Yagis, while Joe was putting 1.5 kW into 4-by-11 Yagis. The common moon window for both stations is only about 10 minutes long, and the moon is just setting in Portugal when rising in New Zealand.. The EME contact spanned a terrestrial distance of 19,685 km (12,204 mi). This will beat the previous record also held by a ZL, on 2M, with the same mode, EA2AGZ-ZL3TY 13 October 2005 with a terrestrial distance of 19434 km(12,075 mi). Difference of 251 km (156.9 mi). (From NZART webpage). Congratulations to both Bob ZL3TY has been active on 2m EME recently and had some really pleasing QSOs with stations he had been attempting to work for some time, eg ZS6JDE, 4S7CCG (Bob ZL1RS), XE2AT, VE7TIL. Since the beginning of December to the first week in January, Bob had 31 EME QSOs with stations in 12 countries on 4 continents.

Propagation

Feb / March Propagation Prediction by Bob ZL3NE/1.

Propagation has slowed down considerably and as usual 6 meters is almost gone, however 2 meters and 70cm will give some propagation when big highs, 1024 mb with 22+ degrees temperature are over the Tasman Sea. There will still be local tropo out to 400km. By March it will be reduced again.

This last season produced propagation in all areas just as I predicted earlier in the year. Remember last year there was very little in the South Island. Here is how one of the major openings took place. December the 22 until the 24. Commenting on what to look for in the November column, I described the conditions which took place here almost to a letter. A cold front came up the centre of the Tasman Sea and the associated warm front extended to the North West. On the Friday evening there was a warm West wind giving excellent propagation from ZL1 to VK2 on 2 meters. On Saturday the entire 6 meter band was alive from VK2 south. I was talking to a ZL4 on 6, and a few minutes latter to a VK7 I sugested that they watch 2 meters, shortly after that they made contact with each other, yes on 2 meters! A series of lightning storms along the cold front extended from south of Tasmania almost as far North West as Alice Springs, and this brought the 2 meter E's Propagation between ZL3 & 4 to VK7 along with the VK1's and 2's and 3's. Following those 2m contacts VK2, 3, 5 and 7 stations were extremely strong all over ZL on 6 meters, and then followed the VK6 contacts, for up to eight hours, double hop frontal activity in the Tasman with tropo from VK5 to 6. On the Sunday, 2 meters opened to VK2 from ZL1 and 2. Note how these big openings reoccur close to the same dates each year, (I have previously referred to Dec 25th a couple of years ago), or in the period December 20 to 31st more of this in our winter columns. In my daily propagation predictions I cover all modes of propagation, click on http://homepages.slingshot.co.nz/~split21204/ and select ZL3NE for my index page, then the Pacific propagation, enjoy, Bob.

ZL2AS Team VHF Contesting

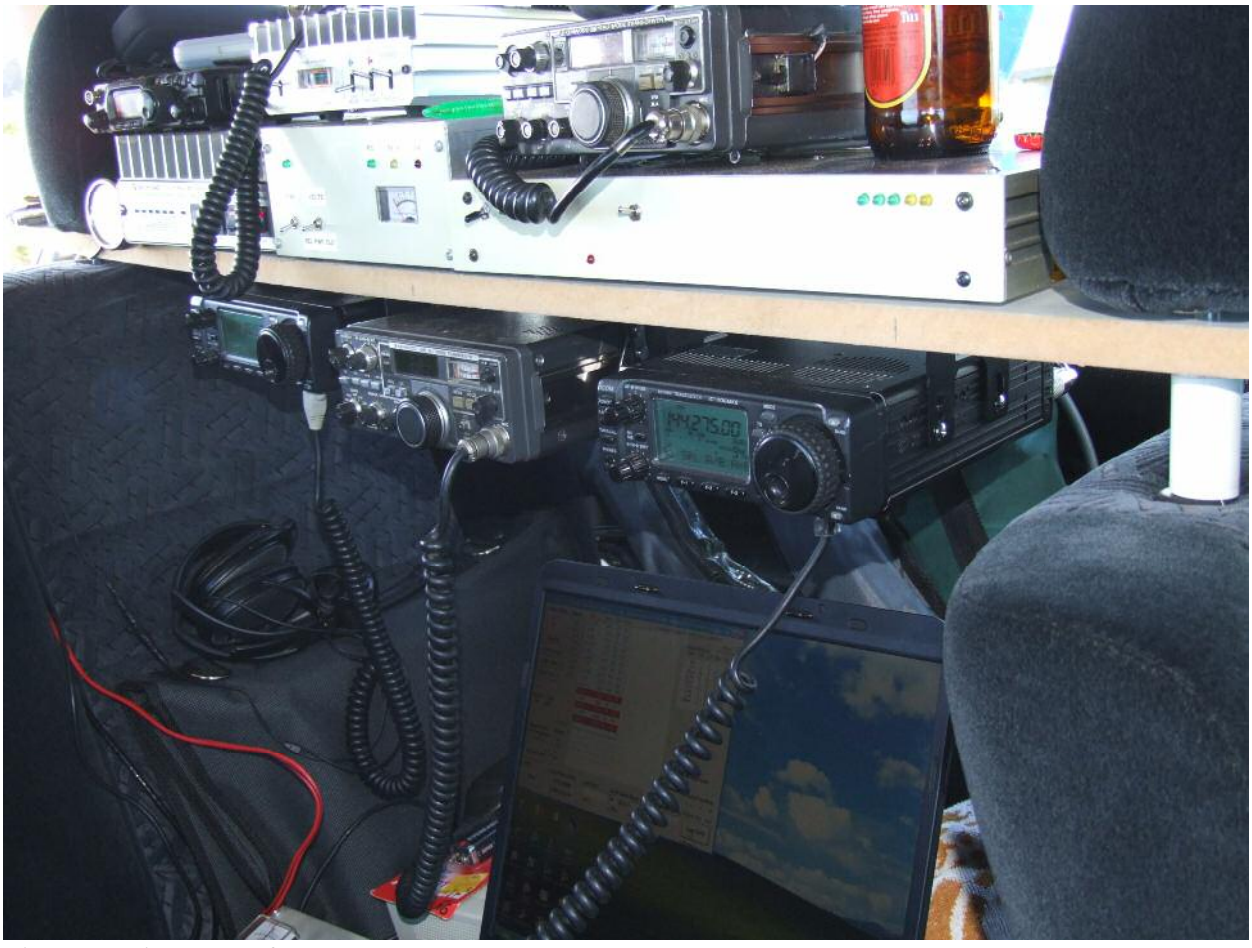
Contests

Results of the 2006 VHF-UHF Field Day Contest (2nd and 3rd December 2006)
The contest was won by Simon ZL1SWW, with Steve ZL1TPH and Ted ZL2IP coming in second and third respectively. Altogether 51 stations took part. A full report can be read at:
http://www.nzart.org.nz/nzart/update/contests/vhffielddaycontest2006.pdf

The next contest is the DX Weekend Contest, on Saturday the 3rd and Sunday the 4th of February 2007. The operating times are: Saturday 1700 to 2300 NZT and Sunday 0700 to 1300 NZT.
The following contest is the Low Band Contest, 50 MHz to 440 MHz, on Saturday the 14th and Sunday the 15th of April 2007. The operating times are: Saturday 1700 to 2300 NZT and Sunday 0700 to 1300 NZT. This is the weekend FOLLOWING VHF Convention, being held in Wellington at Easter.
The rules are available at:
‹http://www.nzart.org.nz/nzart/Update/Contests/vhfcontestrules0606.html›
All contest logs should be sent, to arrive within two weeks, to:
Contest Manager, Wellington VHF Group, P.O. Box 12-259, Thorndon, Wellington.

Contest comments

A great turnout with 51 stations active. Conditions improved markedly on Sunday's session for many stations. There was considerable activity on the 5.76 GHz and 10 GHz Microwave bands where the leading stations gained their advantage. Many stations, such the ZL2AS team(Taraponui) and ZL2AMS team (Mt Curl), are now using 1.3 GHz and this was used to advantage over some long (and obstructed) paths. The scribe also managed a 24 GHz SSB contact with Steve ZL1TPH/p over 172 km, before Murphy played his part. The Contest report makes interesting reading. There is a high number of contest images on the ZLVHFContest Yahoogroup, which also covers other New Zealand DX and Microwave activity.



The portable setup of Simon ZL1SWW