

Ham Hum

May 2010



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



Next General Meeting

19th May—7:30pm

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From the Editor

Jock White results:

We did very well again this year. One of the top 4 branches, with very little separating 2nd, 3rd and 4th positions. Once again we proved that being in the middle of a big city doesn't prevent a top score.

Congratulations to all involved, and I hope to see you all again next year.

Rotorua Marathon:

Once again a couple of club members headed over to Rotorua to help out with the Rotorua Marathon. Excellent weather, nice and cool, not much wind, helped keep the competitors in good shape and I didn't hear much more than the usual cramps, bumps and exhaustion.

Conference:

As you will see on page 7, the NZART AGM & Conference is coming up very soon. The AGM itself is free, and you can attend other bits and pieces if you register and pay the appropriate fee.

Next Committee Meetings - 5th May & 2nd June

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SB PROP ARL ARLP017

ARLP017 Propagation de K7RA

Our Sun has again become very quiet. We saw 13 days with no sunspots, April 15-27, then new sunspot group 1063 appeared April 28, and on April 29 it was gone again. Although the sunspot number for April 29 is zero, early on April 30 I can still see group 1063 in a magnetogram, so perhaps it rises again.

We watch the STEREO mission at <http://stereo.gsfc.nasa.gov/>, looking for bright hints of activity, but lately they just seem to be magnetically complex areas that don't turn into sunspots.

With no sunspot expected for today, the last day of April, this should be the second monthly decline in a row for monthly sunspot averages. Monthly averages of daily sunspot numbers for February, March and April are 30.5, 25.2 and 10.8.

USAF/NOAA predicts solar flux of 76 for April 30 through May 6, rising to 80 on May 7-8, 78 May 9, and 75 after that. They also predict higher geomagnetic activity for May 4, with planetary A index from April 30 to May 7 at 5, 5, 5, 8, 18, 10, 5, and 5. Geophysical Institute Prague says April 30 through May 2 should be quiet, quiet to unsettled May 3, unsettled May 4-5, and quiet May 6.

This week many comments came in about the volcanic ash cloud in Europe and possibly effects to VHF propagation, perhaps due to lack of aircraft in the sky.

Brett Graham, VR2BG wrote, "No aircraft in the air removes a lot of reflective surface, though 'aircraft bounce' isn't generally thought of at lower frequencies. This is a bit like an equation with several variables, somewhat difficult to solve.

"Trails of meteors somehow change due to presence of ash, in a way that seemingly affects their reflectivity at higher frequencies but not so noticeable at lower frequencies. Did the ash cloud reach that sort of altitude? If the trails are in the E-layer region, then it is about 90-150 km up. Maybe just a little ash gets that high up and could have an effect.

"Though aircraft do provide more reflective surface at higher frequencies, they will move into and out of random points in the sky, potentially including area where reflectivity is needed for a particular path.

"The big aircraft usually move quite a bit faster than the wind, which is what moves meteor trails around and causes the Doppler shift seen when working meteor scatter. Of course, Doppler is a function of frequency, but perhaps could help reduce the rather big variable of a lot less metal up in the sky. Ah, the black magic of RF - will we ever figure it all out?"

Brett sent along this instructive link: <http://www.imo.net/radio/reflection>.

Bill Echols, NI5F wrote, "Will the strongly reduced amount of air traffic over Europe affect the ability to complete MS QSO in as rapid a time as usual? In other words, does it have to be ash attenuation making the difference?"

Budd Hipsisley, W2RU wrote, "How about the total absence of aluminum aircraft in the European air space?" in response to the assertion that volcanic ash was attenuating signals.

Likewise, Don Kerns, AE6RF wrote, "Degraded propagation in the 4m band during the time the ash was active MIGHT have been due to the stark DECREASE in air traffic. 4m should 'bounce' off of airliners pretty well. If there were fewer of them in the sky during the same time period."

Dan Zimmerman, N3OX wrote, "I don't know if the procedures in meteor scatter operation might rule out airplane scatter, but it seems like it might be the simplest explanation.

"I get a lot of what I assume is airplane scatter around here ... pretty useful in contests, because I have low power and low antennas.

"I think that all the Doppler shifted traces in this spectrogram of WA1ZMS/B on 2m are airplanes, <http://n3ox.net/files/WA1ZMS0042Z082309.jpg>."

Dan sent along some information on airplane scatter here. You can read it on the web at, <http://www.qsl.net/oz1rh/troposcatter99troposcatter99.htm#Toc458130270>.

J.D. Erskine, VA7OTC wrote, "While attenuation of the signal from the one mentioned satellite might provide an independent space signal, signal from outside the atmosphere, for comparison with terrestrial VHF signals, two events occurred during this period. As well as the presence of volcanic ash, there was an absence of aircraft, a significant one at that. Might that have as much to do with the attenuation, real or apparent, of longer distance reception of lower frequency VHF signals?"

Gene Zimmerman, W3ZZ writes the monthly "World Above 50 MHz" column for QST, and cc'd us on an email to LA4LN, mentioned in last week's bulletin.

"Some have speculated that the volcanic ash might affect VHF propagation both in terms of MS (meteor scatter) and in terms of Es. While random MS conditions are reasonable in April, Es is usually quite poor. Yours is the first report I have seen that indicates that MS was significantly poorer in regions covered by the ash cloud.

"You have indicated why a mechanism to explain any effect of volcanic ash would be difficult to find. This volcano has driven ash to only ~6 km heights. MS reflections occur at ~60 km or 10x higher. As you accurately point out, 4 meter signals are much longer wavelengths than the diameter of the ash particles. I see no mechanism by which the ash cloud could affect gas ionized by meteor burns in the E layer where all the refraction is taking place. It is also difficult but less so to postulate that the fairly dense ash particle cloud could scatter the signals refracted from meteor trails such that FSK441 would detect them but not be able to decode them. However you indicate that many fewer signals were even detected and NOT that these were more difficult to decode."

In relation to reflections from aircraft, John Sahr, WB7NWP built a passive radar system that correlates FM broadcast signals with their reflections from aircraft and other objects in the sky. Read about it on the web at, <http://rrsl.ee.washington.edu>.

Chip Margelli, K7JA, writes from Garden Grove, California (DM03xs): "I worked Fred, KH7Y in Hawaii around 2010 UTC on April 24th on 50.110 MHz. His signal

came up to over S9, and this is rather early for us to work Hawaii on 6 meters. I hope it is a good omen."

If you would like to make a comment or have a tip for our readers, email the author at, k7ra@arrl.net.

Opportunity

NZART Transmitting Members are invited by NZART Council to provide guidance and assistance with a matter that is under consideration: **The Future of NZART**.

You are invited to enter,

starting at the TOP LINE on a single A4 sheet "**Submission on The Future of NZART**" followed by your name, callsign, postal address, and date,

OR,

in the address line of your email: "**Submission on The Future of NZART from**" and in the TOP LINE in the body of your email text, again: "**Submission on The Future of NZART from**" followed by your name, callsign, postal address, and date.

Add your NZART Membership Number too - or a statement that you are a current TRANSMITTING Member.

Constructive comments are wanted. Consider the present NZART circumstances and financial position as your start point. You are referred to March/April 2010 "*Break-In*". Previous history is not required.

A single A4 sheet, or if submitting electronically as an email or attachment, not more than one page with this required heading information and your constructive comments will be appreciated.

Submissions that do not meet these rules or which are in excess of these rules will impede the processing in the short time available so will be rejected unconsidered.

Submissions close at midday on Thursday 27 May, at NZART Headquarters, nine days before the AGM.

Please post A4 sheet submissions to: "SUBMISSIONS", NZART Headquarters, P.O. Box 40-525, UPPER HUTT 5140, and in adequate time to reach the destination before the closing time.

Please send emails to nzart.hq@clear.net.nz before the same closing time. The A4 sheets and email submissions received become NZART Council working documents and the property of NZART Council. No acknowledgements will be given.

Submissions will be considered by Council at its face-to-face meeting on the day before the NZART AGM. The identity of originators of documents will not be disclosed outside NZART Council.

The release of results, statistical information, extracts from the texts received, and any further use of information received, is at the discretion of, and will be decided solely by, the NZART President.

Notes:

- A single-sheet hard copy submission or a one page email submission has been deliberately requested to ensure fast processing and to study in the short time available before Conference. Your cooperation is requested.
- NZART's principal concerns are the interests of its Transmitting Members.



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.

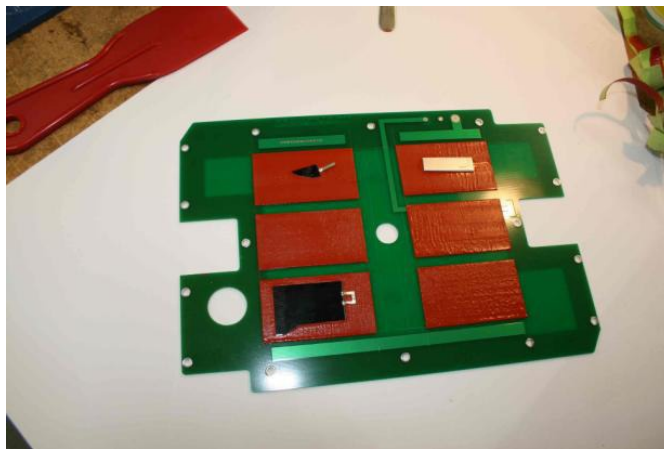
More details at <http://nzartconference.cjb.net/nzartconference/index.asp>

KiwiSAT summary to date

Please refer to the KiwiSAT site at <http://www.kiwisat.org.nz/index.html>

For the past year, there has been some very good progress made, but during testing of the SPI (Serial Peripheral Interface) some problems cropped up which required the “Glue Logic Chip” the FPGA to be redesigned and a new chip programmed.

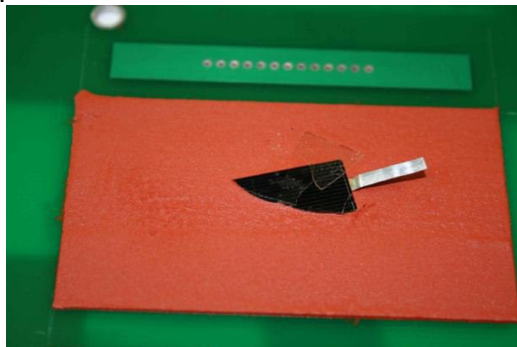
We are extremely grateful to Gert van Loo for reverse engineering the FPGA and then to Jonathan Bromley and Michael White G3WOE in the UK for verifying the logic and obtaining a suitable programmer, which was sent to New Zealand. A chip has been programmed and debugging is now taking place as it didn't work as advertised first time.

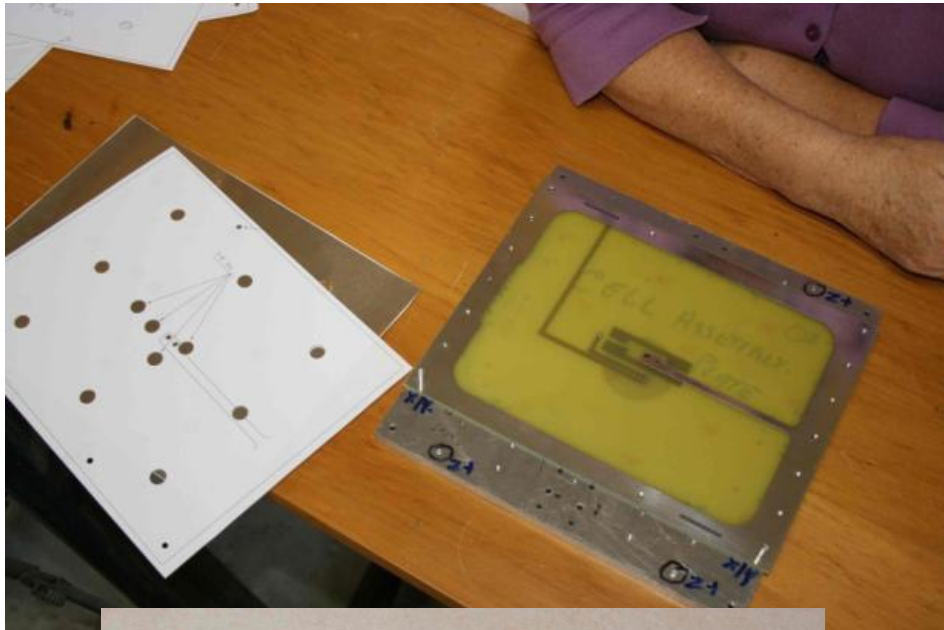


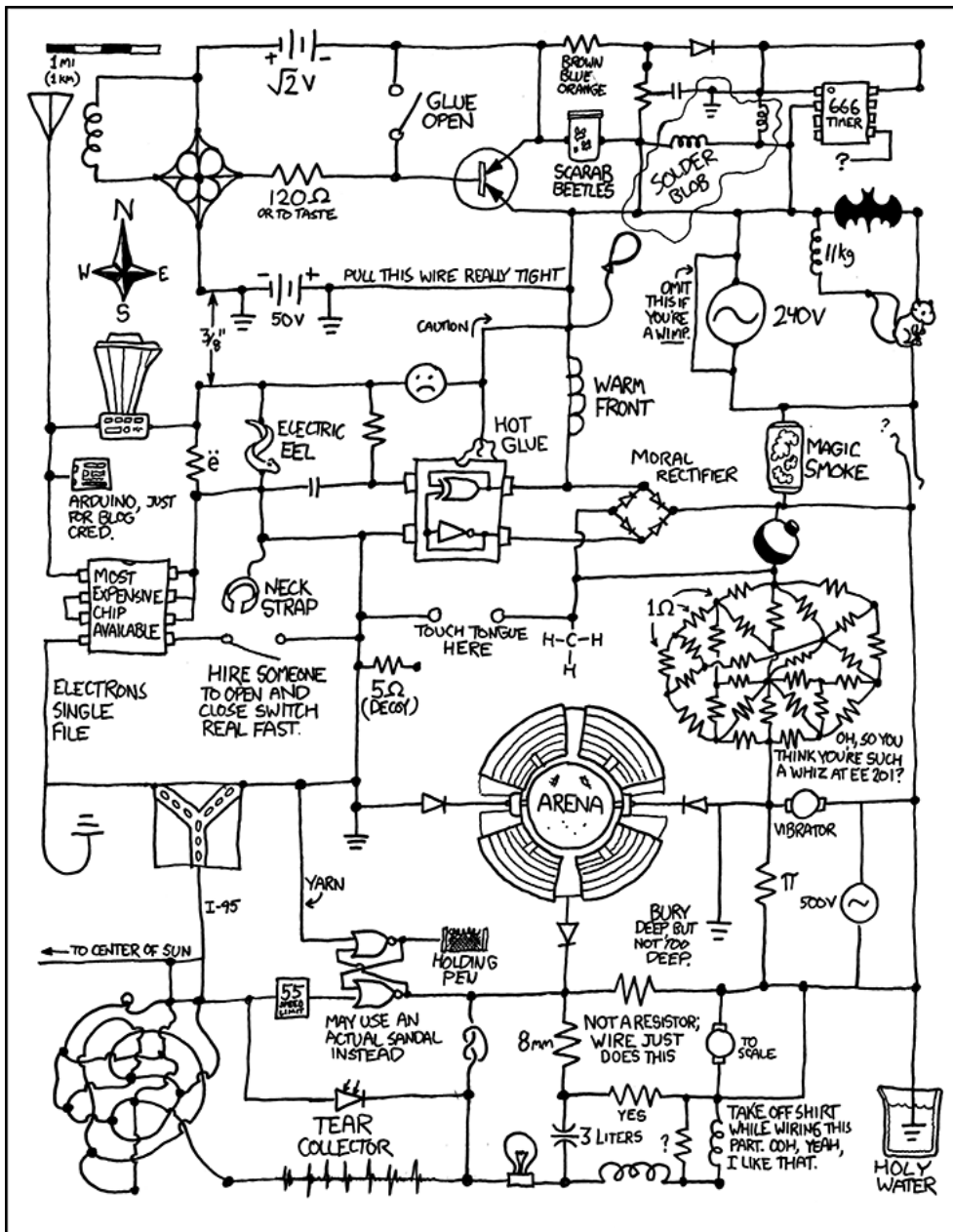
On the hardware side, the only outstanding item is a slight change in the GPS control PCB which should be completed within the next month.

Solar Cell make-up

Fred ZL1BYP has obtained suitable “glue” for attaching the solar cells to their backing. Fred will lay down the solar cells shortly when a new supply of glue arrives. The following pictures illustrate some of the templates and guides used to align the cells onto the adhesive.







Thanks to xkcd.com

Upcoming Happenings & Events

<i>Date</i>	<i>Happenings & Events</i>
1st May	Rotorua Marathon (AREC)
3rd May	HF Net, 3.575 MHz, 19:30
4th May	VHF Net, 146.525 MHz, 20:00
6-9 May	40th WRC Rally New Zealand (AREC)
8th May	NZART Boat Anchor Sprint
9th May	NZART HQ Info-Line
10th May	Break-In copy due
10th May	HF Net, 3.575 MHz, 19:30
11th May	VHF Net, 146.525 MHz, 20:00
15th May	GlobalSET
15-16 May	NZART Sangster Shield Contest (CW)
17th May	HF Net, 3.575 MHz, 19:30
18th May	VHF Net, 146.525 MHz, 20:00
19th May	General Meeting
22nd May	VK/Trans-Tasman 80m CW & Digital
23rd May	NZART HQ Info-Line
24th May	HF Net, 3.575 MHz, 19:30
25th May	VHF Net, 146.525 MHz, 20:00
30th May	NZART Official Broadcast
31st May	HF Net, 3.575 MHz, 19:30

5-7 June—NZART Conference (Auckland)
8th June—NZART Official Broadcast
12-13 June—NZART Hibernation Contest
12th June—VK/Trans-Tasman 160m Phone
13th June—NZART HQ Info-Line
27th June—NZART Official Broadcast
27th June—NZART HQ Info-Line
30th June—AREC Section Meeting (AREC)
3-4 July—NZART Memorial Contest
10-11 July—IARU HF World Championship
24th July—Waitakere Sprints (Phone)
7th August—Waitakere Sprints (CW)
7th August—NZART Boat Anchor Sprint
7-8 August—NZART Brass Monkey Contest
August—Hamilton Market Day
21-22 August—Lighthouse Weekend—ILLW
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)

For more information on any of the above please contact myself or any committee member.

AREC Event Operators Page

WRC Rally NZ/ Possum Bourne Rally	Saturday 6-9 May 2010	Organiser : ZL1DK
Please contact the Section Leader with your team information and he will pass it on to Auckland.		

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

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

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

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: RAMDisc sitting on top of the IHU as it will in flight—KiwiSAT <http://www.kiwisat.org.nz/index.html>

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