SPECTRUM **August 2016 Vol. 53 No. 8**

The Official Newsletter of the

Auckland VHF Group Inc.

Spectrum

Celebrating 60 years : 1956 — 2016

The celebration on Saturday 16 July at Ryder's Cinema

See page 7

Auckland VHF Group Inc.
Branch 66 NZART

PO Box 10138, Dominion Rd, Auckland 1446
Clubrooms: 30 Hazel Ave, Mt Roskill

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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@ihug.co.nz

From the President (of NZART)

President Dave and members & friends of the Auckland VHF group

Please accept my apologies for not joining you on this very significant milestone for the 66th branch of NZART. I wanted to come up from the Mainland to join in on the fun but unfortunately it's the school holidays and at my work place it's up to us guys with grown up kids to mind the shop while everyone else is off on leave.

I was a member of the group from 1982 to 1984 as a young spotty ZL1UBS while working for the old NZPO as a trainee technician in Henderson. With the encouragement of then President Don Beale and secretary Vaughan Henderson I joined the committee in 1983. I was only 18 then and felt quite honoured.

It was a quieter period for the group then, the synthesiser kitset project was just completed and the infamous bulk crystal order was all but over and the mammoth Klondyke project was yet to start. I had left for Christchurch and then Dunedin by then. I say infamous as I had been told that the crystal order had been a mammoth task: to allow everyone to change their crystal controlled two metre sets from the old channel A, B, C etc. system to the one we have now. A Gazillion crystals had been purchased and I believe it took a wee while to get all the orders sorted. I soon learned that you did not mention or ask about the crystal project: it could make seasoned members lose consciousness and of course this is many years before I graduated from medical school so I wasn't much help then.

President Dave Dingley then had an electronics supply shop in Avondale. I would often drop in to Dave's shop and occasionally buy something but I always received plenty of advice and encouragement.

The late Irving Spackman ZL1MO was a VHF group regular, who then was very experienced and I was in awe of him but he always friendly and helpful. I recall him giving an excellent talk on the early inter-ferometer tests done at Ardmore as part of satellite research that many in the VHF group were involved with in the late 1950s.

So I am sure there must be many others gathered today that have many happy VHF group memories like myself. I would like to wish you all the best on this celebration of sixty years of a great ZL amateur institution and wish the group all the best for the future.

73s

Stuart ZL2TW

Auckland VHF Group (Inc) Branch 66

MEETING NOTICE

08th Augst 2016 from 7:30pm, Hazel Avenue Clubrooms

(Located on left at the end of Hazel Avenue)

The Evenings Subject:

"The Klondyke Project"

In keeping with the VHF GROUP 60th anniversary theme, vintage video documenting the construction of Klondike will be shown plus other activities of the time.

Another meeting not to be missed!

EVERYBODY WELCOME

Auckland VHF Group Inc
Meet the Neighbours Day
Saturday afternoon - 16th July 2016

On Saturday 16th July 2016 Auckland VHF Group held a Meet the Neighbours Afternoon Tea at their clubrooms at Arthur Faulkner Reserve. It was a time for the local people who reside around the park and clubrooms to come along to see what takes place inside the clubhouse and get to meet the club members.

It was also the day of the clubs 60th Anniversary. Invitations had gone out to all the neighbouring homes, foundation members, club members and Local Puketepapa Board Members.

With the help of ZL1TIA, ZL1ICU, ZL1AYV, ZL1MYL and ZL1TUX the clubroom layout was changed from a meeting room to informal entertainment setting. Tables with table clothes and flowers were set up for serving the food. Display boards of the clubs activities were set up. ZL1TUX set up a lap top computer which showed a continuous montage of DVD footage of club activities. Chairs were set in groups so people could sit and chat. A delicious afternoon tea of Savouries, Assorted Sandwiches, Asparagus rolls, Cakes & slices, Chocolate éclairs, Victoria Sponge Cake and Tea & Coffee was served for the enjoyment of all present.

A special table was set up for the children with individual packets of fresh popcorn, pink lemonade & old fashioned lemonade served in quarter pint vintage cream bottles with straws (just like we had our school milk served to us in the bad old days before the schools had refrigeration), Gingerbread Men, Giant Marshmellows, Mini Sausage Rolls, Mini Club Sandwiches & Victoria Sponge just like Granny made. Each child was given a goodie bag with a small toy (donated by Kids First Charity) and an Activity Book donated by Auckland Civil Defence. When one kind hearted 5 year old boy was given his goodie bag he became sad as his 3year old brother had been left at home with his mother. He was delighted to find a Police Car in his goodie bag, but sad his little brother was going to miss out. It was a delight to see a sad face turn into the biggest smile when ZL1MYL gave his father a goodie bag for his little brother containing a Fire Chief Car. They left the club carrying a plate with Victoria Sponge, Gingerbread Men and Giant Marshmellows to be enjoyed at home with his little brother. He was heard to say as he walked down the steps "when I grow up I'm going to be a Radio Ham".

It was so good for the members present to meet the Secretary from 1970 – 1971 John Watson. His memories of the early days were of special interest to the newer club members. Auckland Civil Defence sent along representatives and the Local Puketepapa Board was also present. It was a great afternoon enjoyed by all who attended.

Special thanks to the Puketepapa Local Board for donating funds for the Neighbours Day event. Thank you also to Kids First Charity (Toys), Auckland Civil Defence (Activity Books), Mathews Electronic Services (for their donation of Devonshire Scones & Assorted Cakes & Slices), Doug Cooke the clubs own Master Chef (for 200 mini hand made burgers) and Dave Dingley (for the sound system & PA).

A big thank you to Committee members ZL1TIA, ZL1ICU, ZL1TUX, ZL1TTE, ZL1MYL and ZL1AYV this would never have happened without you.

Marlene Matthews

Food set out for the neighbours

Local Board member Michael Wood
With Margaret Dingley

Marlene Matthews with Local Board member Ella Kumar

The 60th Anniversary celebration of the Auckland VHF Group

Saturday 16 July 2016 - Ryders Cinema, Avondale

At the NZART Conference held in Auckland during June 1956 a small group of enthusiastic VHF'ers met and discussed how to share their experience and encourage others to join them in exploring the VHF and higher frequencies allocated to the amateur service. This is believed to have been the first VHF Meeting at an NZART Conference. From this meeting at Conference, the same group decided to form the Auckland VHF Group and the minutes of the first formal meeting record a meeting held on 16 July 1956 at the QTH of Cliff ZL1MQ where time was spent discussing how to encourage the construction of equipment for these frequencies.

60 years later to the day, members of the Group gathered to celebrate the occasion with an afternoon tea and "meet the neighbours" at the clubrooms in Hazel Avenue, followed by a meal and movie at Ryders Cinema in Avondale.

For the afternoon tea, the clubrooms experienced a significant "spruce up" and thanks must go to Marlene ZL1MYL and Margaret ZL1AYV for the tremendous job done in setting out and decorating the clubrooms. The writers suspect that their respective spouses Laurie ZL1ICU and Dave ZL1TIA also did their share to help make the clubrooms so presentable on the day. Invitations were sent out to some 50 of the nearest neighbours, inviting them to the afternoon tea which commenced at 2.30pm. The Puketapapa Local Board members were invited and the club was pleased to welcome Michael Wood and Ella Kumar.

The afternoon tea was a great success with a mixture of club members, neighbours and board members enjoying time at the clubrooms, looking at the historical information on display and taking part in the many discussions. A special thanks to Marlene ZL1MYL for the catering with a great range of finger food. Special bags were given out to the neighbours children who came along these were well received.

The evening function at Ryders Cinema was a great venue for a group of our size and known for having a toasty room in the middle of winter with a satisfying roast dinner and good company. We were not disappointed. The meal was followed by dessert (also organised by Marlene ZL1MYL) and the cutting of the 60th Anniversary Cake. The occasion was a time to remember past figures that have helped shape the club into what it has become. There were also letters of support and messages from some who could not be there. See elsewhere in Spectrum for the message from NZART President Stuart Watchman. The Group's current president Dave Dingley ZL1TIA read these out and entertained as MC with recognition for those who had helped in the organisation of the evening. A glass of sparkling wine was provided as MC Dave proposed a toast to the Queen, absent friends and of course the Group. A total of 32 members and friends present for the evening.

The evening was rounded off by showing the movie "Love, actually" with a cast of well known actors all contributing. It provided good light-hearted comedy to extend the feeling of the evening.

Peter Loveridge and Vaughan Henderson

The interior of Ryders Cinema

President Dave entertaining in fine form

Auckland Unitary Plan Update

Hearings on the Proposed Auckland Unitary Plan concluded at the end of June. The Independent Hearings Panel, (government appointed and independent of Auckland Council) reviewed over 13,000 submissions, received over 10,000 pieces of evidence, and held 227 pre-hearing mediation sessions and 249 days of hearings with over 4000 appearances by submitters. This included the submissions made by our own amateur radio working group. The Panel now has to complete its recommendations on changes it thinks should be made to the Proposed Auckland Unitary Plan and these will be based on all of the submissions, hearings and evidence put before the Panel during the hearings process.

On 27 July, councillors will be briefed on the Panel's recommendations and the public will be able to view all of the information provided by the Panel on the council website.

The legislation gives the council a very limited timeframe to consider the Panel's recommendations and make final decisions (20 workings days) and decisions will be made between 12 and 18 August 2016. In making their final decisions, councillors will consider the Panel's recommended version of the Auckland Unitary Plan and reports and then must either accept or reject each recommendation to decide the Auckland Unitary Plan.

They cannot reject a Panel recommendation without explaining why and providing an alternative solution from within the scope of public submissions made on the Proposed Auckland Unitary Plan together with a cost benefit analysis. When the council publicly notifies its decisions on 19th August it will explain:

- each recommendation of the Hearings Panel that it accept
- each recommendation of the Hearings Panel that it rejects and the reasons for doing so

the alternative solution for each rejected recommendation and supporting analysis.

A link to the relevant document can be found here:

http://www.aucklandcouncil.govt.nz/EN/planspoliciesprojects/plansstrategies/unitaryplan/Documents/ihprecommendations/ihp042infrastructure.pdf

6.6. Panel recommendation and reasons

6.6.1. Amateur radio configurations

The Panel considers that the imposition of standards similar to those approved by the Environment Court in its decisions on Plan Change 74 to the Wellington City District Plan (NZ Assn of Radio Transmitters and others v Wellington City Council [2012] NZEnvC 8 (interim decision) and [2013] NZEnvC 38 (final decision)) will adequately address any adverse effects of amateur radio configuration activities. There is no evidence to show that the environment in Auckland is so different from that in Wellington to justify different controls for these activities. Therefore, the Panel recommends that these activities be provided for as permitted activities in all zones within specified standards. Where the activities fail to comply with the standards they are to be assessed as discretionary activities.

Researched by Vaughan Henderson

E26.2.5.3. Specific activities within zones in Table E26.2.3.1

Amateur Radio Configurations

(25) Amateur radio configuration activities must comply with the following standards:

(a) no limit to the number of supporting structures less than 102mm in diameter. Where guy wires are used, these must not exceed 10mm in diameter;

(b) a maximum of one supporting structure greater than 102mm. The maximum height of the supporting structure shall be the relevant building height. The maximum horizontal diameter of the pole or supporting structure is 800mm. The minimum setback from any boundary is 1.5m. Any guys used to support the pole must not exceed 10mm in diameter;

(c) dish antennas located less than 5m above ground have a maximum horizontal diameter of 4m and a minimum boundary setback of 1m. Dish antennas situated more than 5m above ground have a maximum diameter of 1.2m;

(d) the maximum height of antennas mounted on buildings using a supporting structure less than 102mm diameter shall be 18m in the residential zones, and 18m or the relevant permitted or actual building height plus 5m (whichever is greatest) in all other zones;

(e) all antennas must be designed and operated in compliance with New Zealand Standard NZS 2772 : Part 1 : 1999 Radiofrequency Fields Part 1 – Maximum Exposure Levels – 3 kHz to 300 GHz at all times and in all places to which the public has access; and

(f) no amateur radio configuration may be located on a site that is, or contains, a scheduled historic heritage place. In respect of a scheduled historic heritage place, no amateur radio configuration shall be located on a site with a extent of place or any area of legal road within that extent of place.

Licensed amateur radio operators have an important role in civil defence activities in the city. The rules recognise this by permitting certain amateur radio configurations for use by licensed amateur radio operators.

The main deficiency is that there does not seem to be any dispensation for “Height in relation to boundary”. We are allowed 2.5m on the boundary, rising at 45^{o} up to a maximum of Zone Height plus $1/3^{rd}$.

The main benefit is that the recommendations don’t seem to restrict what is on top of the main support structure. In other places, reference is made to HF Aerials, so the Panel does seem to know they exist.

Extracted from the latest newsletter from Douglas Birt

These Configurations are not yet cast in stone (Notified). The Councillors still have to discuss and accept or reject these recommendations. It is hoped that they will have much more politically important matters such as housing to occupy them and allow the rules above to stand.

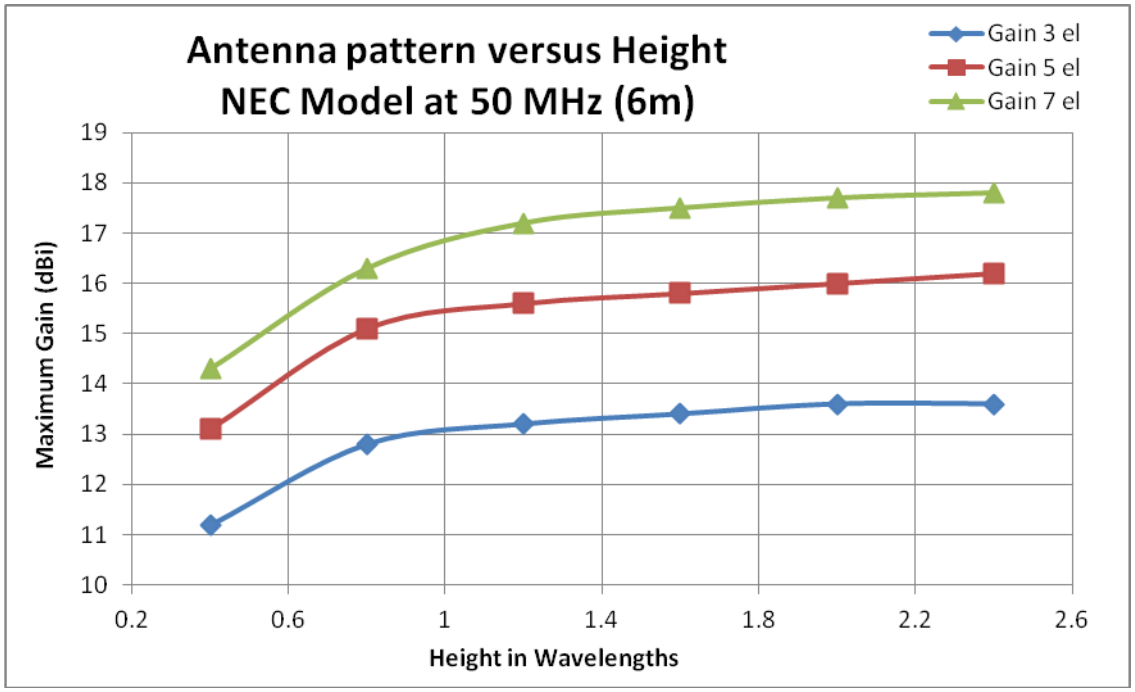
4NEC2 applied to Antenna height

Understanding what modelling can tell you

The Independent Hearings Panel has been deliberating on the Auckland Unitary Plan for a long time and by the law establishing the Auckland Super City it must deliver its report by 22 July 2016 to Auckland Council. The Auckland Council have undertaken to publish the report by early August after they have taken some time to understand what they have received. The Council have a month to accept or produce reasons why they want changes to the findings of the panel. Amateurs are about to find out what will be permitted by way of masts / towers and antennas.

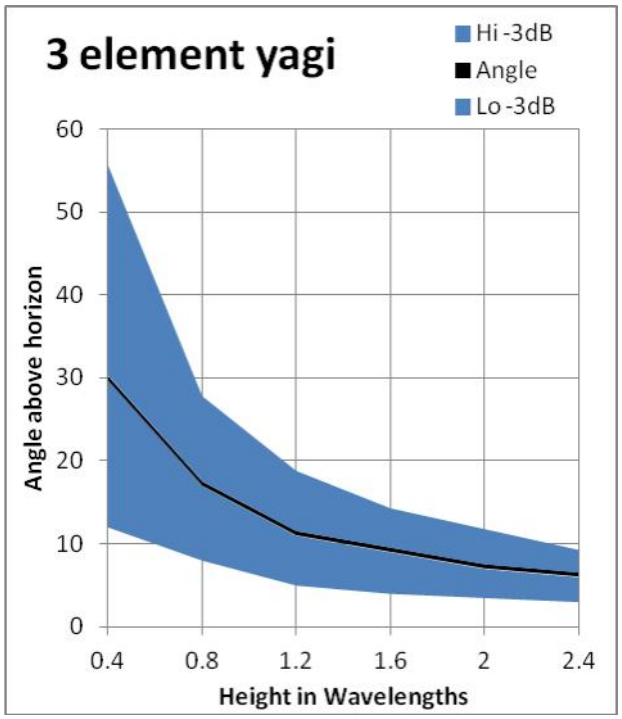
In the submissions to the Notified Plan[1] the US author Dr Siwiak KE4PT was quoted for his study of the best compromise height for an HF antenna installation with the figure of 19.9 m being produced for users of the 10 m to 40 m bands. It was not explained how this was arrived at in the submission but an understanding of antenna height versus angle above ground of the major lobe of an antenna pattern combined with the height of the effective ionisation altitude and the number of hops determines the optimum angle for a given path.

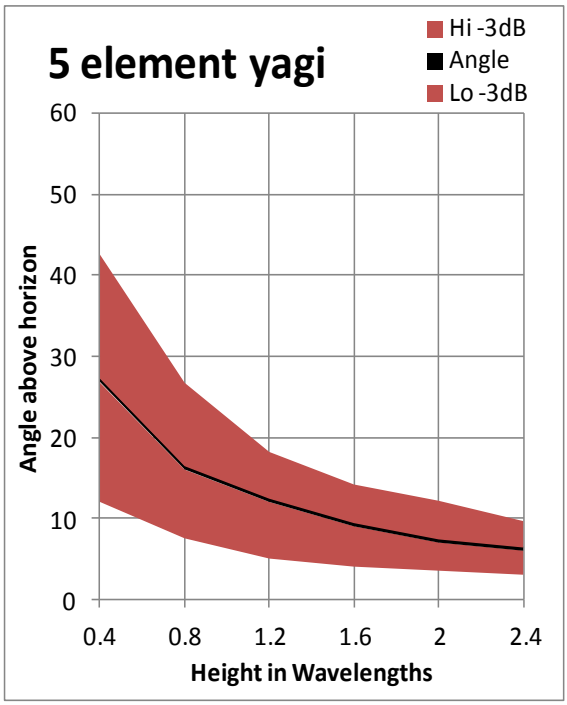
How are VHF and above operators effected by antenna height? As ionisation is generally not a consideration except at 50 MHz it is relatively easy to achieve a low angle of major lobe. Reading the original article[2] it states that the optimum height for the 6 m band is 15.3 m. Using 4NEC2 with height as a variable it become easy to see how the major lobe is affected by height and the results graphed in wavelengths. This can be scaled to the frequency of your choice. Examples using 2.5, 5.0 and 7.5 m booms were modelled to look at trends in antenna size.



The article states that a study of arrival angles for 6 m DX[3] has two peaks around 10° and 5° above the horizon with very little below 3-4° or above 13-14°. By making judgements about

the angle where -3 dB occurs in the 4NEC2 Pattern screen the vertical beam width can be determined.

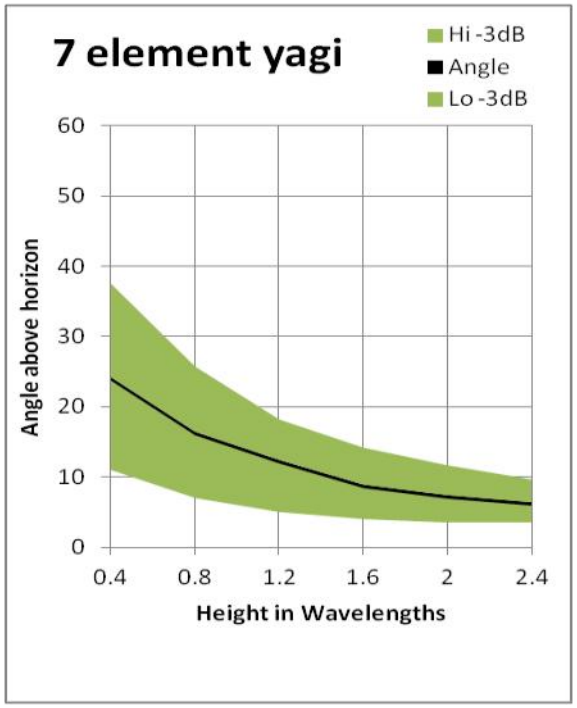




Another statement made in the article is that the optimum height for any band is in the range 1.5 to 1.6 wavelengths. All of the antennas modelled here show the major lobe to be 4 - 14° at -3 dB from maximum gain at this height which would cater for typical 6 m DX.

As the boom length increases the preferred height increases as gain can be seen to be increasing more at any given increment in height.

Fortunately 6 m antennas are not as big as HF antennas so with acceptable performance being mounted at 10 m height should not result in as many complaints from your neighbours.



[1] The Auckland submission at http://www.qsl.net/zl1bq/page13.html Click on Supporting Documents to see the argument. Page 8 “Antenna height” and page 15-16 “An academic Analysis” discuss the importance of antenna height.
[2] Page 36, QEX May/June 2011
[3] This is based on the work of Joe Kraft, CT1HZE as reported in “The World Above 50 MHz”, QST July and August 2009

General Notices

Dave Johnston ZL1AMN – Silent Key. Dave passed away peacefully on Thursday 28 July after a period of illness. Dave's funeral was held on Wednesday 3rd of August at 1pm in Fountain's Chapel on the corner of Wood and Elliot Street in Papakura. Dave is survived by his wife Aola ZL1ALE, and daughters Carol ZL1AJL and Mary. Dave was a long-time member of the Auckland VHF Group and also the Papakura Radio Club. In 2010 in recognition of his contribution to the sport of Amateur Radio DXing in New Zealand, Dave was inducted into the NZ DX Hall of Fame. Dave's DXpeditions to many parts of the Pacific operating as ZL1AA/K, ZK2DJ, A35DJ and 5W1CA enabled a whole generation of amateur radio operators worldwide to be able to make contact with those otherwise elusive countries. The Auckland VHF Group extends its deepest sympathy to Aola, Carol and Mary. Farewell Dave, amateur radio is the poorer for your passing.

Vaughan Henderson

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

INFORMATION

The Auckland VHF Group has an active AREC section that works closely with Auckland City Civil Defence. They provide advice, resources and manpower to assist in times of need. The Auckland VHF Group clubrooms provide a backup system to complement the existing systems maintained by Auckland City Council Civil Defence.

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 Rally NZ.

For further information about AREC please see the NZART web site.

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.

AREC:

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

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AUCKLAND VHF GROUP (INC)

SUPPORT THE EFFORTS OF THE VHF GROUP THROUGH YOUR SUBSCRIPTION

SUBSCRIPTIONS FOR 2016

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**	**Surname**
	Mr		
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 required	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. FAX to 028 25544801 or Email d-jcooke@ihug.co.nz		
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, 2nd Monday of the month or to the Committee meeting last Monday of the month.		

The Auckland VHF Group Inc Branch 66 NZART

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 ***2016***

Repeater frequency and name	Repeater location	Sponsorship advised for 2016	Amount paid
53.725 Repeater	Klondyke Road	Gwynne Rowe ZL1AAR	$50.00
144.253 Beacon	Nihotupu	Nic Wallace ZL1IU	$50.00
145.625 Data Rptr	Klondyke Road	**NON-operational**	
145.650 Dstar repeater	Klondyke Road	L/M Mathews ZL1ICU/ZL1MYL	$50.00
146.625 Repeater	Klondyke Road	L/M Mathews ZL1ICU/ZL1MYL	$50.00
146.700 Repeater	Ruaotuwhenua	Dennis Thornton ZL1TAY	$50.00
146.900 Repeater	Mt Puketutu Radio		
432.253 Beacon	Nihotupu	**Under repair**	
438.175 Dstar repeater	Klondyke Road	L/M Mathews ZL1ICU/ZL1MYL	$50.00
438.500 Repeater	North Head		
439.850 Link Tx to Kaimai	Klondyke Road		
439.875 Ak Nat Sys Rptr	Klondyke Road	Martyn Seay ZL3CK	$50.00
439.900 Link Tx to Egmont	Klondyke Road	Martyn Seay ZL3CK	$50.00
439.950 Link Tx to Brynderwyn	Klondyke Road		
1291.9 Repeater	217 Glenfield Rd	Vaughan Henderson	$50.00
		Total Sponsorship	**$400.00**
NZART Inc: Branch donations			
Auckland Branch 02			$100.00
Franklin Amateur Radio Club. Br: 10			$200.00
Manukau Radio Club, Br: 21			$100.00
Papakura Radio Club. Br: 65			$500.00
		Donations	**$900.00**
Prepared by Merv Thomas ZL1SK and current as at 27/6/2016			

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 2016 or donate towards the Group's repeater Operations.

Merv ZL1SK – m.r.thomas@vodafone.co.nz

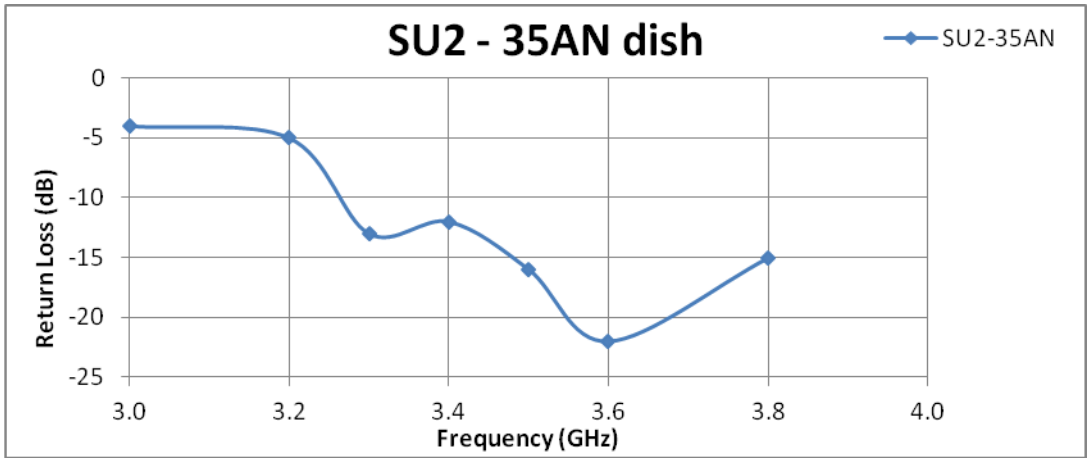
Surplus parabolic dish clearance

Auckland VHF Group, Inc.

The Auckland VHF Group had an opportunity to assist a company that was about to write off some old stock that had never been used in the field. The dishes were mostly made by RFS of France and have size SU2 corresponding to a nominal diameter of 0.6 m. Rim to rim it is 0.75 diameter. Some of the dishes have feeds but they are not on Amateur bands. Weight is of the order of 8 – 12 kg. The awkward shape makes it desirable to pick them up from the club-rooms. This size is ideal for 6 cm and 3 cm bands and acceptable for 9 cm.

F/d is not specified for these dishes but measurement to the centre of the dipole of the "splash plate" feed is approx 19.6 cm above the surface (SU2 35AN). The other dishes are deeper with a lower F/d ratio that would require a wider angle of illumination. Where there is an existing feed the position can be recorded for positioning a replacement. Mounting hard-ware to a pole is available for several of the dishes for pointing in fixed directions as point to point links. The plate which mounts the feeds could be modified to support a feed built to match the dish or a new circular plate could be cut or turned from sheet aluminium if starting from scratch.

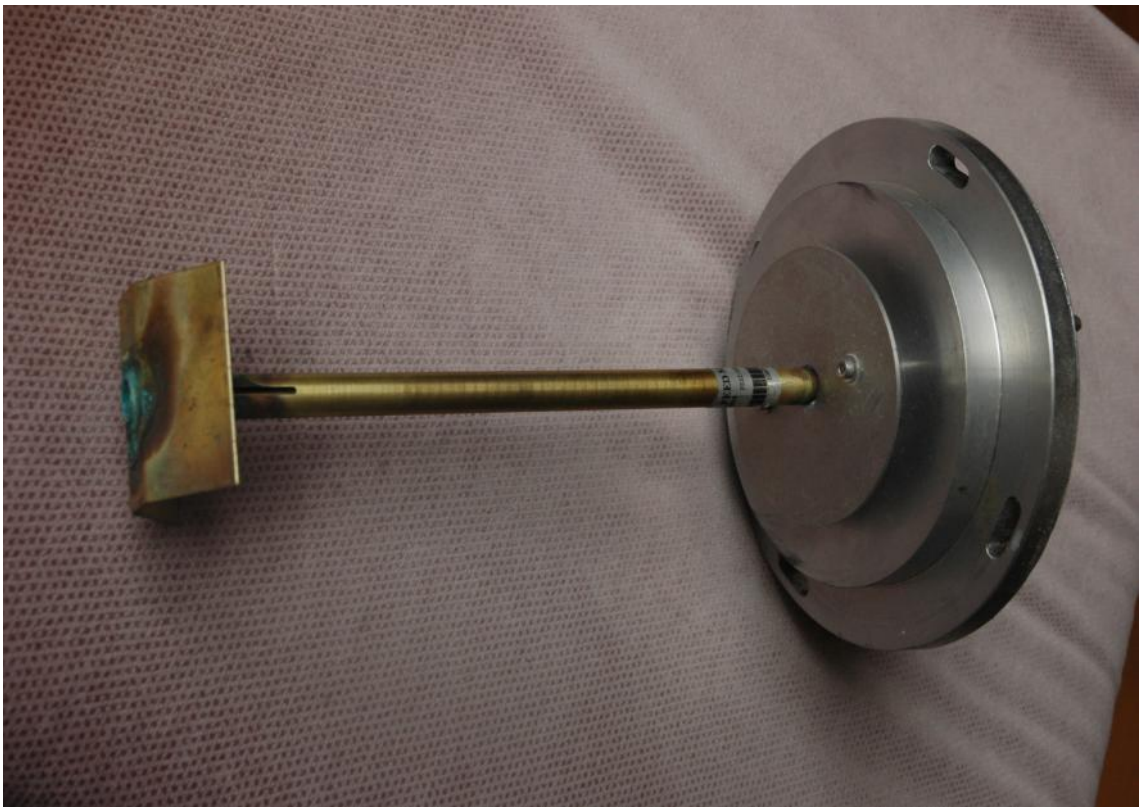
The asking price is NZ$ 50 each.
The SU2 35AN dish has a feed for 3.4 – 3.6 GHz with an N(f) connector and is usable at 9 cm (3.3 – 3.41 GHz). The price for this model is $60 each.



These measurements were made the old fashioned way with a cavity tuned signal generator, directional coupler and power meter all of which were 25 or more years old.

Contact Vaughan Henderson 09-4181071 or Peter Loveridge 09-3773398 for further information

Some of the dishes have already gone to keen constructors!



The Splash Plate feed for the SU2-35AN dish

TRADING TABLE

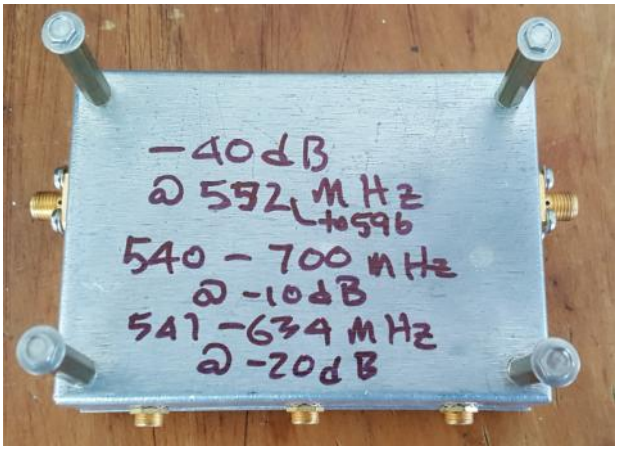
Currently our Trading Table is only open on meeting nights. Opening on Saturdays may resume later in the year so keep an eye out for announcements in Spectrum.

Parabolic Dish Clearance:

We have had an opportunity to assist a company that was about to write off some old stock that had never been used in the field. The dishes are mostly made by RFS in France and have size SU2 corresponding to a nominal diameter of 0.6 m. Rim to rim they are 0.75 diameter. Some of the dishes have feeds but they are not on Amateur bands. Weight is of the order of 8 – 12 kg. The awkward shape means pick up only from the clubrooms. This size is ideal for 6 cm and 3 cm bands and acceptable for 9 cm. F/d is not specified for these dishes but measurement to the centre of the dipole of a "splash plate" feed is approx 19.6 cm above the surface (SU2 35AN). Mounting hardware to a pole is available for several of the dishes for pointing in fixed directions as point to point links. The plate which mounts the feeds could be modified to support a feed built to match the dish or a new circular plate could be cut or turned from sheet aluminium if starting from scratch.

A limited number still available at only NZ$ 50 each. Contact Vaughan Henderson 09-4181071 or Peter Loveridge 09-3773398 for further information.

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.



TRADING TABLE

NEW – NEW - NEW

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

And there's more….

N-Type connectors for LMR-400

Crimp-on only. $5.00 each

Other coaxial connectors available from the Trading Table:

Please note we have sold out of TNC connectors – these are no longer available.

BNC plugs 50 ohm for RG58 coax (solder/clamp type)	$2.50 each
BNC plugs 50 ohm for RG58 coax (crimp on type)	$2.50 each
BNC sockets 75 ohm – single hole mounting	$1.50 each
N Type male solder on suit RG213 coax	$4.00 each
N Type male right angle, suit RG213 coax	$4.00 each
N Type male crimp on suit RG213 coax **	$3.00 each
N Type socket crimp on suit RG213 coax **	$3.00 each
N Type male right angle, solder on suit RG213 coax	$4.00 each
N Type male sliver plated solder/clamp on suit RG58 coax	$3.00 each
N Type male crimp on suit RG58 coax **	$2.50 each
N-Type adaptor Male to Male	$3.00 each
Adaptor TNC Male to UHF Female	$3.00 each

** Crimping service available for these at club meetings.

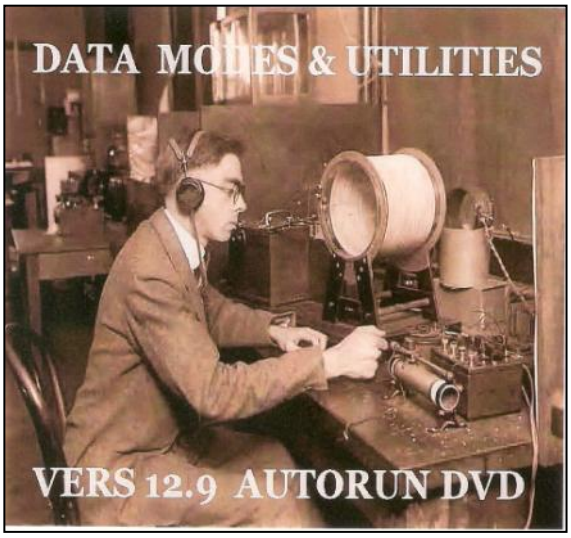
Need Crystals for your next project?

3.579545 MHz HC18/U wire ended holder	
4.194304 MHz HC18/U wire ended holder	$1.00 each
4.1952 MHz HC18/U wire ended holder	$1.00 each
4.33618 MHz HC18/U wire ended holder	$1.00 each
6.000 MHz HC49/S SMD package 20pF load capacitance	$1.00 each
8.000 MHz HC18/U wire ended holder	$1.00 each
8.192 MHz HC18/U wire ended holder	$1.00 each
8.867238 MHz HC18/U wire ended holder	$1.00 each
10.000 MHz HC18/U wire ended holder (KDS Brand)	$1.00 each
13.875 MHz HC18/U wire ended holder	$1.00 each
14.31818 MHz HC18/U wire ended holder. Rakon J30G-4H spec	$2.00 each
14.7456 MHz HC49/S SMD package	$1.00 each
17.472 MHz HC18/U wire ended holder	$1.00 each
18.432 MHz HC18/U wire ended holder	$1.00 each
20.0000 MHz HC49S SMD package P/No.7D20000183BSAF25Q3	$1.00 each
24.567 MHz HC18/U wire ended holder	$1.00 each
45.600 MHz HC18/U wire ended holder	$0.50 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).	$1.00 each
MGF1302	Low noise GaAs FET Nf = 1.4dB @ 4GHz, 4dB @ 12GHz.	$5.00 each
BFR91	NS RF Amp. 5GHz 1.9dBnf @ 500MHz	$2.00 each
BFY90	NS 30V 50mA 2.5dBnf @ 200MHz TO72 VHF/UHF	$1.50 each
MFE121	Dual gate N-MOSFET 20V 5mA VHF Amp BF352 equiv.	$0.50 each
MPS5179	NS TO92 12V 50mA 200mW fT 2000MHz Nf 5.0dB 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	$1.50 each
MPS5172	NS 25V 100mA Ft 120MHz	$0.10 each
MPS6507	NS, VHF Mixer, 20V, 100mA, Ft 700MHz [data]	$0.20 each
MRF237	NS RF Pwr. VHF 4.0W 12V TO39	$3.00 each
MRF559	NS RF Pwr. 806-960MHz 0.5W 12.5V	$0.50 each
MRF904	NS RF Small signal amp. Ft 4GHz 15V TO206	$3.00 each
2SC908	NS TO39 RF Amp 1W @ 500MHz 13.6V [data] Designed as driver and RF power amplifier. 0.5 to 0.8W output at UHF land mobile band. Gain 15dB (Vce=6.0V, Ic=5mA, ft=2000MHz)	$1.00 each
3SK45	Packaged as ECG221, dual-gate N-channel MOSFET for vhf amp and mixer applications.	$0.75 each
3SK73GR	Dual-Gate MOSFET N-channel 30V 7mA	$1.50 each
3SK74L	Dual-Gate MOSFET N-Channel 20V 25mA(max)	$1.00 each
3SK192GR	Dual-Gate MOSFET 15V 30mA(max)	$1.00 each
2SC5488	NS 30V 70mA low noise rf pre-amp	$0.10 each
BF199	NS 25V 25mA, 500mW ft = 550MHz TO92	$1.00 for 10
BF494	NS 20V 30mA Low noise mix-osc/ IF amp TO-92	$1.50 for 10
40673	Dual-gate N-Mosfet – See MFE121	$0.50 each

DATA MODES & UTILITIES CD



Version 12.09 has even more updates and new programmes on this latest release. This is an excellent selection of software, notes, links to web sites compiled by the late Doug ZL1AVY and this latest edition has over 300 applications, references and notes. These cover all digital modes, useful software applications for your pc, contest logging and e-qso programmes, radio interfaces, software defined radio information, slow scan tv software, test equipment utilities, satellite tracking software, and much, much more. **Still only $10.00**

SMD Quartz Crystals: In addition to our selection of leaded holders, now have 6MHz and 20MHz crystals in SMD style housings:

6.0000 MHz HC49S SMD package 20pF load capacitance $1.00 each

20.0000 MHz HC49S SMD package P/No. 7D20000183BSAF25Q3 1.00 each

Capacitors, Surface Mount – most are 1206 size. Packed in bags of 10 for 50c

NPO 50V working: 0.68pF, 1.2pF, 1.8pF, 2.2pF, 5.6pF, 6.8pF, 8.2pF, 10pF, 15pF,

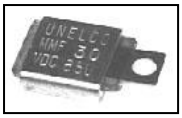
22pF, 33pF, 68pF, 82pF, 270pF, 470pF, 100nF.

63V working: 10pF, 47pF, 100pF, 270pF, 330pF, 470pF, 1nF, 1.2nF, 2.2nF, 4.7nF, 10nF
10uF 25V electrolytic

Capacitors, Metal Clad Mica (Unelco, Semco) $2.20 each

Values (in pF): Or 10 up for $2.00 each

3.9, 4.7, 6.8, 10, 12,15, 20, 22, 24, 27, 30, 33, 34, 47, 51, 62, 82,
100, 120, 130, 150, 220, 240, 300, 360, 680pF
Most are rated 350V working ±5% tolerance.
Similar to illustration, tab does not have hole:



Mixers:

Mini-Circuits Model TFM-2-408-1:

5 – 1000MHz 6dB insertion loss, +17dBm LO drive, 40dB isolation
$25.00 each

Note: some of these mixers are labeled TFM-2-408-2. They are identical to the TFM-2-408-1.