



# ZL2VH Newsletter – November 2015

## President's Report

### JOTA

Thanks to everybody from Br63 and Br18 that helped out with the JOTA station at Brookfield. Special thanks to Olly ZL2OLY and Marie Smolnicki ZL2 JOTA, ZL2THE for organizing the event.

### Mesh Network Update

Development is continuing at pace in the Wellington Mesh Network.

An informal steering group meeting was held last week, consisting of representatives from the Wellington region NZART branches. James ZL2ET br42, John ZL2HD br74, Ted ZL2TB br 18, Mike ZL1AXG br50, Richard ZL2FY br 69 and myself met to discuss the development priorities and standards.

The mesh network test installation at Climie is to be extended to include a link East to Stonehenge Wairarapa, to allow an remote hf station and radio astronomy receivers to the mesh. Once these tests have been completed, the gear will be removed pending a formal proposal to be put to the club for a permanent installation. One of the great things coming out of this work is the cooperation of the clubs in the area. It makes a nice change.

### Jock White Field Day / Bike the Trail

We have had a tentative approach to do AREC for the Bike the Trail 2016 on the 28<sup>th</sup> of Feb. This again coincides with Jock White Field Day run over the same weekend.

Last year we ended up doing neither. This time I'd like to plan to do the field day if possible we are not required for Bike the Trail, this needs support from members willing step up. Nothing will happen without that.

### Climie Working Bee – South Hut Waterproofing

In a few weeks there will be a working bee to seal / repaint the South Hut. I'll put out a email in due course. Be prepared for a call-up!.

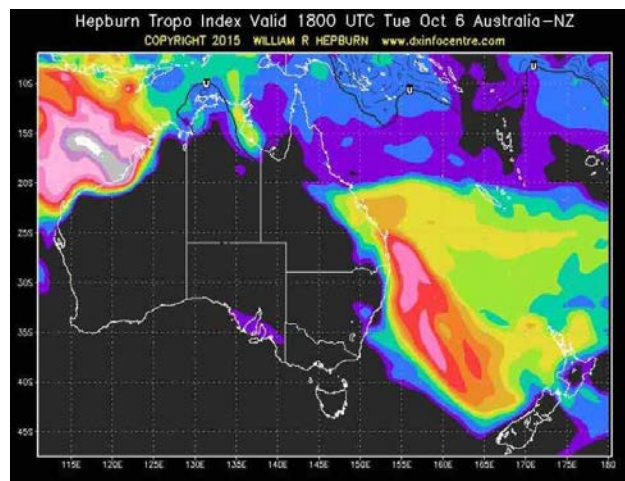
We are always looking for articles to fill the pages of newsletter. Please forward anything no matter how large or small to the editor - Eric ZL2SET – [ericwilby@gmail.com](mailto:ericwilby@gmail.com).

73's and good DX  
Simon ZL2BRG  
President.

## Branch 63 Repeater Update – October 2015

In October there was a massive tropo opening to VK2/4 on 2 / 70 and 23cm. I (Simon) was lucky enough to be portable at Climie on Oct 7<sup>th</sup> and managed to work a dozen VK's on 2 & 70, including a potential VK4 and NZ record qso with vk4rex on 70cm.

The Image shows the Hepburn chart for that day



## Status Updates

### WebSDR

Construction still under way. Links:- websdr home page [www.websdr.org](http://www.websdr.org) Southampton University Wireless Society's setup [www.websdr.suws.org.uk](http://www.websdr.suws.org.uk).

<b>3cm Beacon</b>	On Air
<b>1292 23cm</b>	On Air
<b>860 Dstar</b>	On Air. CCS7 is now enabled on the ZL2VH Gateway
<b>5425 DStar</b>	On Air
<b>730 2m FM Repeater</b>	On Air
<b>53.950 6m FM Repeater</b>	On Air

A new set of brackets to support the new antenna is being made by Phil ZL2HF. They are off to be galvanized / painted.

In addition to Simon's experiences with DX, we have received the following e-mail from Chris, VK2 ACD.....

*Hi*

*Thought this might interested your readers*

*Last night Tuesday 6 Oct at 1022 hrs UTC, made a contact with Ken, ZL2KJ*

*who was mobile, via your Mt.Climie 2m repeater on 147.300*

*Using a 14 element M2 dual-polarised yagi with 100W.*

*Received the repeater at S3 to 4 from my location near Evans Head, New South Wales*

*Grid square QG60QU.*

*Regards*

*Chris Meagher*

*VK2ACD*

*hi again*

*I checked the distance to Mt.Climie 2376.7 km*

*Chris*

*VK2ACD*

### **From John ZL2TWS**

Please put this in the next newsletter recommending everyone watch the video. What we can do to advertise the hobby if only anyone would move their arse.

[https://youtu.be/8x6x\\_6mDVIQ](https://youtu.be/8x6x_6mDVIQ)

At least someone out there is doing something. USA is very much in the lead at 4% growth / year. This was confirmed by the people we spoke to at Dayton.

Also this one for a laugh.

<https://youtu.be/on6KQX-FmCk>

73, John

## Editorial

Apologies for the unavoidable, late publication of the newsletter this month. This issue is a bit short and sweet and, as Simon said, we are always looking for *any* content that is vaguely to do with Amateur Radio – serious, humourous, personal experiences, photos or whatever.

As John mentioned earlier, the success of the Branch is in the hands of the members, so we all need to “move our arses”. I’m sure that we *all* have something to contribute to the newsletter, no matter how mundane you think it might be. Let’s have it please.

To fill up a bit of space I have attached a copy of the Radio Amateurs’ Exam that I took back in 1971. After 3 hours of sweating buckets I managed to get through, and got my ‘B’ licence (VHF and above). It wasn’t until 1975 that I plucked up the courage to take the Morse test and gain my ‘A’ (full) licence – as it was in the U.K. in those days. (I *had* to anyway, as I was on my way to ZD8 land for over 2 years and needed a full licence there). See how you get on with the paper..... (Ed.)

# CITY AND GUILDS OF LONDON INSTITUTE

PAPER NUMBER <b>055-1-01/02</b>	EXAMINATION <b>RADIO AMATEURS' EXAMINATION</b>	<b>Monday 6 December 1971</b>
SERIES <b>DECEMBER 1971</b>	PAPER	<b>6.30 to 9.30 pm 3 hours</b>
YOU SHOULD HAVE THE FOLLOWING FOR THIS EXAMINATION  <b>one answer book 'Castle's Logs'</b>		

This examination is divided into two parts; failure in either part will carry with it failure in the examination as a whole.

The maximum mark for each question is shown.

Answer **EIGHT** of the following ten questions as follows: **BOTH** questions in **PART I** (which are compulsory) and **SIX** questions in **PART II**.

## PART I – Answer **BOTH** questions in this Part

- (a) What is the meaning of the expression 'wireless telegraphy' as used in the Amateur (Sound) Licence?

(b) What are the standards laid down in the Licence which must be observed by an amateur station for wireless telegraphy as regards non-interference, by spurious emission or poor frequency stabilisation, with any other wireless telegraphy?

(15 marks)
- (a) Draw the circuit diagram of the power amplifier stage of an amateur transmitter using a  $\pi$ -network output filter.

(b) Explain how this circuit can be adjusted to match the output of the transmitter to a wide range of load impedances.

(c) Why is the  $\pi$  network effective in minimising the radiation of harmonics?

(15 marks)

## PART II – Answer **SIX** questions in this Part

- (a) In radio propagation what is meant by (i) maximum usable frequency (m.u.f.), and (ii) critical frequency?

(b) What factors affect the frequencies in (a) above?

(10 marks)
- (a) What is an alternating current of sinusoidal waveform?

(b) What is meant by (i) the peak voltage value, and (ii) the r.m.s. voltage value, of an alternating supply?

(c) If an alternating voltage of 10 V r.m.s. at a frequency of 159 kHz is applied across a capacitor of 0.01  $\mu$ F what current would flow in the circuit?

(10 marks)
- (a) When an e.m.f. is applied across a conductor an electric current flows. What is understood by the term 'electric current'?

(b) Why are some materials known as insulators and some as conductors and what is the difference between them?

(c) How is the current flowing in a circuit related to the resistance of the circuit and to the voltage applied to it?

(10 marks)

See next page

6. (a) With the aid of waveform diagrams describe the action of the frequency changer stage of a superheterodyne receiver for the high frequency bands.  
(b) Describe briefly how the tuning of the signal and oscillator circuits is kept in step over the tuning range of the receiver, using a single control. (10 marks)
7. (a) With the aid of diagrams describe the construction of a power pack suitable for providing  
6 A at 6.3 V for valve heaters  
200 mA at 500 V for power amplifier high tension supply  
20 mA at 150 V stabilised for oscillator high tension supply —100 V grid bias supply  
from a 250 V, 50 Hz a.c. source of supply.  
(b) With the aid of waveform diagrams describe how rectification is achieved. (10 marks)
8. (a) Describe how a cathode-ray oscilloscope can be used for the examination of electric voltage waveforms.  
(b) With the aid of diagrams show how the oscilloscope can be used to monitor the waveform of the modulated radio frequency output from a sound transmitter. (10 marks)
9. (a) Describe how a quartz crystal can be used to control the frequency of an oscillator.  
(b) Draw the circuit diagram of a typical crystal oscillator for use in a high frequency transmitter and describe its action. (10 marks)
10. What is meant by EACH of the following terms when applied to radio frequency transmission lines?  
(a) Open wire feeder.  
(b) Coaxial feeder.  
(c) Velocity factor.  
(d) Characteristic impedance.  
(e) Standing wave ratio. (10 marks)