



**NZART Headquarters Infoline**  
*a service from*  
The New Zealand Association of Radio Transmitters



NZART Headquarters Infoline Issue 204  
04-APRIL-2010

NZART Website: <http://www.nzart.org.nz/>

Greetings

Welcome to Headquarters-Infoline a twice-monthly bulletin of news from NZART Headquarters e-mailed directly to Branches, the amateur radio packet Bulletin Board Service and to others that subscribe through the NZART Website at:

<http://www.nzart.org.nz/lists/infolinelist.html>

**In This Issue**

- \*From The Business Manager ZL2TDM
- \*ARRL IN ACTION: WHAT HAVE WE BEEN UP TO LATELY?
- \*Sixty-two Years of The Transistor
- \*WEIRD AND WONDERFUL
- \*Copper Wire
- \*Top 10 Worst Passwords
- \*Upcoming Events
- \*Contest News
- ==VHF/UHF/SHF Contest Notes
- ==HF Contests
- \*General Information For Break-In and HQ Infoline
- \***Attachment(s) for Branches:** NZART Headquarters Infoline 204.doc

\*\*\*\*\*

**From The Business Manager ZL2TDM**

**Debby says....**

Not a lot of news this week.

Just wishing you all a very happy Easter. Not long now until the Conference in Auckland, so as advised, I posted out the branch membership voting figures to all secretaries yesterday.

Talk soon....Debby ZL2TDM

\*\*\*\*\*

**==> ARRL IN ACTION: WHAT HAVE WE BEEN UP TO LATELY?**

This feature -- including convenient Web links to useful information -- is a concise monthly update of some of the things ARRL is doing on behalf of its members, including signing a new Memorandum of Understanding with the American Red Cross, preparing for WRC-12 (World Radio Conference-12), legislative actions, holding workshops to help teachers introduce wireless technology in their classrooms, promoting on-the-air events, investigating power line noise and more. This installment covers the month of March. Read more here:

<http://www.arrl.org/news/features/2010/04/01/11415/?nc=1>

\*\*\*\*\*

**Sixty-two Years of The Transistor**

"Where a calculator on the ENIAC is equipped with 18,000 vacuum tubes and weighs 30 tons, computers in the future may have 1,000 vacuum tubes and perhaps weigh 1.5 tons."

Popular Mechanics, March 1949

In 1947, John Bardeen and Walter Brattain at AT&T's Bell Labs in the United States noted that the output power was larger than the input power when electrical contacts were applied to a crystal of germanium. Another worker at the AT&T's Bell Labs, William Shockley, saw the potential in this and developed the transistor. The term, 'transistor', was coined by John R. Pierce from the words 'transfer' and 'resistance'.

The first silicon transistor was produced by Texas Instruments in 1954. This was the work of Gordon Teal, an expert in growing crystals of high purity, who had previously worked at Bell Labs. The first MOS transistor actually built was by Kahng and Atalla at Bell Labs in 1960.

The transistor is the key active component in practically all modern electronics.

Although several companies each produce over a billion individually-packaged (known as discrete) transistors every year, the vast majority of transistors now produced are in integrated circuits (IC). Complete electronic circuits are made by combining integrated circuits with diodes, resistors, capacitors and other electronic components.

In 2010, a microprocessor, the heart of your home computer, could have up to 820 million transistors with a speed of over 3 GHz.

Do you remember the XT or '286' computer? This computer, from 1982, had a microprocessor that had 134 000 transistors in it and a speed of 6 MHz!

About 60 million transistors were built in 2002 for each man, woman, and child on Earth.

The transistor's low cost, flexibility, and reliability have made it a universal device. Transistorised mechatronic circuits have replaced electromechanical devices in controlling appliances and machinery. It is often easier and cheaper to use a standard microcontroller (a microprocessor with input and output circuits), and write a computer program to carry out a control function than to design an equivalent mechanical device.

\*\*\*\*\*

### **WEIRD AND WONDERFUL**

Up to 250 watts harvested from your shock absorbers

All you mobilers could be generating enormous amounts of energy as you hit those bumps...HIHI.

In a recent study, mechanical engineers from the State University of New York have designed and tested a retrofit regenerative shock absorber that recovers a vehicle's vibrational energy.

The researchers built a 1:2 scale prototype of the regenerative shock absorber, and demonstrated its ability to harvest 2-8 watts of power during typical driving conditions at a speed of about 45 mph. They predict that a full-scale system on a four-wheel car should be able to recover up to 256 watts under these driving conditions.

The researchers predict the ability to harvest approximately 64 watts per wheel, for a total of about 250 watts for a 4-wheel car, the value increasing considerably when the system is used on irregular roads.

It was found that the power regenerated is proportional to the square of the magnetic flux across the coils. Consequently, increasing the flux by twos, quadruples the peak power output.

<http://iopscience.iop.org/0964-1726/19/4/045003/>

(Sourced from Elektor E-Magazine and WIA Weekly News)

\*\*\*\*\*

### **Copper Wire**

After having dug to a depth of 10 feet last year, New York scientists found traces of copper wire dating back 100 years and came to the conclusion, that their ancestors already had a telephone network more than 100 years ago.

Not to be outdone by the New Yorkers, in the weeks that followed, a California archaeologist dug to a depth of 20 feet, and shortly after, a story in the LA Times read: "California archaeologists, after finding 200 year old copper wire, have concluded that their ancestors already had an advanced high-tech communications network a hundred years earlier than the New Yorkers"

One week later, a local newspaper in Ohio reported the following:

"After digging as deep as 30 feet in his pasture near Findlay, Ohio, Bubba, a self-taught archaeologist, reported that he found absolutely nothing. Bubba has therefore concluded that 300 years ago, Ohio had already gone wireless".

Buckeyes are such a proud bunch.

(BUCKEYES is the general name for members of The Ohio State University Department of Athletics)

\*\*\*\*\*

### **Top 10 Worst Passwords**

The following is a list of the most predictable passwords, and should not be used under any circumstances (Source: pcworld.com):

1. 123456
2. 12345
3. 123456789
4. Password
5. iloveyou
6. princess
7. rockyou
8. 1234567
9. 12345678
10. abc123

\*\*\*\*\*

### **Upcoming Events**

#### **NZART Annual Conference Auckland 5th - 7th June 2010**

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

#### **2010 Silver Rally 14-20 Nov 2010**

<http://www.silverfernally.co.nz/>, or  
<http://www.nzart.org.nz/html/2010/02.html#feb03>

\*\*\*\*\*

### **Contest News**

#### **VHF/UHF/SHF Contest Notes**

##### **NEXT WEEKEND**

The next contest is the LOW BAND CONTEST, 50 MHz to 440 MHz, on Saturday the 10th and Sunday the 11th of April 2010. This is the weekend after Easter. The operating times are: Saturday 1700 to 2300 NZT and Sunday 0700 to 1300 NZT.

**The rules are available at:** <http://www.vhf.org.nz/VHF-UHF-SHF-ContestRules>

Logs should be sent within two weeks, to:

[zl2wa@clear.net.nz](mailto:zl2wa@clear.net.nz) with Contest Log in the subject line,

or by post to:

Contest Manager, Wellington VHF Group, P.O. Box 12-259, Thorndon, Wellington

Wellington VHF Group Website <http://www.vhf.org.nz>

====

### **HF Contests**

#### **NZART WARO THELMA SOUPER MEMORIAL CONTEST**

When: - 10 and 11 April 2010

Times:- 0800Z until 1000Z both evenings

Modes :- CW and SSB

The Annual memorial contest activity to commemorate the memory of the Late Thelma Souper a former stalwart of the NZ Women Amateur Radio Operators and considered to be "The Grand Old Dame" of WARO.

Contest Rules and Other Operating information are now available from the WARO Website :-

<http://www.qsl.net/zl6yl/awards.html>.

#### **KIWI DX GROUP DIGITAL MODES CONTESTS**

80M - 17 April 2010

40M - 24 April 2010

Times - 1000 UTC until 1100 UTC both evenings

Contest Rules and Other Operating Information available from the Group's Website

[http://www.qsl.net/zl2sky/new\\_page\\_1.htm](http://www.qsl.net/zl2sky/new_page_1.htm)

## 2010 NZART SANGSTER SHIELD QRP CW CONTEST

When :- Saturday, 15 May 2010 and Sunday, 16 May 2010

Times :- 2000 NZST until 2300 NZST each evening

Band :- 80m

Mode :- CW only.

The contest was established in 1927 at the time the late Mr. Ralph Sangster presented to the radio Amateurs of NZ the trophy, known as the Sangster Shield, for annual competition to be won by the most efficient station. It is pertinent to note not only did the efficiency of the station be taken into account, but also the efficiency of the operator concerned. The terms of the gift of the trophy were that the competition was to be conducted on the 80 metre band using input power of not more than 5 watts and to be solely restricted to Morse operation.

## 2010 NZART MEMORIAL CONTEST

When :- 3 & 4 July 2010

Times :- 2000 NZST until 2300 NZST both evenings

Band :- 80m

Modes :- CW and Phone

The Memorial Contest was established soon after the end of World War 2 to commemorate those who lost their lives in the service of their country. It is a fitting way to honour those Hams and others who selflessly served their country so that we, today, may enjoy the freedoms that we do.

The Contest is split into a number of categories catering for all HF interests so please spare an hour, or two to honour those who paid the ultimate price that we now enjoy in our present lifestyles.

Contest Rules and Other Operating Information is available from the NZART

Website :- <http://www.nzart.org.nz/contests/index.html>

Contest Rules and other Operating Information is available from the NZART website -

<http://www.nzart.org.nz/contests/index.html>

### For the contests below please see the latest "Contest Manager's Report"

This can be found on the NZART Web Contest page at:

<http://www.nzart.org.nz/contests/index.html>

None this time

\*\*\*\*\*

## General Information For Break-In and HQ Infoline

### Break-In - From the Break-In Editor John ZL3IB

1. **Closing Date Reminder:** Copy for the MAY/JUNE issue of Break-In closes on 10-MAY-2010.
2. **Document File Format:** Please do not send copy for publication as Word 2007.docx files; they cannot be processed. Please send in Word 2003 (or earlier).doc or \*.rtf file format.
3. **Early receipt of copy is much appreciated.**
4. **Break-In Contents Index** from 1947 can be found at:  
<http://www.nzart.org.nz/breakin/index/index.html>
5. **To search the COMPLETE CONTENTS from 1947, use the page menu entry of:** "Search all index pages up to Jan 2010 HTML 435 kB" Found on the "Index for Break-In Volumes 20 to 82" page. All the yearly pages have been combined into one page for your convenience.  
<http://www.nzart.org.nz/breakin/index/all-bi-index.html> 433 kB
6. **Copy for the AREC Break-In Column - From Geoff ZL3QR:** The close-of-copy date is the 03-MAY-2010 for articles for publication in the AREC COLUMN OF BREAK-IN. Photos, if available, to be on a separate floppy or CD (with captions), posted DIRECTLY TO US Call Book address. All other material can go to e-mail:  
[zl3qr@nzart.org.nz](mailto:zl3qr@nzart.org.nz) or [zl3ov@nzart.org.nz](mailto:zl3ov@nzart.org.nz).

====

**The WIA Weekly News Bulletin and The ARRL Letter can be found at:**

**WIA Weekly News Bulletin:** <http://www.nzart.org.nz/html/2010/wia-weekly-news.txt>

**ARRL Letter:** <http://www.nzart.org.nz/html/2010/arrl-weekly-news.txt>

====

**Subscribe to and Un-Subscribe From Infoline**

Please send an e-mail to the address at the end of this bulletin or see instructions on the NZART web page at:

<http://www.nzart.org.nz/lists/infolinelist.html>

====

**Dates for Official Broadcast (OB) and Head Quarter's Infoline**

OBs FOR 2010

FEB-28 MAR-28 APR-25 MAY-30 JUN-08-27

JUL-25 AUG-29 SEP-26 OCT-31 NOV-28 DEC-19

**\* Next NZART Official Broadcast is on 25-APRIL-2010 \* and**

**\* Next HQ-Infoline e-mailed on SUNDAY 18-APRIL-2010 \***

INFOLINE 2010 SUNDAY

JAN-17 FEB-07-21 MAR-07-21 APR-04-18 MAY-09-23 JUN-13-27

JUL-04-18 AUG-08-22 SEP-05-19 OCT-03-17 NOV-07-21 DEC-05-19

[Infoline on the web http://www.nzart.org.nz/infoline/](http://www.nzart.org.nz/infoline/)

Regards, Jamie Pye ZL2NN, Editor [zl2nn@nzart.org.nz](mailto:zl2nn@nzart.org.nz)