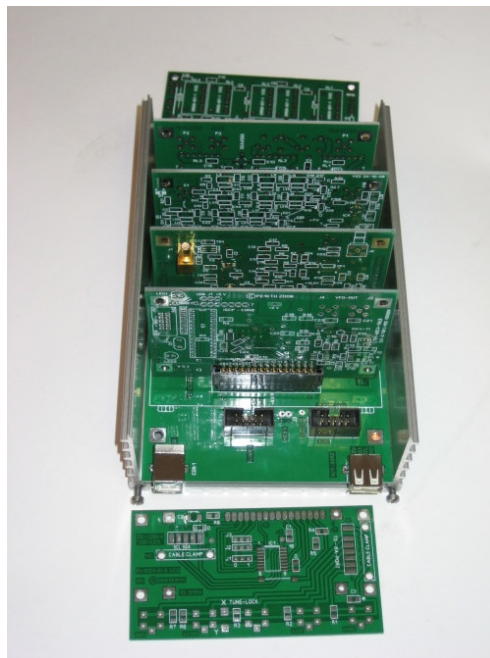


# Ham Hum

June 2010



The official newsletter of  
The Hamilton Amateur Radio Club (Inc.)  
Branch 12 of NZART - ZL1UX  
Active in Hamilton since 1923



**Next General Meeting**  
**16th June—7:30pm**

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### Contact Details 2010

<b>Patron:</b>			
Fin Bruce	ZL4HI	843 9634	
<b>President:</b>			
Robin Holdsworth	ZL1IC	855 4786	<a href="mailto:zl1ux@nzart.org.nz">zl1ux@nzart.org.nz</a>
<b>Vice Presidents:</b>			
Gavin Petrie	ZL1GWP	843 0326	<a href="mailto:zl1gwp@nzart.org.nz">zl1gwp@nzart.org.nz</a>
Phil King	ZL1PK	847 1320	<a href="mailto:zl1pk@nzart.org.nz">zl1pk@nzart.org.nz</a>
<b>Secretary:</b>			
David Nation	ZL1TCE	843 0108	<a href="mailto:zl1tce@nzart.org.nz">zl1tce@nzart.org.nz</a>
Phil King	ZL1PK	847 1320	<a href="mailto:zl1pk@nzart.org.nz">zl1pk@nzart.org.nz</a>
<b>Acting AREC Section Leader:</b>			
David Nation	ZL1TCE	843 0108	<a href="mailto:zl1tce@nzart.org.nz">zl1tce@nzart.org.nz</a>
<b>Deputy Section Leaders:</b>			
"Jono" Jonassen	ZL1UPJ		<a href="mailto:zl1upj@nzart.org.nz">zl1upj@nzart.org.nz</a>
Phil King	ZL1PK	847 1320	<a href="mailto:zl1pk@nzart.org.nz">zl1pk@nzart.org.nz</a>
<b>Treasurer:</b>			
Tom Powell	ZL1TJA	834 3461	<a href="mailto:zl1tja@nzart.org.nz">zl1tja@nzart.org.nz</a>
<b>Committee:</b>			
"Jono" Jonassen	ZL1UPJ		<a href="mailto:zl1upj@nzart.org.nz">zl1upj@nzart.org.nz</a>
Colin McEwen	ZL2CMC	849 2492	
Raymond McNickle	ZL1RGM	827 0304	
Terry O'Loan	ZL1TNO	824 7561	<a href="mailto:zl1tno@nzart.org.nz">zl1tno@nzart.org.nz</a>
Mike Sanders	ZL2MGS	855 1612	<a href="mailto:zl2mgs@nzart.org.nz">zl2mgs@nzart.org.nz</a>
<b>Ham Hum Editor:</b>			
David King	ZL1DGK	847 1320	<a href="mailto:zl1dgk@nzart.org.nz">zl1dgk@nzart.org.nz</a>
<b>Ham Hum Printer:</b>			
John Nicholson	ZL1AUB	846 7477	
<b>ATV Co-ordinators:</b>			
Phil King	ZL1PK	847 1320	<a href="mailto:zl1pk@nzart.org.nz">zl1pk@nzart.org.nz</a>
Robin Holdsworth	ZL1IC	855 4786	
<b>Market Day Co-ordinator:</b>			<a href="mailto:harcmday@nzart.org.nz">harcmday@nzart.org.nz</a>
Robin Holdsworth	ZL1IC	855 4786	
<b>Webmaster:</b>			
<b>BBS Team:</b>			
Phil King (sysop)	ZL1PK	847 1320	<a href="mailto:zl1pk@nzart.org.nz">zl1pk@nzart.org.nz</a>
Alan Wallace	ZL1AMW	843 3738	<a href="mailto:zl1amw@nzart.org.nz">zl1amw@nzart.org.nz</a>
Doug Faulkner	ZL4FS	855 1214	
Gavin Petrie	ZL1GWP	843 0326	<a href="mailto:zl1gwp@nzart.org.nz">zl1gwp@nzart.org.nz</a>
<b>Club Custodian:</b>			
Alan Mowry	ZL1UGM	847 7868	
<b>Equipment Officer/Quartermaster:</b>			
Colin McEwen	ZL2CMC	849 2492	
<b>QSL Manager:</b>			
Sutton Burtenshaw	ZL4QJ	856 3832	<a href="mailto:suttonb@slingshot.co.nz">suttonb@slingshot.co.nz</a>
<b>Net Controllers:</b>			
80m net—Phil King	ZL1PK	847 1320	<a href="mailto:zl1pk@nzart.org.nz">zl1pk@nzart.org.nz</a>
2m net—Phil King	ZL1PK	847 1320	<a href="mailto:zl1pk@nzart.org.nz">zl1pk@nzart.org.nz</a>

## From the Editor

Don't forget the NZART Conference on Queen's Birthday Weekend. See page 10 for more details.

The North Island Secondary Schools Cycling Championship bike race is coming again on 4th July in Ngaruawahia. A 13.5 km circuit run in about 6 different age groupings. Contact our president ZL1IC if you can help out on the day.

Congratulations to our own Sutton Burtenshaw (ZL4QJ). After receiving membership into the DXCC club recently, he has now attained the DXCC Honor Roll which represents the pinnacle of DX achievement.



AREC Section Meeting on 30th June at the clubrooms at 19:30. All members of the Hamilton Section welcome.

**Next Committee Meetings -  
2nd June & 7th July**

## **SB PROP ARL ARLP021**

### **ARLP021 Propagation de K7RA**

This weekend is the CQ World Wide WPX CW Contest, and conditions may be a little rough. Our current sunspot group 1072 has reached the Sun's western horizon and is shrinking besides, and what looked like a possible emerging spot on Wednesday was not to be. There is a stiff solar wind heading toward Earth, and predicted planetary A index for May 28-31 is 20, 20, 22 and 15. Predicted solar flux is 73 for May 28-29, 75 for May 30 through June 3, then 80, 78, 76, 75 and 70 for June 4-8. This prediction is from NOAA and USAF on May 27, but on May 26 they predicted a solar flux of 76, 78, 80, 82, 82, 79, 80, and 80 for May 28 through June 4.

Geophysical Institute Prague predicts a minor geomagnetic storm for May 28, active conditions May 29, quiet to unsettled May 30, unsettled May 31 to June 1, quiet to unsettled June 2, and quiet conditions June 3.

The STEREO spacecrafts at <http://stereo.gsfc.nasa.gov/> currently view about 89.5 percent of the Sun. A month from now they will see 90.3 percent, in two months the coverage will be 91.4 percent, and it will be 92.8 percent in three months. Currently they see a bright spot about 30 degrees west of the sun's eastern horizon, but this doesn't appear to be a new sunspot group, at least not yet.

Thanks to Scott Bidstrup W7RI for the heads up on an interesting article from Scientific American on our Sun's odd behavior and low activity. Read it at <http://tinyurl.com/35ez8tb>. Julian Moss, G4ILO has been using WSPR (Weak Signal Propagation Reporter) to search for marginal or unknown propagation paths. He writes, "With the Sporadic-E season starting I thought that I would try WSPR on 10m to spot band openings. What has been surprising is the consistent paths between stations in Faroe Islands and Iceland and the UK and Western Europe. The paths were occurring even during the period of no sunspots and occurred when no other long distance propagation was being reported between WSPR stations anywhere else. I would have not expected the F2 MUF to be high enough to support propagation at that time and that latitude.

I don't think many people have regularly tried 10m at other times so I don't know if this has been observed before. I haven't found any actual activity on 10m at this

time but of course OY and TF are not in parts of the world with a lot of amateurs".

At <http://blog.g4ilo.com/2010/05/10m-open-to-north.html> Julian has a nice map illustrating this on his blog. See <http://wsprnet.org/drupal/> for details on WSPR. At <http://www.g4ilo.com/wspr.html> Julian has a nice description of how WSPR works.

Bob Brown, NM7M, a true radio propagation guru passed away this week at age 87. See the announcement at <http://www.arrl.org/news/robert-brown-phd-nm7m-sk>. In addition to teaching physics at University of California at Berkeley, he wrote "The Little Pistol's Guide to HF Propagation".

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## Report on Consultation on future of NZART

This message come from NZART President ZL2KH in regard the recent opportunity to comment on the future of NZART

Thanks to all who sent in their submissions – and thanks to Fred Johnson ZL2AMJ for collating them. I have read all the original submissions and can vouch for the fact that the only editing of them has been the removal of the submitter's identity.

There are only 20 submissions from a transmitting membership of 1,719. This is a 1.16% return which is not a big-enough sample to warrant a deep analysis. This could indicate a large amount of satisfaction – or a large amount of apathy. I will leave it up to individual members to decide which. The complete document should be read and studied – the readers to do their own analysing.

All submissions are full of ideas for others to do the suggested work. There is not a single offer from anyone to step forward (or preferably step up) and offer direct services to implement any idea. There are no suggestions for a leadership offer, or for setting up and leading a long-term steering committee.

Many of the suggestions have already been investigated by the present and pre Councils with outcomes already reported.

This Survey is another example of the Council consulting with members

See <http://www.nzart.org.nz/pdf/2010/final-report-submissions-10-05-27-v2.pdf> for the full report.

## NZART AGM & Conference 2010

5th—7th June 2010 at the Alexandra Park Raceway, Greenlane Rd West, Epsom, Auckland.

Easily reachable as a day trip from Hamilton and surrounding areas.

AGM starts at 8:45am and continues to approx 1pm.

More details at <http://nzartconference.cjb.net/nzartconference/index.asp>

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## Rally NZ 2010

On Saturday and Sunday (8 and 9 May) Mike (ZL2MGS) and I took part as 5K operators for Rally NZ. We were assigned a position at Te Akau on the Saturday and on the Whanga Coast on the Sunday for two stages each day.

Each of the positions had their own benefits and problems. Firstly, on the Saturday, our position put us in a shooting gallery for both stones and dust from passing rally cars, and on the Sunday when we arrived at our position, there was a car parked there and there was no way under the sun that he was going to move.

The Sunday problem was sorted by Safety 2, a car that goes around the course and is crewed by Rally Safety Staff. As Radio Operators we did not have any authority to order the car out of our position, but we knew that the Rally Staff would win when they arrived, so we set up our dipole and antenna system and waited for their arrival.

Comms was primarily on H.F., with VHF being used for the Control Channel. Comms on H.F. was good for both of our positions, with 5/9 reports for all of the periods that we operated. Setting up the dipole was a different story, but using the KISS formulae generally works. Put the pole up, haul the dipole up and use ropes to haul the wire off the track and tie the other end of the rope to some scrub on the side of the road.

Another problem I struck was that I forgot to check the water level in my wind screen washers before I left home on Saturday. The washers were needed on the Saturday ... ouch. Off down the river to get some water. Of Course, I filled the washers up and put some cleaner in the washers on the Sunday, and we didn't need the washers. Murphy strikes again.

Over the whole four stages we only had one car come to grief within our area of responsibility. Mike went for a walk to the site armed with a handheld and quickly reported back to me that all was ok.

Having a GPS (mine is a very basic GPS) is also great for finding a position when it is dark. Programme the coordinates in to the GPS and all of the drama of finding the position is a thing of the past.

On arriving home I heard on Prime News that this might be the last time an International Rally might be held in NZ. It would be sad to lose the Rally not only from a Rally point of view but also from a Radio Operator point of view. Rally NZ is a great training ground for setting up and operating a station in sometimes less than ideal conditions. I did not hear that statement repeated on 3 News later in the evening.

Tony Case – ZL1UD.



## Invitation

We received this invitation recently from DL2IPU.

Hello dear Radio Amateur,

I am Oleg DL2IPU, I saw your contact in the NZART branch info and thought I could invite you and other hams from your branch to use JT65a digital mode on

short waves.

Probably you know it already, if not - that is the old good one, used for EME. On HF it is even more reliable than PSK, but still having enough ops willing a qso, unlike WSPR. You could be a very welcome (and workable) guest in europe, even in our noisy QTHs.

Since some months, it is simpler than ever to work JT65a, with W6CQZ's new "JT65-HF" program, available here: <http://groups.google.com/group/jt65-hf/>

I attached a screenshot from Sunday, just to give you an idea.

There is an accompanying web site, with chat and reporter (reverse beacons) network: <http://jt65.w6cqz.org/> Yet another one is <http://www.chris.org/cgi-bin/jt65talk> If you like other digi modes, <http://hamspots.net/> is a very neat tool for skeds and chat.

Everywhere across these web sites, you'll find a lot of DL and other EU operators, all patient DXers and keen to get some ZLs into their logs.

I hope to see you and your fellow hams from your brach one day on my waterfall!

73! de DL2IPU Oleg



## **Redefining Electrical Current Law**

While the laws of physics weren't made to be broken, sometimes they need revision as work with the Transistor Laser has shown.

ScienceDaily reports:

A major current law has been rewritten thanks to the three-port transistor laser, developed by Milton Feng and Nick Holonyak Jr. at the University of Illinois.



With the transistor laser, researchers can explore the behavior of photons, electrons and semiconductors. The device could shape the future of high-speed signal processing, integrated circuits, optical communications, supercomputing and other applications. However, harnessing these capabilities hinges on a clear understanding of the physics of the device, and data the transistor laser generated did not fit neatly within established circuit laws governing electrical currents.

"We were puzzled," said Feng, the Holonyak Chair Professor of Electrical and Computer Engineering. "How did that work? Is it violating Kirchhoff's law? How can the law accommodate a further output signal, a photon or optical signal?"

Read the full ScienceDaily article 'Redefining Electrical Current Law With the Transistor Laser'

<http://www.sciencedaily.com/releases/2010/05/100512164335.htm>

ScienceDaily

<http://www.sciencedaily.com/>

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## Amateur Radio Operator Charged

Radio Spectrum Management recently prosecuted Amateur Radio Operator Alan Potter for transmitting outside the terms and conditions of the General User Radio Licence for Amateur Radio Operators.

The radio spectrum is an important resource for New Zealand and a key part of Radio Spectrum Management's work is to ensure responsible use of the radio spectrum in a way that doesn't cause interference to other users.

All amateur radio operators are required to gain a qualification that covers the risks and harmful effects of interference from their transmitting equipment. This includes the risks associated with transmitting at high power levels.

"As a qualified amateur operator, Mr Potter is well aware of the risks but has chosen to ignore them", says Chris Brennan, Compliance Manager for Radio Spectrum Management.

"This behaviour is unacceptable. Radio Spectrum Management are serious about protecting the radio spectrum for all users; we are continually monitoring and en-

forcing radio spectrum compliance, which includes prosecution when necessary".

Radio Spectrum Management was alerted to a video Mr Potter posted on 'You Tube', a well known online video sharing site, which showed his transmitter operating at 3100 Watts. Operating at such high transmitting power is likely to cause interference to, and disruption of, a range of other licensed radio services in the local area.

Radio Spectrum Management's role is to protect the public good by ensuring equipment capable of transmitting radio waves complies with the terms, conditions and restrictions of radio licences and International standards applicable in New Zealand.

### **Conviction and Charge**

Mr Potter was charged in the Christchurch District Court on 14 April. He was found guilty of breaching section 113 of the Radiocommunications Act 1989. He was fined \$1,750 and \$130 for costs, plus he has been required to forfeit his radio equipment.

For the purposes of section 113, any person who erects, constructs, establishes, maintains, or is in possession of any radio transmitter is presumed to have used the radio transmitter. In this case, Mr Potter was found in possession of radio transmitting equipment that was capable of operating at a significantly higher power than the Amateur Radio Operators General Licence allows.

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## **P3E Microwave Transponder**

AMSAT-OH is working on the S/X band coherent/linear transponder for P3E. The Coherent mode is a fully functional testbed for the P5A (Mars Orbiter) ranging transponder.

Especially the linear transponder prototype has been assembled and verified with over-the-air tests and laboratory tests. Flight versions of the submodules have been and are being produced at this time with our eyes now set on integrating these together and cabling the whole job together.

Full verification of the Coherent Mode requires a fully functional command station AND a functional IHU + CAN environment to interface our data ports with. No such

**AREC**      **Contests**      **WARO**      **SPAM**      **Digital**

**VHF-SHF**      **AMSAT-ZL**      **EchoLink**

**IRLP**      **BS7H**      **DX-ing**

**APRS**

**NZART AGM & Conference**  
**Alexandra Park**  
**Queens Birthday Weekend**  
**5th & 6th June 2010**

Weekend includes these forums and an Alternative Programme that includes visits to Skytower, Devonport, Artisan Shops, Skydome, Heritage Cottages, Butterfly Creek, Villa Maria Wines and Mangere Mountain.

More at <http://nzartconference.cjb.net>

tests have been available yet, but all our preliminary testing and evaluation of the Coherent Processor have shown proper operation of the design and circuitry (e.g. locking onto a "modulated" uplink carrier, tracking this etc.). So far correct live operation of the Coherent Mode is our biggest question mark.

Our national team meets on a regular basis every 4 - 6 weeks for testing and follow ups of the work of each individual.

This transponder is especially complex as you can see from these key figures:

- 9 different local oscillators
- All local oscillators locked to the common 10 MHz USO
- 21 different frequency mixers
- 13 different intermediate frequencies
- Linear Mode output power on 10 GHz: 3 W PEP
- P5A Mode output power on 10 GHz: 1 mW PEP
- 38 control lines on the CAN interfaces
- 2 CAN interfaces, one in multiplexed mode
- 4 dedicated direct control lines interfacing with the IHU
- 14 analogue telemetry lines to the CAN bus

## Upcoming Happenings & Events

<i>Date</i>	<i>Happenings &amp; Events</i>
1st June	VHF Net, 146.525 MHz, 20:00
<b>5-7 June</b>	<b>NZART Conference (Auckland)</b>
<b>6th June</b>	<b>NZART Official Broadcast</b>
7th June	HF Net, 3.575 MHz, 19:30
8th June	VHF Net, 146.525 MHz, 20:00
<b>12-13 June</b>	<b>NZART Hibernation Contest</b>
<b>12th June</b>	<b>VK/Trans-Tasman 160m Phone</b>
<b>13th June</b>	<b>NZART HQ Info-Line</b>
14th June	HF Net, 3.575 MHz, 19:30
15th June	VHF Net, 146.525 MHz, 20:00
21st June	HF Net, 3.575 MHz, 19:30
22nd June	VHF Net, 146.525 MHz, 20:00
<b>27th June</b>	<b>NZART Official Broadcast</b>
<b>27th June</b>	<b>NZART HQ Info-Line</b>
28th June	HF Net, 3.575 MHz, 19:30
29th June	VHF Net, 146.525 MHz, 20:00
<b>30th June</b>	<b>AREC Section Meeting (AREC)</b>

**3-4 July—NZART Memorial Contest**  
**3-4 July—NI Secondary School Bike Race (AREC)**  
**4th July—NZART HQ Info-Line**  
**10-11 July—IARU HF World Championship**  
**10th July—Closing date for Break-In**  
**18th July—NZART HQ Info-Line**  
**24th July—Waitakere Sprints (Phone)**  
**25 July—NZART Official Broadcast**  
**7th August—Waitakere Sprints (CW)**  
**7th August—NZART Boat Anchor Sprint**  
**7-8 August—NZART Brass Monkey Contest**  
**8th August—NZART HQ Info-Line**  
**14th August—Hamilton Market Day**  
**21-22 August—Lighthouse Weekend—ILLW**  
**22nd August—NZART HQ Info-Line**  
**29th August—NZART Official Broadcast**  
**6th September—NZART Doug Gorman Freq Measuring Contest**  
**September—Kairangi Hillclimb (AREC)**  
**2-3 October—NZART Microwave Contest**  
**13th November—GlobalSET**  
**4-5 December—NZART Field Day Contest**  
**March 2011—Colville Connection (AREC)**  
**22-25 April 2011—VHF Convention (Wellington)**  
**4-5 June 2011—NZART Conference (Upper Hutt)**

## AREC Event Operators Page

<b>WRC Rally NZ/ Possum Bourne Rally</b>	2011	Organiser : <b>ZL1DK</b>
Please contact the <a href="#">Section Leader</a> with your team information and he will pass it on to Auckland.		

<b>Rollo's Marine Bridge to Bridge Water-Ski Race</b>	November 2010	Organiser : <b>ZL1UPJ</b>
<b><u>Position</u></b>	<b><u>Saturday Operator</u></b>	<b><u>Sunday Operator</u></b>
<b>Base</b>		
<b>Start Boat</b>		
<b>Rescue Boat</b>		
<b>X-Band</b>		
<b>A.</b>	Ngaruawahia/Taupiri	
	Start/Finish at Point	
<b>B.</b>	Ngaruawahia Ramp	
<b>C.</b>	Ngaruawahia W/S	
<b>D.</b>	Horotiu	
<b>E.</b>	Pukete Ramp	
<b>F.</b>	Days Park	
<b>G.</b>	Fairfield Bridge	
<b>H.</b>	Malcolm St	
<b>I.</b>	Narows	
<b>J.</b>	Field Days	
<b>K.</b>	Between Pipe and F/Days	
<b>L.</b>	High Level Bridge	

<b>Kairangi Hill Climb</b>	<b>Sunday September 2010</b>		<b>Organiser : ZL1IC</b>
<u>Position</u>	<u>Operator</u>		
1.			
2.			
3.			
4.			
5.			
<b>School Cycling</b>	<b>3-4 July 2010</b>		<b>Organiser : ZL1IC</b>
<u>Position</u>	<u>Operator</u>	<u>Position</u>	<u>Operator</u>
1.		5.	
2.		6.	
3.		7.	
4.		8.	
<b>Colville Connection</b>	<b>March 2011</b>		<b>Organiser :</b>
<u>Position</u>	<u>Primary Operator</u>	<u>Secondary Operator</u>	<u>Other Operator</u>
<b>Base</b>			
<b>Stony Bay</b>			
<b>Fletcher Bay</b>			
<b>Hill 1</b>			
<b>Hill 2</b>			
<b>Fantail Bay</b>			
<b>Stand By</b>			

For Details about and to help with these events, contact the person indicated as the organiser for the event. See Page 1 for their contact information.

## Club Information



### Contacts :-

**Business Meeting:** 1930 First Wednesday of each month  
88 Seddon Road, Hamilton

**General Meeting:** 1930 Third Wednesday of each month (except Jan)  
88 Seddon Road, Hamilton

**Homepage:** <http://z11ux.tripod.com>  
**eMail:** [branch.12@nzart.org.nz](mailto:branch.12@nzart.org.nz)

**HF Net:** 3.575MHz LSB 1930 Mondays  
**VHF Net:** 146.525MHz simplex 2000 Tuesdays

**2m Repeater:** 145.325MHz -600kHz split  
**STSP** 146.675MHz -600kHz split  
**Repeaters:** 438.725MHz -5 MHz split  
**ATV Repeater:** 615.250 Ch39 (off air)

*Cover Photo: KTH-SDR kitset from PA0RWE [http://home.kpn.nl/rw.engberts/sdr\\_kth\\_detail.htm](http://home.kpn.nl/rw.engberts/sdr_kth_detail.htm)*

Sender	Hamilton Amateur Radio Club (Inc) PO Box 606 Hamilton 3240
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