

June 2015

# INTERFACE

MONTHLY BULLETIN

MARLBOROUGH AMATEUR RADIO CLUB INC. P.O. BOX 432 BLENHEIM NZ

## Club Calendar

General Meeting; 11 June EOC, 19.30hrs

Social Group; 18 June 12.00hrs - The Vines

Committee Meeting; 25 June 2015 07.30hrs - EOC



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## Branch 22 Notices

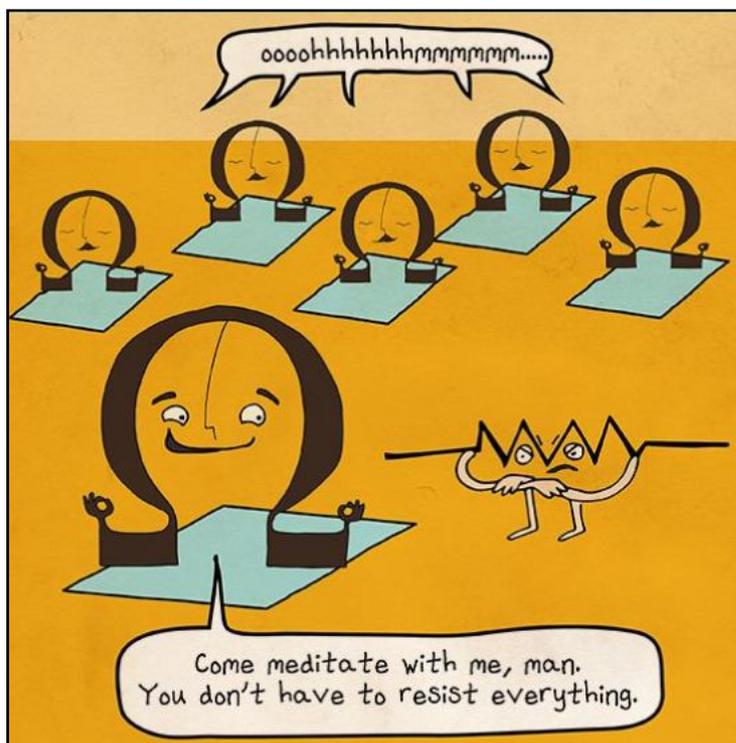
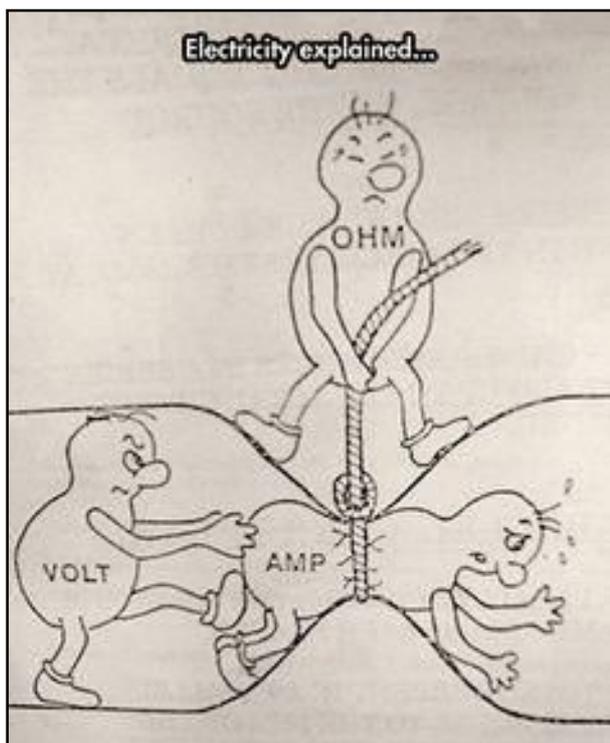
1. Show & Tell..... July 9
2. Truck Shed Cleanout..... July 11
3. Mid-winter Lunch..... TBA July/Aug

VHF Mondays 1930 hrs  
146.950MHz, 145.600MHz,  
147.225MHz

Net Controller; Ken Hynds ZL2KHZ

VHF - USB Net Wednesdays 1930  
144.150MHz

**GUEST SPEAKER NEXT MEETING;** Stuart Watchman, ZL2TW, will speak about his most recent trip to the USA, particularly on a visit to Dayton. Hmmm, wonder what caught his eye... the Dayton Aviation Heritage National Historical Park perhaps? Maybe the Packard Museum or the Dayton Hamfest? Whatever, it is sure to be interesting so come along and listen. Don't mention the airlines though as he had a bit of a problem with them there which resulted in an extra night's stay, changing connecting flights, and little sympathy or help from the airline that mucked up!



What Hamfest does a vampire hate the most? - DAYton ☺ (don't blame me for that one either!)

**MARLBOROUGH AMATEUR RADIO CLUB GENERAL MEETING**  
**Held at EOC on 14<sup>th</sup> May, 2015 @ 2030 hrs.**

**Present:** 19 members

**Apologies:** Helen Harris, Colleen Lawson, Stuart Watchman.

**Correspondence:**

**Incoming:** Bank Statement    Field Day Certificate    **Outgoing:** Branch Info to NZART HQ

**REPORTS:**

Treasurer Ken Hynds gave a brief statement of the current financial affairs.

**Business Arising:**

**Brayshaw Park Tower:** The sub-committee, henceforth to be known as the Working Group, have had their first meeting and discussed accommodation issues and general equipment requirements. Recommendations will be put to the next branch committee meeting following further investigations and another group meeting.

**General Business:**

**NZART Conference Remits:**

The three remits to be considered at National Conference were considered and voted upon.

Remit 1: 1 For; 12 Against; 5 Abstentions

Remit 2: 1 For; 15 Against; 1 Abstention

Remit 3: 5 For; 11 Against; 1 Abstention

**Club Future Planning Seminar:**

This is being offered on the 17<sup>th</sup> June by Volunteer Marlborough as a means to assist clubs and other organisations to look to their future existence. At \$10/head, it was moved that the club sponsor willing attendees. (John Neal/Kaye Hannagan)

Applications to be lodged by 10<sup>th</sup> June.

**EOC Truck Shed Cleanout:** To be scheduled for July.

**Mid-Winter Dinner:** Speights Ale-house, late July/early August. Committee to settle on a date.

**Field Day Success:** Bill flashed the Midlands Section First Place Certificate and thanked all who ensured the success by their participation and/or assistance.

**Secretariat:** To date, we are still hoping someone will offer to fill the position of Secretary!!!!!!

There being no further business the meeting was closed at 2134 hrs. This meeting had been preceded by a fascinating story from Isobel Holland on her wartime experience as a Y section monitor, copying enemy coded CW traffic for decoding at Bletchley Park. She also talked about what it was like living there then.



In 1943, the weekly ration for one person was:

1lb (450g) fresh meat	3oz (75g) cheese
1 egg	2oz (50g) cooking fat
2oz (50g) butter	8oz (200g) sugar
2oz (50g) tea	



## BLETCHLEY PARK - Photos taken by Grant & Caryl during their visit in 2009



Rebuild of "Tunny" machine used to decipher teleprinter messages



Main house at Bletchley Park

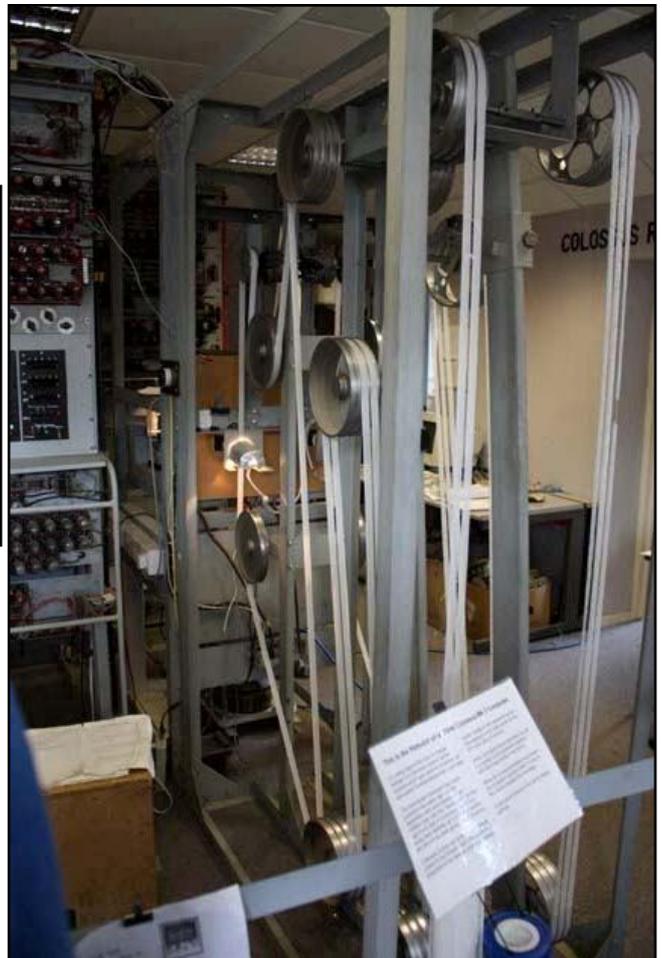


Y Station room where Morse code transmissions were intercepted and sent to Bletchley Park for decoding. This is probably what Isobel used when she worked at one of these stations.



Some of the many outbuildings at Bletchley Park. Very run down but as money comes to hand they hope to restore them too.

Paper tape loaded as an endless loop on the right hand end of Colossus. Here it is being read optically at 5,000 characters per second as data going into Colossus. Colossus then used its 2,500 valves and switched programmes to try various possible wheel starts, looking for the maximum score that appears on the lamp panel on the left hand side of Colossus. When the highest score has been found, it is printed on the typewriter together with the wheel setting it has found. When all 12 wheel positions have been found, the Tunny was used to decipher the message. It took about 8 hours to find all 12 wheel settings

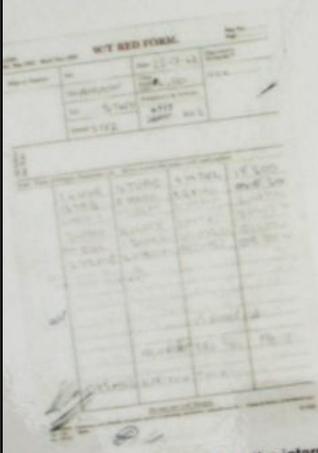


A very informative webpage about Enigma and other sneaky stuff is [www.codesandciphers.org.uk](http://www.codesandciphers.org.uk)

# Without the "Y" Service there would be no **Bletchley Park**

Although the Wireless Intercept (Y) service was not officially part of Bletchley Park it came under its control.

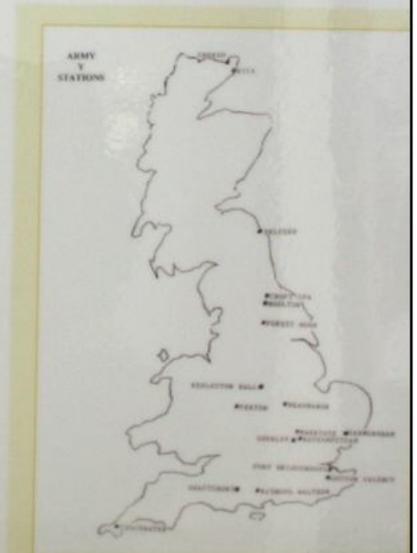
Each of the three services had its own intercept operation mostly staffed by women. As well as intercepting Enigma messages they intercepted all other messages transmitted by wireless including in the RAF's case conversations between Axis aircraft and their ground controllers. British night fighters were controlled by an operation based here.



The Red Form filled out by the intercept operators. Columns of 5 letter groups of Enigma messages.



The American HRO receiver – the work horse of the Y Service.



The British Army Y network headquartered at Beaumanor Leicestershire. There were similar networks for the Royal Navy and Royal Air Force.



One of the many mobile Y station.



Visit the Y station replica in the museum.



Rebuild of a 1944 Colossus Mk2 computer being used to find the 12 wheel settings on a German Lorenz cipher machine which was used to encipher an intercepted German teleprinter message. The message had been punched onto paper tape (see previous page) and loaded as an endless loop on the right hand end of Colossus (in this photo, it is behind the man in the pale blue shirt who stood in front and wouldn't get out of my way!)

**MARLBOROUGH AMATEUR RADIO CLUB COMMITTEE MEETING**  
**Held at EOC on 28th May, 2015 @ 19:35 hrs**

**Present:** Grant Simpson (President), Chris Grant, Bill Cousins (Acting Sec), Ken Hynds (Treasurer), Rob Carter, Ken Menzies

**Apologies:** Stuart Watchman, Paul Rennie

**Correspondence:**

**Inward:** Letter & donation from Graperide    Email from Rob Carpenter, ZL3RO    **Outward:** Nil

**Reports:**

**Finance:** Ken Hynds gave a brief report on the financial situation.

**Business Arising:**

- **Inventory of Club Equipment:** Ongoing.
- **Brayshaw Park HF site:** Bill reported that the Working Group had met twice and discussion largely centred around research into a suitable building, although remote operation software and equipment was also considered.
- After looking at seven different options from both Blenheim and Nelson, the group recommended to Committee an insulated and very well sealed 2.4 x 3.6 x 2.4m high unit from Martella Refrigeration (researched by Ken Menzies) which is similar to that used on the Ned. The latter has served us very well for a number of years. The expected cost is approx. \$10,000. One advantage that has been clarified is that the building will be a club asset (and therefore re-saleable if necessary) and could also house the club library, making the latter more accessible.
- Committee largely accepted this recommendation and this proposal will be presented to the club at the next General meeting.
- **Kaikoura Repeater:** Ongoing.
- **Guy Wires at Ward:** Ongoing.
- **Librarian's Job Description:** Gerard Van Antwerpen has been approached and a very satisfactory way forward determined, thanks to Gerard's suggestions.

**General Business:**

- **Truck Shed:** July 11<sup>th</sup> has been set to clean out the shed, beginning at 1000 hrs  
Any assistance would be appreciated.  
This should also allow the inventory work to be progressed.
- **Succession Planning Seminar:** Helen Harris has volunteered to represent the Club at this seminar.
- **Guest Speaker at Next General Meeting:** Stuart Watchman will speak on his recent trip overseas which included Dayton.
- **Show and Tell:** Following on from the successful and interesting presentations of previous years, members are offered another opportunity to demonstrate or speak on any project of their choosing at the General meeting on July 9<sup>th</sup>.
- **EOC Access Key:** Following several situations over time where members turned up for meetings only to find that EOC was inaccessible due to lack of someone with a key, Chris Grant (supported by others) strongly recommended that the President should have such a key.
- As the club already has four such keys, it was recommended that a re-distribution of possession is probably necessary.

**Next Committee Meeting:** 25th June, 2015

**Closure:** There being no further business the meeting was closed at 2035 hrs.

## CONFERENCE REPORT

I attended the NZART Conference in Hamilton over the Queen's Birthday weekend along with Stuart. Stuart was there in his capacity as Vice President and then at the close of the AGM, President.

All three remits were passed after some discussion. The third remit allowing for more flexibility in the setting of the conference date etc. had to be passed with at least 60% in favour. The votes were counted and there was 62.75% in favour.

The conference was opened by the Mayor of Hamilton (Julie Hardaker) followed by Radio Spectrum Management who spoke on the problems of noise and interference location with the modern forms of modulation being used and the various devices that cause problems.

One interesting problem was when an Amateur Radio UHF beacon was installed near a parking building. This was within its licence conditions and working correctly. The problem was a number of luxury cars used the parking building and they were all fitted with 433MHz remote locking systems. With the beacon running a few Watts nearby, the remote locking receivers were completely overloaded meaning no one could unlock their cars. The hams immediately shut the beacon down and moved it to a new (and ultimately better) location.

The Australian WIA member spoke on the happenings there. He told of the success of their foundation licence that was introduced 10 years ago.

I attended various forums on the Sunday. Probably the most interesting one for me was the presentation by John Yaldwyn (ZL4JY) on the AREC involvement with the DMR (digital mobile radio) network being built in New Zealand. This is funded through SAR funding. It uses local clubs' expertise to install and maintain the equipment. Because of the funding model, it was important that the system chosen was not tied to only one vendor, which ruled out the D\_Star system. Other systems such as P25 were too expensive. The DMR system, which was designed by ETSI, (in Europe) is an open source system so many manufacturers are producing equipment. These include Tait here in New Zealand.

The DMR system has been designed to fit in to the 12.5KHz channel spacing which is now the standard for commercial equipment and fast becoming adopted for amateur radio in many countries to improve spectrum efficiency. On analogue radios this is the narrow FM setting. This doubles the number of channels for a given amount of spectrum. The DMR system is able to have two voice circuits per 12.5KHz using TDMA techniques and the audio quality is excellent.

Motorola have put a lot of research and development into the system and are providing a lot of the infrastructure through the Motorola Amateur Radio Club (MARC). Look up DMR-MARC on the Internet for more information. Their network is an all digital group of more than 500 repeaters in 41 countries and has 12461 registered users. There are 1320 DMR repeaters world wide in the system database. Motorola use the name Mototrbo for their DMR radios. So far there are DMR repeaters at Colonial Knob, Hamilton, Wairarapa, Kapiti, and Dunedin with others planned for Tasman (Takaka Hill), Wellington and Christchurch. An STSP is also available.

Another interesting forum was presented by Murray Greenam (ZL1BPU) on the Fast Simple QSO mode for HF and VHF. There have been articles in the last two Break In issues but it's much easier to understand how it all works at a forum type presentation!

The very clever way this system works means it is narrow band (300Hz), requires no synchronisation and has no error correction, and can tolerate frequency drift of 50Hz. Not only is it capable of good text speed but can also handle sending of scanned documents and photos. You can send images direct from a webcam.

Because of the very efficient character coding scheme, the four transmission speeds of 6, 4.5, 3 and 2 Baud, relate to about 60 down to 20 words per minute. You change speed at the transmitter end and the receiver follows automatically. At 6 Baud, the sensitivity is believed to be down to -13dB and at 3 Baud, -16dB.

It should be possible to have templates for forms on the computers used so they can be filled in and transmitted so that the data is automatically inserted in the appropriate form at the

receive end. Very useful for AREC message forms etc. Maybe this could be used to pass rally stage times and similar information.

Tests have been carried out using NVIS on 80 and 40 metres showing the very good reliability of the FSQ system over about 300km paths. Communication being usable over 24 hour periods. Transmissions can be individually addressed to a recipient so only that recipient receives the data. If addressed to all, then everyone receives it. There's a lot more it can do so go back to your Break Ins and read the articles or have a look here: <http://www.qsl.net/zl1bpu/MFSK/FSQweb.htm> for more information.

SOTA Summits On The Air was presented by Warren Harris, ZL2AJ. Warren explained the ongoing work to get all the summits in New Zealand registered with the SOTA organisers in the UK. As I get to drive to a number of summits I thought this would be worth a look.

There's a lot of information that needs to be worked out to get a summit registered and as there are many (over 3000 in the North Island alone) this is going to keep Warren busy for quite some time yet. Have a look at <http://www.sota.org.uk/> to see all about it.

The AMSAT forum updated us on the KiwiSat and the ongoing work there. The biggest hurdle is the cost of launching this. With change of launch possibilities, there have had to be changes made to the system used to carry the satellite and how it is ejected from the launch vehicle.

Where's the 2016 conference? This has not been taken up by a club but negotiations are on going and hopefully there will be an announcement soon.



## PRESIDENT'S PRATTLE

We received the sad news of the death of Dave, ZL2BCA. A number of members attended the funeral on Thursday the 28<sup>th</sup> of May. A very large number of people spoke of the work Dave had done over many years for the community and many organisations as well as the Ham radio groups. He will be sadly missed and our sympathy to Topsy and the family.

There's been quite a lot of activity over the last month with members providing communications for the St Clair ½ Marathon, car club sprint over the Redwood Pass and a mountain bike race in the hills inland from the Weld Pass between the Wairau and Awatere Valleys. Thank you to all who helped there.

Bill and his HF station group have been busy investigating the next stage of the installation at Brayshaw Park. The antenna has been installed on the tower for some time now so the next step is accommodation for the equipment. Bill will give a run down on what the thinking is and hopefully we can have a decision to go ahead and get the accommodation underway.

They have been looking into the equipment needed too so the site can be operated by any club member using internet access so giving HF capabilities to our members who, for various reasons, can no longer operate on HF. For more detail, come along to the June meeting.

A job that has been hanging around for a while now is a clean out of the shed. There's a lot of space being taken up by unused, redundant, worn out or just too old equipment. The date has been set for July 11 so put this on your calendar and come along. Bring a trailer to take home those treasures you must have, or need. We need to be a bit ruthless as a lot of the stuff has been gathering dust and taking up room for a very long time.

It's that time of year for a mid-winter dinner. A change of venue has been suggested so we will probably go to the Speights Ale House. Have heard from a number of people who have been there and they were very happy with the meals. A Sunday at 1:30 was chosen as this will allow for those busy on a Saturday and also for those attending Church in the morning.

With winter officially here now it's time to get those projects completed to bring along to the September meeting for the annual Constructors' Award. It doesn't matter what it is that you have built, just bring it!

Finally, our secretary would very much like to step down from the position after years of excellent service. Won't someone put their hand up and take over for him?

- Grant Simpson, ZL2BK