

**The Official Newsletter of the
Auckland VHF Group Inc.
Spectrum**



The New Zealand Christmas Tree
Time to forget about work and start relaxing

Introducing the new President—see page 4

The new club officers—see page 5

VHF Field Day Report—see page 6



Auckland VHF Group Inc.

Branch 66 NZART

PO Box 10138, Dominion Rd, Auckland 1446

Clubrooms: 30 Hazel Ave, Mt Roskill

Office	Name	Call sign	Home	Work / Mobile	E-mail
President	Laurie Matthews	ZL1ICU	634 5130	0274 817 463	perma@xtra.co.nz
Vice President	Brendon Reid	ZL1XXX			brendon@aa.net.nz
Secretary	Margaret Dingley	ZL1AYV	828 9394		marday2nz@gmail.com
Treasurer	George Raffles	ZL1TUX	626 6944	021 735 361	graffles@xtra.co.nz
Committee	Matthew King	ZL1YOT			mattking77@gmail.com
	Peter Loveridge	ZL1UKG	09-427 6362		peterlov@xtra.co.nz
	Dave Dingley	ZL1TIA	828 9394		mardayak@gmail.com
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Deputy Section	George Raffles	ZL1TUX	626 6944	021 735 361	graffles@xtra.co.nz
ZL1BQ Trustee	Vaughan Henderson	ZL1VH	418 1071	021 844 804	zl1vh1@gmail.com
Repeater Trustee	Vaughan Henderson	ZL1VH	418 1071	021 844 804	zl1vh1@gmail.com
Klondyke Managers	ZL1VH / ZL1BK				
690 Manager	Dennis Seymour	ZL1UET	278 0381		
850/670 Manager	Vaughan Henderson	ZL1VH	418 1071	021 844 804	zl1vh1@gmail.com
ATV/Beacons					
Spectrum Editor	Peter Loveridge	ZL1UKG	09-4276362		peterlov@xtra.co.nz
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Club Web Page:		http://www.qsl.net/zl1bq			
ATV Interest Group:					
ZL1VHD Dstar gateway administrator; Laurie ZL1ICU			634 5130	0274 817463	perma@xtra.co.nz
ZL1VHD Dstar gateway registration URL :		http://zl1vhd.dstar.org.nz			

Club News and Net:

The combined Auckland VHF Group and Auckland Regional Branch News and Net are held on 146.625 MHz and 439.875 MHz at 8.15 pm each Sunday or after the ZL6A National Broadcast on the last Sunday of the month.

Club meetings are held at the Clubrooms at Hazel Avenue, on the second Monday of each month at 7.30 pm. For other details, listen to the News and Net each Sunday evening.

SPECTRUM is the official journal of the Auckland VHF Group Inc. Opinions expressed are those of the authors and do not necessarily reflect club points of view. The closing date for SPECTRUM articles is by the 1st of each month. Articles to be submitted to the editor Peter ZL1UKG
peterlov@xtra.co.nz

Auckland VHF Group (Inc) Branch 66

General Meeting Notice

Monday 11th December 2017 7.30pm,

At the Hazel Avenue Club Rooms
(Located on left at the end of Hazel Avenue)

The Evenings Subject:

- End of Year Social

Last Meeting for the year will be Monday 11th December 7.30 pm at the clubrooms

It is our Christmas get together. Bring along the whole family and join in.
Party and Christmas nibbles and finger food will be served along with juice, coffee, tea, etc.
If you have some delicious favourite food you would like us to try, bring it along as a plate.
Marlene will be baking her famous chocolate log which is something to die for.

Other drinks BYO.

RSVP if you can for catering purposes to perma@xtra.co.nz or phone 6345130

EVERYBODY WELCOME

VHF DX Weekend:

All bands 6 m and up. Saturday 03 and Sunday 04 February 2018.
Operating periods are Saturday 5 pm to 11 pm, and Sunday 7 am to 1 pm, NZ local time.

The contest rules are available on the NZART website:
<http://www.nzart.org.nz/activities/contest-rules/rules-vhf-and-above/>

All contest logs should be sent, to arrive within two weeks, to:

Coming Events:

- 2018 begins with a BBQ at the Clubrooms on Monday 22 January. A BBQ is provided but you must bring your choice of meat to cook.
- Australian Ross Hull VHF-UHF Field Day, 13-14 January 2018

The President's Column

Presidents Report

Hi, My name is Laurie ZL1ICU.

Most of you probably know me or have heard me on air. Here I am writing a Presidents Report and thinking "Just how did I get here?"

My first encounter with electricity began when I climbed up on a table as a toddler & poked my finger into an empty light socket. From that first beginning started a lifetime of working with Electronics, Radio, Television etc. at which I am still working.



I was a Junior Member of NZART in my Primary School days. My association with Auckland VHF Group Inc is more recent. I have been a member for about 17 years. It came about when I saw a Test Pattern from the groups ATV transmissions while servicing a customer's TV. I found out whose transmission it was, went to a meeting and here I still am. I have successfully run my own Electronics Company for almost 50 years.

Being frustrated with the fact that there were no offers for President, Secretary or Treasurer forthcoming at the AGM prompted me to accept the position of President. What followed was the filling of all other vacant positions.

It is important that the Auckland VHF Group Inc has a stable committee to deal with the running of the club. A good Licence to Occupy has been arranged on the land where the clubroom is located. A new driveway & car park is promised in the New Year.

I wish to thank the members who have put their names forward for committee. I am always available to discuss any suggestions or problems you the members may have. I wish all members & their families the best for the coming holiday season. I hope to be able to speak with you all in person at the club's Christmas Gathering on Monday 11th December 2017 at the clubrooms from 7.30pm.

Laurie Mathews ZL1ICU

2017 AGM Elections

Once the position of President had an acceptance all of the remaining positions were filled without long delays. The new faces running the club were persuaded to gather together for a moment to record the event.



See page two of Spectrum to put names to the Call Signs.

This photo was taken using a phone and doesn't warrant viewing at any larger scale. Individual pixels are very small in a phone although there are a lot of them. In this case they operate at a fixed sensitivity of ISO = 160 to prevent even more noise showing up in the photo. This requires a relatively long exposure in the indifferent light of the clubrooms.

There was no General Business called for following the AGM. The approval for painting will need to be addressed next year.

925 MHz Transverters

Your VHF Group is planning on producing a small number of transverters for the 925 MHz amateur band (33 cm) based on a design by Greg ZL1GSG. The transverter will have a 2m I.F. and produce approximately 2 watts of output. Due to the state-of-the art design and construction using small SMD components, the transverters will only be offered as completely built up units.

At this time the price is expected to be about \$300 each. To gauge the demand for these, please let Vaughan ZL1VH (contact details on page 2) know as soon as possible. An initial run of four transverters is planned.



ZL1BQ camping at the luxurious address of RF73HN

VHF Field Day 2017

The weather was kind but the propagation was mostly average

The Auckland VHF Group was represented by Vaughan ZL1VH and Peter ZL1UKG with assistance from Ross ZL1EME. Ross found the forestry access road at the west end of Moir Hill Road and explored to see if there were level areas without trees all around. The height was about 300 m at a high level spot where honey was going to be more profitable than timber with Manuka nursery plantings in the area around us.

Leaving Auckland around 3:30 pm did not see us set up for first period. 2 m was running by second period with 70 cm soon after. Equipment that is only turned on once a year misbehaved and the 70 cm TS 811 with linear amp had a TX relay chattering indicating that a timing capacitor had gone open and would make the received speech sound unintelligible. It was swapped for a TS 2000 does everything radio. By Sunday we realised via other bands that there were stations that could hear us but we did not respond to them. A high noise floor was masking weak signals (note! Repair these before next year) The same went for a 70 cm antenna where a feed to the driven element had broken after the vibration of dragging it around the back country for 20 years had got the better of it. At least we had a gas powered soldering iron.

6 m was a late starter by 9 pm after cooking dinner. Saturday night was quiet. So was Sunday morning until about 10 am. Suddenly on 6 m south Canterbury was as strong as the locals followed by four from Dunedin but nothing in between over a period of 20 minutes. This was fol-

lowed by three VK4 stations all around Brisbane over the next 20 minutes. VK4RSC beacon was strength 5 for some time after the QSOs stopped but no further contacts were made. Even the local beacon ZL2WHO had disappeared by 12 pm. 2 m carried on keeping Vaughan busy with relief from Ross. It was likely that tropospheric ducting gave us the long paths. Another possibility is that the ionisation at the top of columns of thunder cloud could refract our signals into a small distant area bypassing everything in between.

Things became quiet after 12:30 pm so packing up could begin. A good time of 1 hour 30 to pack and load saw us ready to leave by 2:30 pm. Our off grid location had passing trampers, runners, cyclists, a horse & rider and cross country motorbike. Even the locals could not advise us as to who owned the higher blocks of land around us. We were intrigued by one who understood tropo ducting because he worked with fibre optics. We were north of the Moir Hill ridge and working south over the higher ridge was a penalty which made contacts difficult. Unfortunately our site of the last three years is now a building site. The search will be on again for a new site for next year. Watch for results in the February 2018 Spectrum.

Peter Loveridge

04 December 2017

Ross ZL1EME with his newly assembled 10 GHz Transverter
No one to talk to





**Amateur Radio Emergency Communication.
Volunteers in radio communications.
Using our resources to help the community.**

INFORMATION

The Auckland VHF Group has an AREC section that works closely with Auckland Council Emergency Management. They provide advice, resources and manpower to assist in times of need.

The AREC section is headed by Section Leader Laurie Mathews ZL1ICU.

From time to time the VHF Group has training sessions and exercises. Members also assist with sports events, parades and other community activities. For further information about AREC please see the NZART web site: <http://www.nzart.org.nz/arec/>

JOIN BRANCH 66 AREC

All members of the Auckland VHF Group are encouraged to join the AREC section. Your contribution, large or small is appreciated by all involved.

For further information about joining branch 66 AREC contact the Section Leader or his Deputy:

Section Leader; Laurie Mathews ZL1ICU 634 5130 0274 817 463 perma@xtra.co.nz

Deputy Section; George Raffles ZL1TUX 626 6944 021 735 361 zl1tux@xtra.co.nz



AUCKLAND VHF GROUP (INC)

**SUPPORT THE EFFORTS OF THE VHF GROUP THROUGH YOUR
SUBSCRIPTION**

SUBSCRIPTIONS FOR 2018

THE SUBS GO TOWARDS;

- Maintenance and on-going improvements to beacons, repeaters and linking systems for the national system, including the Klondyke repeater site.
- Provides on-time and free access to spectrum magazine as soon as it is available.
- Provides facilities for good speakers and lecturers at our general meetings.
- Discounted access to our trading table goodies.
- Access to test equipment and technical help when needed.

FULL MEMBERSHIP \$45.00

ASSOCIATE MEMBERSHIP \$40.00

FAMILY MEMBERSHIP ADDITIONAL \$10:00

SEE ATTACHED MEMBERSHIP RENEWAL FORM (next page)



REMEMBER TO KEEP US INFORMED OF YOUR INTERNET ADDRESS!

OTHERWISE WE CANNOT SEND YOU SPECTRUM!

NAME	Mr/Mrs/Miss/Ms	Christian or given name	Surname
Address			
		Phone: (home)	
		Phone: (work)	
		Phone (Cell)	
		Email	
Occupation:		Callsign	
NZART Member		Branch assigned	
AREC Member		Branch assigned	
Category			To pay
Membership	Full	\$45:00	\$
New/Renewal/Change	Associate	\$40:00	\$
Receipt #	Family Add	\$10:00	\$
Donations	Auckland ATV		\$
	Auckland/Klondyke		\$
	Brynderwyn		\$
	Data/D-Star		\$
	IRLP		\$
	Beacon/Repeater/Links/ATV Licences		\$
	Other		\$
		Total	\$
Payment			
Circle one -->	Cash	Cheque	Internet deposit
Invoice/Statement re-quired	Please Advise Treasurer		
Internet	To account ASB 12-3020-0473626-00. Account name is: Auckland VHF Group Inc. Include your Name/Callsign for us to track. Note: this form needs to be returned to update records.		
Post	The Treasurer, Auckland VHF Group Inc., PO Box 10138, Dominion Road, Auckland 1446.		
In Person	Bring this form and payment to the next club meeting, 2 nd Monday of the month or to the Committee meeting last Monday of the month.		

gratefully acknowledges the sponsorship of Branch 66 Beacons, Repeaters and Fixed Links license fees and the Group's repeater operations by the following radio amateurs and NZART Branches for 2018

The Auckland VHF Group, Branch 66, would like to thank all those who came forward to sponsor the licence fee for our Beacons, Repeaters or Fixed Links for the year 2018 or donate towards the Group's repeater Operations.

TRADING TABLE

Currently our Trading Table is only open on meeting nights. We will be at the Western Suburbs sale on Saturday 4 November, so come and have a look.

We have heaps of parts from dismantled commercial analog TV gear – transmitters, filters, circulators, patch panels, power supplies, cabinets. Too much to list individually, so come along to the clubrooms and have a look.

Back in Stock—

SO239 UHF Adaptor:

Just what you need to make up a mobile antenna. SO239 socket and mounting nut. The tube on the side is a screw-in fit for RG58 coax cable. Just strip the outer sheath off and allow about 6 to 7mm of centre conductor, screw the RG58 into the side of the adaptor and solder the center conductor to the centre pin of the fitting. A small plastic cap seals off the back of the adaptor (remove it to do the soldering).



Our price: \$3.00 each

And there's more....



Two only coaxial transfer relays as per photo. N-Type connectors and 12V operation, removed from equipment but in excellent working condition.

\$50.00 each

23cm LOOP YAGI KIT FOR SALE

The last one! Model 2325LYK kit makes a high gain 23cm Loop Yagi. The price for this kit is \$120.00.

The kit consists of all the parts to make up a 25 element loop Yagi including the element mounting hardware and assembly in instructions. What is not supplied with the kit is the boom. This can be either a 25mm diameter aluminium tube, or a 25mm square section (square or "U" section).



When built up, the 23cm Loop Yagi has the following performance:

Frequency Range:	1.25-1.30 GHz
Number of Elements:	25
Boom Length:	1.83m (72")
Boom diameter:	25mm (round or square)
Gain:	18 dBi
-3dB Beamwidth (E plane):	30°
F/B Ratio:	> 20 dB
Maximum power:	550 Watts

NEW – 4 Ohm Speaker

We have a good quantity of small 4 Ohm speakers complete with a black plastic bezel. The speakers are 50mm square and 33mm deep. Only \$2.00 each.



Radio Frequency Transistors

ATF55143	Low noise E-PHEMT 0.6dB noise figure. Low noise amp for frequencies between 450MHz and 6GHz. SMD package SOT343 (4 lead). [S.case]	\$1.00 each
MGF1302	Low noise GaAs FET $N_f = 1.4\text{dB @ } 4\text{GHz}$, $4\text{dB @ } 12\text{GHz}$. [S.case]	\$5.00 each
BF199	NS 25V 25mA, 500mW $f_t = 550\text{MHz}$ TO92[S.4.14]	\$1.00 for 10
BF494	NS 20V 30mA Low noise mix-osc/IF amp TO-92 [S.4.15]	\$1.50 for 10
BFR91	NS RF Amp. 5GHz 1.9dB n_f @ 500MHz [S.case]	\$2.00 each
BFY90	NS 30V 50mA 2.5dB n_f @ 200MHz TO72 VHF/UHF[S.case]	\$1.50 each
MFE121	Dual gate N-MOSFET 20V 5mA VHF Amp BF352 equiv. [S.case]	\$0.50
MPS5179	NS TO92 12V 50mA 200mW f_t 2000MHz N_f 5.0dB [S.5.13] RF Transistor. Use in UHF/VHF amplifiers with collector currents in the 100 μA to 30 mA range, and in low frequency drift, high output UHF oscillators.	\$0.50 each
BFG67	NS 8GHz 50mA rf amp/preamp SOT143B package [S.case]	\$1.50 each
MPS5172	NS 25V 100mA f_t 120MHz [S.7.5]	\$0.10 each
MPS6507	NS, VHF Mixer, 20V, 100mA, f_t 700MHz [S.5.8]	\$0.20 each
C1-12	NS RF Pwr 400 – 500 MHz 1W 12.5V [S.Case]	\$1.00 each
C3-12	NS RF Pwr 400 – 500 MHz 4W 12.5V [S.Case]	\$2.00 each
MRF237	NS RF Pwr. VHF 4.0W 12V TO39 [S.5.13]	\$3.00 each
MRF449	NS RF Pwr. 2-30MHz 30W 12.5V stud mount [S.Case]	\$10.00 each
MRF559	NS RF Pwr. 806-960MHz 0.5W 12.5V [S.5.13]	\$0.50 each
MRF628	NS RF Pwr 400 – 500 MHz 1W 12.5V [S.Case]	\$2.00 each
MRF904	NS RF Small signal amp. f_t 4GHz 15V TO206 [S.5.13]	\$3.00 each
SD1144	NS RF Pwr 400–550 MHz 2W 12.5V stud mount [S.Case]	\$3.00 each
2N5945	NS RF Pwr 400–700 MHz 2W 12.5V stud mount. [S.Case]	\$3.00 each
2N5946	NS RF Pwr 400–550 MHz 10W 12.5V stud mount [S.Case]	\$4.00 each
2SC908	NS TO39 RF Amp 1W @ 500MHz 13.6V [S.5.13] Designed as driver and RF power amplifier. 0.5 to 0.8W output at UHF land mobile band. Gain 15dB ($V_{ce}=6.0\text{V}$, $I_c=5\text{mA}$, $f_t=2000\text{MHz}$)	\$1.00 each
3SK45	Packaged as ECG221, dual-gate N-channel MOSFET for vhf amp and mixer applications. [S.6.16]	\$0.75 each
3SK73GR	Dual-Gate MOSFET N-channel 30V 7mA [S.6.7]	\$1.50 each
3SK74L	Dual-Gate MOSFET N-Channel 20V 25mA(max) [S.case]	\$1.00 each
3SK192GR	Dual-Gate MOSFET 15V 30mA(max) [S.7.13]	\$1.00 each
2SC5488	NS 30V 70mA low noise rf pre-amp [S.6.4]	\$0.10 each
40673	Dual-gate N-Mosfet – See MFE121 [S.case]	\$0.50 each