

Ham Hum

June 2012



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



Next General Meeting

**20th June : NZART Conference report,
Hamilton City plan, Tauranga City plan**

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From the Editor

The date for the annual Hamilton Market Day has been set. This event has been around for several decades, and over that time has become a highly recognised and prominent event on the Ham Calendar. And while the number of vendors may not be the same as set in previous record years, the number of Hams visiting Hamilton to catch up with old/new friends is still the same. Make sure you have 11th August in your diary. *(picture by ZL1GWP)*



See page 6 for details.

Yaesu have an interesting handheld radio planned. The FT1D (see page 7) is unique in that it offers digital mode voice using 4-FSK encoding rather than the GMSK scheme used by ICOM. Apparently 4-FSK is very common in the European PMR market., so will be interesting to see how this goes in the Amateur Radio market.

The General Meeting on the 20th June will include a report back from NZART Conference, a report on the Hamilton City plan, a report on the outcome of the Tauranga City appeal and its implications, and possibly a video if there is time.

Next Committee Meetings - 6th June & 4th July

SB PROP ARL ARLP021

ARLP021 Propagation de K7RA

Average daily sunspot numbers declined seven points over the past week to 110.3. Average daily solar flux dropped 3.3 points to 131.

Unsettled geomagnetic conditions over the past few days most likely resulted from an interplanetary shock wave originating from a solar flare on May 20. Predicted planetary A index is 8, 5, and 8 on May 25-27, then 5 on May 28 to June 4, then 8, 12, 15, 10 and 8 on June 5-9, then 5 on June 10-11, 8 on June 12-13, 5 on June 14-16, then 8, 15, 10 and 8 on June 17-20, and 5 on June 21-25.

Predicted solar flux is 115 on May 25, 110 on May 26 through June 1, 125 on June 2-3, 130 on June 4, 135 on June 5-9, 130 on June 10, 125 on June 11-12, and 120 on June 13-15. Six new sunspot groups arose since May 15, one each on May 15, 18, 20, 22, 23 and 24. Until June 4, predicted solar flux values are below the average for the past week, 127.7.

We are again receiving geomagnetic forecasts from the Czech Republic, this from Frantisek K. Janda, OK1HH of Ondrejov, from the Czech Propagation Interest Group. He predicts quiet to unsettled conditions on May 25-26, quiet on May 27-28, mostly quiet May 29, quiet to active May 30, quiet May 31 to June 1, mostly quiet on June 2, quiet to unsettled June 3, quiet to active June 4, active on June 5, quiet to active June 6, active on June 7, quiet to active June 8, quiet to unsettled June 9, quiet June 10-11, quiet to active June 12, mostly quiet June 13, and quiet to unsettled on June 14-15. OK1HH says that on May 30-31 and again on June 5 there is a high probability of changes in the solar wind, which may cause changes in the magnetosphere and ionosphere.

Bill Lauterbach, WA8MEA of Hanover, Michigan had a question about MUF (Maximum Usable Frequency) and LUF (Lowest Usable Frequency). He says the LUF seems to have changed so that it is sometimes close to the MUF in the current cycle. He wonders if LUF should be lower when MUF is higher.

We passed this on to Carl Luetzelschwab, K9LA. Carl commented, "The MUF is determined by the amount of ionization - most of the time it's the amount of ionization in the F2 region that sets the MUF. And you can't do anything to your station to change the MUF."

"The LUF is essentially determined by absorption in the D region. You can lower the LUF on a given path by increasing transmit power or increasing your antenna gain or somehow reducing your man-made noise. In essence your LUF is the frequency at which the received signal is at your noise level."

"Since a higher MUF means more ionization, it seems to me that generally there

would be more absorption, too, which would increase the LUF."

Thanks, Carl!

Another Carl, N5XE, Carl Hickman of Sulphur, Oklahoma wrote "On Thursday evening (0330 UTC Friday, May 25, 2012), I called CQ on 15 meters. TA2KN answered my call with a 599 plus signal. He was so strong, I was hearing an echo on his signal (both short and long paths), which made copy somewhat tough. Both paths were strong -- he was LOUD! I had to use my attenuator to lessen the effects of his long path signals."

"Less than 10 minutes later, I worked N5RB on the same band (short skip for me). After 33 plus years as a ham, I am still amazed at propagation conditions that crop up from time to time. It's always fun to participate in rare openings on the bands."

Thanks, Carl. TA2KN is at a scout camp in Turkey, where they have quite a nice antenna system. Carl worked them at what is probably the best time of the day on 15 meters over that path at this time of year. I see that the short skip distance that Carl mentioned between N5RB (Ecu, Mississippi) and N5XE in Oklahoma is 452 miles. I calculated that by looking up their licensed addresses on a map, then using the latitude and longitude for each station to calculate distance on W6ELprop. Carl heard the station in Turkey on both long and short paths, and those distances are 6,194 miles and 18,680 miles. This was calculated using the location for the scout camp shown on <http://aprs.fi/info/a/TA2KN>, which is 41.07 degrees north latitude, 29.117 degrees east longitude.

Don Kalinowski, NJ2E of Cary, North Carolina alerted us to the National Air and Space Lecture Series, and one about the Solar Dynamics Observatory. See it at <http://airandspace.si.edu/events/eventDetail.cfm?eventID=2768> and click on the View Archived Recording link to watch the 71 minute video, titled "The Solar Dynamics Observatory: The Sun Up Close and Personal."

Jon Jones, N0JK of Lawrence, Kansas fills us in on 6 meter activity with a station in Argentina. He wrote, "Some interesting propagation on 6 Meters the afternoon of May 19."

"K0HA EN10 NE reported working LU1DMA around 2010 UTC. I went out portable with a 2- element Yagi."

"Initially I heard no signals other than the WB0RMO/b EN10 on groundwave."

"Then at 2105 UTC, LU8YD appeared on 50.110 on an otherwise dead band. Weak, then built up to a reasonable signal."

"Called him, and he replied. Gave me a '5x5' and copied EM28 fine. His grid is FF51 and logged at 2108 UTC. I see Alex was spotted by K2ZD and a W3."

"This was probably an 'Es link' to afternoon TEP. There were single hop Es before

to Florida and afterwards to W3, W4 and W7."

"First LU on 6 Meters in solar cycle 24 for me."

Thank you, Jon.

Jeff Hartley, N8II of Shepherdstown, West Virginia wrote on May 19, "I haven't been on the air much, but did manage to work the 7O6T guys on 40 thru 15 meters, one QRP QSO near the end on 15 phone. Signals were loud on 20 thru 15 most of the time in our evening. The big operation stimulated quite a round of how to work a rare one with big pile ups on the PVRC reflector. Some DXers are obviously masters of the art. One tip I find very useful in spotting the listening frequency on CW is to listen with a wide filter (over 2 kHz); it makes finding the DX station caller much easier. Then try to figure out which way they are tuning and follow along a bit higher or lower depending on what direction they are tuning."

"I operated in the CQ M contest May 12th just about 2-1/2 hours and found 20 meters to be very poor from 1200-1300Z, but 15 sounded good with one of the loudest signals from UP0L. On 20 in the evening around 0200Z, there were loud signals from western Europe across to Zone 18, but virtually all except EA's had heavy flutter, making copying at high speeds difficult."

"It is Dayton weekend, so the bands should be abnormally quiet. I will try and make some noise."

This weekend is the CQ World Wide WPX Contest. Conditions should be fair, with unsettled but not terribly active geomagnetic conditions, and low sunspot activity.

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

For more information concerning radio propagation, see the ARRL Technical Information Service at <http://arrl.org/propagation-of-rf-signals>. For an explanation of the numbers used in this bulletin, see <http://arrl.org/the-sun-the-earth-the-ionosphere>. An archive of past propagation bulletins is at <http://arrl.org/w1aw-bulletins-archive-propagation>. Find more good information and tutorials on propagation at <http://myplace.frontier.com/~k9la/>.

Monthly propagation charts between four USA regions and twelve overseas locations are at <http://arrl.org/propagation>.

Sunspot numbers for May 17 through 23 were 114, 118, 110, 124, 120, 95, and 91, with a mean of 110.3. 10.7 cm flux was 136.3, 132.2, 130.9, 130.8, 125.1, 121.3 and 117.2, with a mean of 127.7. Estimated planetary A indices were 6, 8, 5, 13, 7, 16, and 18, with a mean of 10.4. Estimated mid-latitude A indices were 5, 8, 5, 12, 7, 15, and 13, with a mean of 9.3.

Hamilton Amateur
Radio Club

MARKET DAY

Saturday

August 11th, 2012

Hamilton Table Tennis
Club Rooms

Edgecumbe Street

Vendors from 8.00 am

Buyers from 10.00 am

Table space at \$20 per metre pre-paid

\$25 per metre on the day

All enquiries to: Market Day,

Hamilton Amateur Radio Club,

PO Box 606, Hamilton

E-mail: harcmday@nzart.org.nz

Web: http://z11ux.tripod.com/market_day.html

Yaesu FT1D Digital Handheld

One of the most eagerly awaited products at Dayton Hamvention was the new **Yaesu FT1D** digital and FM handheld.

It has, for an Amateur Radio rig, a number of innovations:

- A microphone that uses a mini-USB plug and has a built-in camera for low resolution (320x240) pictures,
- An 80 character group short messaging facility
- 9600 bps data transfer
- Micro-SD card slot
- E-GPS facility



Although the optional extra microphone has a camera there appears to be no way to display the pictures on the radio which some may see as reducing it's usefulness.

The use of 9600 bps with 12.5 kHz channel spacing (is it 10 kHz in Japan?) was a surprise. Some had expected it to support 5 or 6.25 kHz channel spacing with a resultant data rate of 4800 bps (digital speech using an AMBE vocoder only requires a 3600 bps data rate).

The modulation used is what Yaesu describes as C4FM oth-

erwise known as 4 level FSK or 4-FSK and is the same as that used for Digital PMR-446 equipment. 4-FSK has advantages over other types of digital modulation such as GMSK.

Both ICOM and Kenwood have been producing 4-FSK equipment for the PMR market since 2007 so in some ways it's surprising that Yaesu beat them both in releasing an amateur version of 4-FSK.

As yet Yaesu hasn't announced any mobiles, base stations or repeaters so it appears that FT1D's can only talk to other FT1D's in digital mode.

After Dayton some questions remain:

- Does it have APRS? The website of at least one amateur radio dealer had been saying the rig did APRS but the brochure makes no mention of it only referring to E-GPS

- Which Vocoder does it use? The AMBE seems the obvious choice but the brochure doesn't say

- What will it cost? Yaesu currently sell the VXD-10 high power digital handheld to the leisure market for 63,000 yen (\$796) hopefully the FT1D will be cheaper!

<http://tinyurl.com/VXD10-Handheld>

- When will the FT1D be available? Well one Japanese retailer indicates that it could be another six months, see

<http://tinyurl.com/CQCQDE-Shop>

The FT1DR/E brochure can be seen at

http://www.radioworld.ca/product_brochures/amateur/yaesu_brochures/ft1d_brochure_front.pdf

http://www.radioworld.ca/product_brochures/amateur/yaesu_brochures/ft1d_brochure_back.pdf

N9XLC Blog on FT1D

<http://n9xlc.blogspot.co.uk/2012/05/yaesu-ft-1d-redux.html>

2005 Icom and Kenwood demo 'Very Narrowband Digital Communications Technology'

http://www.southgatearc.org/news/apr2005/icom_kenwood_demo.htm

- SouthgateARC



Amateur radio essential tool

Behind the scenes at every Drivesouth Rally of Otago a team of local amateur radio enthusiasts works tirelessly to keep track of every car.

Their support is vital to the three-day event, which started last night, as there is either unreliable or no cellphone reception where many of rally's stages are held.

Otago Amateur Radio Emergency Communications (AREC) team leader Lindsey Ross said 28 members would be helping out in what was a "massive exercise" for the group.

The team would be based at the Southern Cross Hotel where it had equipment set up on the roof and a control centre on the fifth floor.

Its most important role was in ensuring the safety of rally competitors by keeping track of every car and making sure they had not left the track.

To do this the team had people at the start, end and in some cases middle of each stage who would radio back to the control centre when each car passed.

Members also kept track of times and gave the information to race organisers.

Ross said the "wide area" of the rally -- from Milton in the south to the wider Palmerston area in the north -- provided a unique set of challenges.

This meant "traditional" radio technology was needed to get information out of areas, such as Whare Flat, where more modern technology such as cellphones could not be relied upon.

"Often we are having to put a portable repeater in to actually get radio communication from a location," he said.

Fellow AREC member Martin Balch said the event gave them important experience for responding to search and rescue operations and other emergency responses in which the group often took part.

"Things like this give us a lot of very good practice, because we use almost every resource that we have got.

- Otago Daily Times vaughan.elder@odt.co.nz

Introduction to Amateur Radio Direction Finding

Radio direction finding is a set of skills used to find hidden radio transmitters.

Amateur radio operators practice these skills in events called "foxhunts" or "t-hunts". With these skills, they are better prepared to serve their communities in a variety of emergency situations.

Amateur radio clubs worldwide sponsor foxhunts, where individuals and teams compete to find hidden transmitters. Most hunts are open, and clubs welcome new participants. On-the-hunt training and coaching are readily available.

Find a club in your area, and start hunting!

Watch Introduction to Amateur Radio Direction Finding

http://www.youtube.com/watch?v=1qHyliSK7Lo&feature=player_embedded

- SouthgateARC



Upcoming Happenings & Events

<i>Date</i>	<i>Happenings & Events</i>
1st June	NZART HQ Infoline
1-4 June	NZART Conference—Nelson
3rd June	NZART HQ Infoline
3rd June	NZART Official Broadcast
4th June	HF Net, 3.575 MHz, 19:30
5th June	VHF Net, 146.525 MHz, 20:00
9th June	NZART Hibernation Contest
11th June	HF Net, 3.575 MHz, 19:30
12th June	VHF Net, 146.525 MHz, 20:00
15th June	NZART HQ Infoline
18th June	HF Net, 3.575 MHz, 19:30
19th June	VHF Net, 146.525 MHz, 20:00
20th June	Hamilton Club General Meeting
21-24 June	Rally New Zealand NZRC/WRC (AREC)
24th June	NZART Official Broadcast
25th June	HF Net, 3.575 MHz, 19:30
26th June	VHF Net, 146.525 MHz, 20:00

6th July—NZART HQ Infoline
7-8 July—NZART Memorial Contest
10th July—Break-In copy due
18th July—Hamilton Club General Meeting
20th July—NZART HQ Infoline
21st July—VK/Trans Tasman (160m all modes & 80m CW/Digi)
28th July—Waitakere Sprint (Phone)
29th July—NZART Official Broadcast
3rd August—NZART HQ Infoline
4th August—Waitakere Sprint (CW)
4th August—NZART Brass Monkey Contest
11th August—Hamilton Market Day
17th August—NZART HQ Infoline
26th August—NZART Official Broadcast
29th August—Hamilton Section AREC Meeting (AREC)
6th October—NZART Microwave Contest
31st October—Hamilton Section AREC Meeting (AREC)
4th November—NZART Straight Key Night
10-17 November—Silver Fern Rally-North Island (AREC)
30th November—AREC Section meeting
1st December—NZART VHF+ Field Day
Easter 2013—NZART Technology Conference - Auckland

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	21-24 June 2012	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	December 2012	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.		
I.		
J.		
K.		
L.		

Kairangi Hill Climb	Sunday September 2012		Organiser : ZL1IC
<u>Position</u>	<u>Operator</u>		
1.			
2.			
3.			
4.			
5.			
School C ycling	July 2012		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 2013		Organiser : ZL1PK
<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 B y			

For Details about and to help w ith 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://z1ux.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: Photo of a RCA 6CW4 belonging to ZL1PK. Ceramic base, metal shell triode with 6.3V heater used on VHF & UHF in the military. Apparently can withstand 150G. Operates in environment ranging from -190 degrees C to +350 degrees C.

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