



Ragchew

“The Voice of Branch 68”

May 2015

The North Canterbury Amateur Radio Club Inc.
PO Box 14, Woodend 7641



www.ncarcinc.weebly.com

Meetings are held at the Woodend Youth Centre, unless otherwise advised.



QTH

CLUB CALENDAR

Meetings start at 1930 hrs, unless otherwise stated.

Host for May – ZL3COL

May 14 General Meeting - “Antenna Analysers” by Paul Dixon ZL3VY

Branch 01 Ashburton

May 11 General Meeting - “Les ZL3UX” is host

Branch 05 Christchurch

May 6 General Meeting - “Remits followed by a Fun Photo Quiz”

Branch 56 Christchurch West

May 13 Free & Easy (1330 hrs)

26 General Meeting

CARDS

May 20 General Meeting

Nets and Frequencies

Club HF 3.665MHz, 1930hrs 1st Thursday of the month

Canterbury 2M SSB Net 144.200MHz every Tuesday from 2000 hrs (vertical polarisation)

Canterbury 6M Net 3850 6M Repeater Thursdays from 2000 hrs (vertical polarisation)

Canterbury Area Net 5625 Repeater, 2000 hrs on Sundays

National Broadcast last Sunday of the month at 2000 hrs on 3.900MHz, National System, 6975 and 705 Repeaters

>>> **Reminder: Subs are now due** <<<

*Secretary: Colin Rowe ZL3COL Phone 03 313 2303 Email: colingr@xtra.co.nz
Editor: Tony Buckland ZL3HAM Phone 03 312 5352 Email: zl3ham@scorch.co.nz*

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President's Report

Only a few weeks to go till the annual NZART Conference in Hamilton. I am looking forward to taking my place at the council table, I hope I am up for the task.

We had a great talk last month from Mark ZL3TKI on EMC/RFI emissions from badly installed variable frequency drives. A very interesting and informative presentation.

Remember that subs were due 30th April so get them to Denise if you haven't already done so.

On a more personal note my Butternut vertical has been performing well with several dx contacts made last month, I am very pleased and I hope to use it a lot more once my CW is up to speed (taking a while, but making steady progress).

Rob ZL3RO is moving up to Blenheim in May and we would like to thank him for his service on the Committee and assistance to the club and wish him and his family all the best for the future.

Have a good May and stay warm.

73 Don ZL3DMC

AREC Report

Nothing to report on the AREC front this time.

**Don ZL3DMC, S/L
Geoff ZL3QR, Dep S/L**

Repeater Reports



Mt. Noble 6975

Operating OK with a bit of a voltage drop with the onset of the shorter days. The West Coast link has been dropped to help conserve power. We plan to be up there before the onset of Winter to fix the relay that sticks on and check general maintenance. The relay causes the dump load and fan to operate continuously.

Mike ZL3AKZ

Mt. Grey 675

The Repeater failed at about 2030 hrs on Sun. 19th. Richard ZL4FZ has been building up a second repeater to interchange with the one on site. If this cannot be completed in time for the planned visit at ANZAC weekend, then the original Repeater may have to be installed as a temporary measure.

Geoff ZL3QR

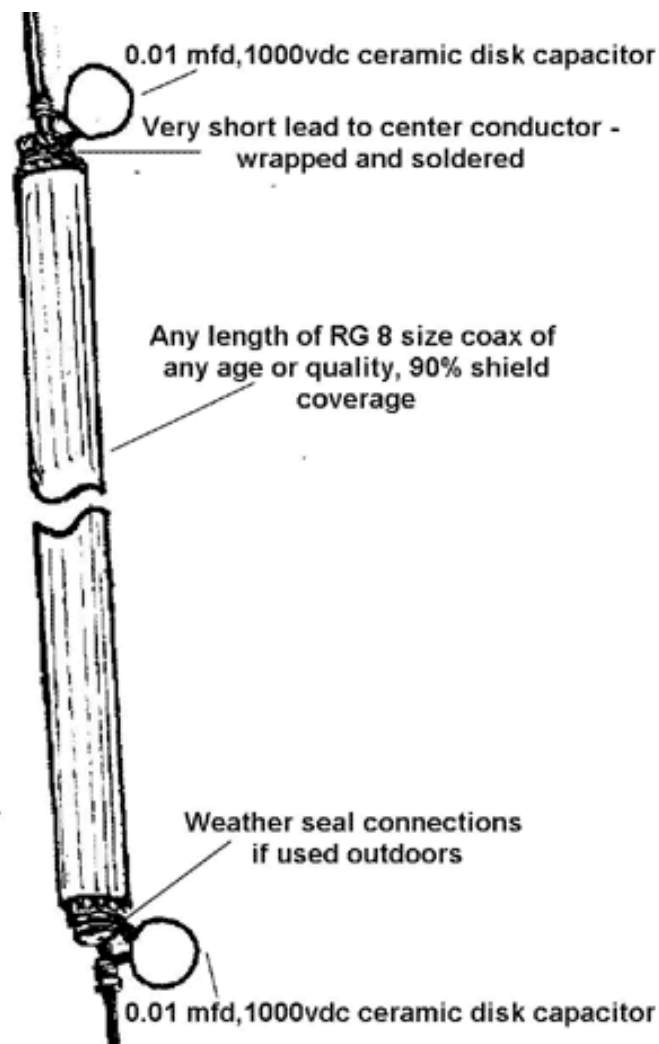


Another Useful Ground Connection

Use this graphic to construct a simple but effective first/second story ground.

Length of coax is not important, but shorter is always better. The capacitors are off the shelf models available at electronics supply store, online surplus or even on eBay. Be sure to trim the shield back far enough so there is no chance of it shorting to the centre conductor.

Connect the coax centre conductor to a good ground rod at one end and a single ground point for the equipment in your shack.



<http://www.balundesigns.com/support-downloads/>

April Meeting

Last month Mark Empson ZL3TKI gave us an informative talk, both technically & politically, and demo of EMC/RFI issues with Variable Frequency Drives. Most interesting and generated many questions. Thanks Mark.

This month Paul Dixon ZL3VY will give us a presentation on his amazing fully featured Antenna Analyser. An outstanding piece of kit, well worth seeing.



****May Happy Birthday's****

None admitted



New NanoTech May Provide Power Storage in Cables, Clothes



Imagine being able to carry all the juice you needed to power your MP3 player, smartphone and electric car in the fabric of your jacket?

Sounds like science fiction, but it may become a reality thanks to breakthrough technology developed at a University of Central Florida research lab.

So far electrical cables are used only to transmit electricity. However, nanotechnology scientist and professor Jayan Thomas and his Ph.D. student Zenan Yu have developed a way to both transmit and store electricity in a single lightweight copper wire.

Their work is the focus of the cover story of the June 30 issue of the material science journal *Advanced Materials* and science magazine [Nature](#) has published a detailed discussion about this technology in the current issue.

“It’s an interesting idea,” Thomas said. “When we did it and started talking about it, everyone we talked to said, ‘Hmm, never thought of that. It’s unique.’”

Copper wire is the starting point but eventually, Thomas said, as the technology improves, special fibers could also be developed with nanostructures to conduct and store energy.

More immediate applications could be seen in the design and development of electrical vehicles, space-launch vehicles and portable electronic devices. By being able to store and conduct energy on the same wire, heavy, space-consuming batteries could become a thing of the past. It is possible to further miniaturize the electronic devices or the space that has been previously used for batteries could be used for other purposes. In the case of launch vehicles, that could potentially lighten the load, making launches less costly, Thomas said.

Thomas and his team began with a single copper wire. Then he placed a sheath over the wire made up of nanowhiskers the team grew on the outer surface of the copper wire. These whiskers were then treated with a special alloy, which created an electrode. Two electrodes are needed for the powerful energy storage. So they had to figure out a way to create a second electrode.

They did it by adding a thin plastic sheet around the whiskers and wrapping it around using a metal sheath after generating nanowhiskers on (the second electrode and outer covering). The layers were then glued together with a special gel. Because of the insulation, the inner copper wire retains its ability to channel energy, but the layers around the wire independently store powerful energy.

In other words, Thomas and his team created a supercapacitor on the outside of the copper wire. Supercapacitors store powerful energy, like that needed to start a vehicle or heavy-construction equipment.

Although more work needs to be done, Thomas said the technique should be transferable to other types of materials. That could lead to specially treated clothing fibers being able to hold enough power for big tasks. For example, if flexible solar cells and these fibers were used in tandem to make a jacket, it could be used independently to power electronic gadgets and other devices.

“It’s very exciting,” Thomas said. “We take it step by step. I love getting to the lab everyday, and seeing what we can come up with next. Sometimes things don’t work out, but even those failures teach us a lot of things.”

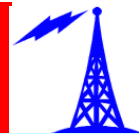
Yu is the co-author of the study. He works in Thomas’ Nano Energy-Photonics Group. It conducts research focused primarily on nanostructured supercapacitors and Lithium-ion batteries, nanoarchitected light-trapping solar cells, photorefractive polymers for 3D display applications, and nonlinear optical materials.

Thomas is a faculty member at the UCF Nanoscience Technology Center with joint appointments in the College of Optics and Photonics (CREOL) and the College of Engineering and Computer Science. He has multiple degrees including a master’s degree in chemistry and a Ph.D. in material science. He is a recipient of National Science Foundation’s prestigious CAREER award. He’s received media attention over the past few years for his work on lasers and advanced nanomaterials.



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CALENDAR for 2015**General Meeting - Second Thursday at 1930 (7.30pm)**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
-				14	11	9	13	10	8	12	10

Committee Meeting - Fourth Thursday at 1930 (7.30pm)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
				28	25	23	27	24	22	26	-

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