July 2018 INTERFACE

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

Club Calendar

General Meeting; 12 July. EOC, 19.30hrs

Social Group; 19 July. 12.00hrs - The Vines

Committee Meeting; 26 July. 07.30hrs - EOC

Branch 22 Notices

1. Memorial Contest.......................................7 - 8 July
2. Mid Winter Lunch, Wairau River Wines...28 July
3. Lighthouse & Lightship Weekend.............18 - 19 Aug
4. Constructors Award..................................13 Sept

Editor : Caryl Simpson
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Website:
www.zl2ks.org.nz

VHF Mondays 1930 hrs
146.950MHz, 145.600MHz,
147.225MHz
Net Controller; Ken Hynds ZL2KHZ

VHF - USB Net Wednesdays 1930
144.150MHz

MID WINTER LUNCH

WHERE: Wairau River Wines

DATE: Saturday July 28th

TIME: Midday - but come 11.30am for drinkies & chat.

We will be seated by the fire again like last year.

RSVP: ASAP but July 26th at the latest.

WAIRAU RIVER WINES
FAMILY ESTATE SINCE 1978

This poem comes from a *Telephony* of 1913:

Miss Vivian Ewing was a Postal Telegraph operator in the Alexandria hotel. After months of vicissitudes and troubles caused principally by the patrons of the little station in the marble corridor, Miss Ewing evolved the following prayer to assist her through her hours of toil:

Help me this day, O, Lord, to be
Kind and gentle with my key.
Help me earn my wage this day
And tempt me not to ask more pay;
And if some man who sounds insane
Should move me to hot things profane,
O stay my hand upon the key
And may I not make "H" for "P".

May I refrain to open my door
And kick through it a weary bore
Who brings to me his darling "kid"
To be transformed into a "lid".
And may I gently treat the cranks
Who, after spoiling twenty blanks,
Fold up a lot of callow slush
And sternly bid me, "send it rush".

And when the clock points five to eight,
O, help me then to calmly wait
While some proud dad leans on the booth
And wires baby has a tooth.
In short, pray make me what I ain't,
An understudy of a saint,
That I may hold this job of mine
Till time gives me the "30" sign.

MARLBOROUGH AMATEUR RADIO CLUB GENERAL MEETING EOC
14 June 2018 at 19:30 Hours

Present: Grant Simpson (Chair), Don Laing (Secretary), Ken Hynds (Treasurer), Kevin Berg, Ian Conway, Bill Cousins, John Errington, Antony Winter, Paul Rennie, Gerard van Antwerpen, Bernie Lankshear, David Rothwell, Ron Harris, Helen Harris

Apologies: Gavin Piercy, Nelson Bateman, Ken Menzies

Visitors – Sir Roger Keen

Correspondence: **Inward –** NZART May/June Break-In   **Outward –** None

Finance: Accounts presented. Surplus balance of Lottery Grant for helicopter hire refunded as required

Matters Arising:
MDC Submission – Await MDC which could be a while.   **DL**

REPORTS:
Repeater:
The Ned – Site visit to replace repaired repeater still to be arranged. Weather dependant.   **DR**
Ward – Repeater removed and stored at Grant's place. Ken M & Stuart working on interface.   **KM/SW**
Kaikoura – Shed is locked. Grant has been in contact with Whale-Watch. Access key is being arranged for when Grant is next in area.   **GS**
Brayshaw Park – Grant has prepare instructions which will distribute to key holders.   **GS**
Issue reported with audio feedback. Individual PC microphone settings need to be adjusted to rectify.

SAR / AREC: **PR**
Discussions held at NZART conference. Major reorganisation in progress with meetings continuing.
AREC National conference is at Blenheim Centre starting Thursday 21 June. Truck will be set up as well as other displays to which all are welcome.

Ian and Bill setting up for the mid May Marlborough Dog Trials and National trials that were held later in the month.

NZART Conference.
Grant reported on the 2018 proceedings.
Remits voted as expected
Interesting forums especially regarding DRM radio systems.
2019 conference will be at New Plymouth, 2020 at Shanty Town, West Coast

General Business:
➢ Picton Coastguard boat tour took place 26 May
➢ Shed - David R requested shed if available.
   Agreed, as not required by Branch
➢ Two persons (father & son) have been heard trying to communicate unsuccessfully via Ned repeater. To be monitored and identified.

Future Events
➢ Memorial contest 7/8 July. Participation urged
➢ Lighthouse contest at Cape Campbell 18/19 August.
   Names to Rob Carter or Ian Conway so accommodation can be booked.
➢ Constructors Award September

Meeting closed 20:16

© Linda Laing

Presentation by Don Jamieson postponed due to illness.
However Anthony Winter showed some interesting signal test gear that he had developed & built.

Ed's Note: Many thanks to Anthony for doing a write-up on the above-mentioned RF sniffer for Interface (see P4).
Thanks also to Gerard Van Antwerpen for taking photos on the night and sending them on to me.

MARLBOUROUGH AMATEUR RADIO CLUB COMMITTEE MEETING
28 June 2018 at 19:30 Hours

Present: Ken Menzies (Chair), Don Laing, Ken Hynds, David Rothwell, Stuart Watchman (by conference call)
Apologies: Grant Simpson, Paul Rennie

David Rothwell advised that he will be away from 15/07 ~ 01/09
Stuart Watchman advised that he will be away from 05 ~ 20/07

Correspondence both Inward and Outward: None

Finance:
Bank Accounts presented
Most subs have been paid, only one outstanding.

Matters Arising:
MDC Submission – Await MDC decision.   **DL**

Repeater Report:
All repeaters except Ward are operational.
Ned – Replacement repeater with Ron H. Roof paint & rust kill available.   **DR**
Kaikoura – Access key. To follow up.   **GS**
Weld Cone unit needed to use as template for control unit. Await Grant's return.   **SW**
Weld Cone – Grant S's place for refurbishment   **GS**
Follow up with Ian C property authorisation and for local site operational testing.

SAR Report:
National SAR conference went very well.

General Business:
Chorus Repeater Sites (MARC digipeater at Jamies Knob) –
  ➢ NZART is nationally coordinating with Chorus. National list being finalised.
  ➢ Will have to eventually pay Chorus or move.
  ➢ Follow up with Paul R contact with Marlborough Lines to ascertain possibility of transferring into their
    adjacent facility.   **PR**

David suggested that these meetings be carried out via Skype or similar so members do not need to travel and could participate from wherever they were.

Upcoming Events.

General Meeting – To confirm if Donald Jamieson will give presentation at July meeting 12/07/18   **DL**

Meeting Closed : 20:49

This newsletter was done while we were house sitting in Brisbane. We visited the Maleny Bird Sanctuary.

A SIMPLE RF WATTMETER
By Anthony Winter ZL1VBX, 21 June 2018

Introduction
Here are some details of the RF wattmeter I brought to the last meeting. It's based on a circuit from QST magazine, January 2001. That circuit used an AD8307 logarithmic amplifier (which has a 92dB range) for power measuring and an analogue meter for display; meters are a bit hard to find these days, so I made a few changes.

The first is to use an LCD. Apart from being easier to read, using this means that you can display power in dBm, watts and volts at the same time. However, to drive an LCD needs a computer.

Fortunately, Arduino Nano clones are available for about $3. They have a 10-bit A/D converter (ADC) so they can read the 8307 output, and they have lots of digital I/O for reading inputs and controlling the LCD. Programming software is free, and you don't even need a special programmer.

I didn't want to lose the analogue immediacy of a meter, so instead I added a white LED, driven by a voltage to current converter from the 8307 output. This can show the difference between (for example) -66dBm and -68dBm, which I think is pretty good.

Another useful feature is a headphone output. Very useful for interference detection.

The QST article also described some accessories – a 40dB power tap for measure transmitter power, a current clamp for measuring RF currents, and a sniffer probe.

Build cost is low. The AD8307 is a couple of dollars, the Nano about three dollars, and the LCD about six. The most expensive part is the box. And this does need to be metal!

How it works
The AD8307 is a logarithmic amplifier, with an input range of -75dBm to +17dBm, linear to 1dB from 0 – 500MHz. The output is 25mV per dB. The output (~0.3V to ~2.6V) goes to an analogue input on the Nano, which is 10bits resolution; the range is therefore 0-1023.

The program samples the ADC, converts the bits to voltage, and turns that into dBm, watts, volts (p-p) or current, as appropriate, then displays that on the LCD.

It also reads the centre 3-way switch, which tells the unit what it's measuring. Centre position is watts, up is watts with the 40dB power tap, and down is current, with the current clamp.

The LCD is two lines of 16 characters, and is serially driven by IIC, so there are only four connections to it – power, ground, clock and data.

Construction
The AD8307 is an 8-pin SOIC, although only six pins need connecting. I put it on its back on a bit of unetched PCB and wired directly to it. It does need a screen – I used a bit of tin can soldered to the PCB.

The power supply is internally 5V. 8 to 12V from either a bench supply or – for portable use – an old quadcopter battery is regulated down.

I must get round to doing the labels for the box!

Operation
Switch on (top right switch), set the mode (middle switch) and observe. The internal noise with nothing connected is about -76dBm.

The power tap (left in photo) is rated for 100W (+50dBm) and seems to agree with my rather old power meter.

The current clamp (centre in photo) is useful for measuring the unbalanced current in feeder cables, and for common-mode interference tests.

The sniffer probe (right in photo) can trace power levels along bits of circuit, and check RF leaking out of faulty connectors.

And you can connect a telescopic antenna and listen to any nearby AM transmissions or interference on the headphones. Or use it as a field strength meter.

Top and bottom photos © Anthony Winter
Middle photo © Gerard Van Antwerpen