



Hastings Br 13

Club Call

ZL2AS

Napier Br 25

Club Call

ZL2GT

IRLP

Node

6793

147.250

HB DX

Cluster

ZL2AL-1

144.650

Connect

and type

"DXC"

**Branch
Nets**

9.00 AM

Sunday

Morning

3615 Hz

147.250

MHz

Editor

John Newson

ZL2VAF



ZL2AL's son Ryan has found this interesting plaque in London.

<http://groups.yahoo.com/group/zl2as/>



Join the KIWI DX Group

Talk to ZL2AL for Details

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Club Call: **ZL2AS**

Club Nights: Fourth Wednesday each month at 7.30 pm Surf Club Rooms, Windsor Park, Hastings

Hastings Branch 13 - President's Report

Hi all.

I've had a rather busy month. The car rally went well if you exclude the weather. Unfortunately Day 2 of the event was canceled due to road closure. I am hoping in future years to make greater use of HF to save on repeater deployment. I will write up an article on making your own portable 80m dipole in the near future.

An APRS I-gate is to be established in the near future in Hastings. With the right bits, you will be able to transmit APRS traffic and others will be able to pick it up anywhere around the world.

This month we will be hosting Mike Bull ZL2VM and he is to talk about LED lighting. Do come along.

On Tuesday the 26th ham classes will be starting at 5:30pm after work on Tuesday and Thursday nights. If you know someone with an interest in the hobby, please send them along. Bring \$30 for course fees. Send them to 114 Brookfields Rd in Pakowhai.

VHF Field Day is coming up in a few months. Are you interested in putting a team together? If not, plan to come up on the air as the ZL2AS team would enjoy working you for points. We have put a challenge out to other branches, so spread the word. This is the chance to test out your VHF and UHF systems, to see how far you can get with them.

I have constructed an award that will be up for discussion at the next branch meeting. I envisage it to be a fun award that many will be able to participate in and score well.

That's all for now. I look forward to seeing you on Wednesday the 27th of August at 7.30pm.

NAPIER BRANCH 25

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Committee Meetings: Third Monday of the month 7pm at Club Rooms

Club Call: **ZL2GT**

Club Nights: First Wednesday each month (except January) 7.30pm at the Club Rooms: 123 Latham Street Napier

Branch 25 Napier News...

NAPIER NEWS...

The September Napier meeting will be at the clubrooms on Wednesday 3 September at 7.30 pm. Mike ZL2VM will be giving a demonstration of an emergency 12 Volt lighting system.

At our last meeting members showed items from their shacks.

Some members and some from Hastings visited the Napier fire station at the invitation on Mike ZL2VM to inspect a new Hazardous Materials and Communications/command tender that has just been fitted out. The testing and acceptance was being carried out at Napier on the first truck built which will be moved elsewhere and Hawkes Bay (Hastings) will receive a similar one from the batch of 16 in due course. The truck is well set up for communications with numerous multi-channel radios for voice and data plus video and satellite communications. There are 13 collapsable whip antennae on the roof as well as extending poles for lights and antennae plus a satellite dish on the cab roof. The truck area is split into two, with a smaller two desk comms centre with the equipment, patch panels, displays, computer displays etc. The larger section has the computers, display boards including interactive display/management board etc and storage space for the various bins of hazard equipment. Outside there is a built in external display of the management display screen, various lockers of equipment and two fixed generators that power the truck - one via a no-break battery-operated unit. A very impressive truck - would make a great ham setup. Thanks Mike for making it possible.

I noticed in the newspaper the death of Peter Kirkland recently. Peter attended a recent meeting bringing along a ham friend from Northland who was wheelchair bound. Peter was not a ham himself but his mum and dad were and his mum Sylvia lived with Peter and his XYL at the start of the Esk Valley for a number of years and attended our meetings at times in the 80s. His mum and dad Sylvia and Bill were very active in the 60s from Pahiatua and later from Northland.

Remember that the Napier library now has QST and RSGB Radio Communications magazines plus various ARRL and other handbooks. The magazines are available for viewing in the reference section upstairs until another issue comes out, when they are transferred downstairs to the borrowing section. They await your use.

Communications around the world are continuing on the bands (just) without the aid of sunspots. Conditions are poor but there are some DX signals appearing and they should improve as we approach the equinox. It seems that we are still in the sunspot minima period.

Proposed Trigtop Award

Aim 1 – to contact operators from hilltops around the country.

Aim 2 – To encourage people to venture up hilltops with amateur radio.

Brief Description

Log contacts you make with hilltop stations to accumulate contact points. Persons with top 3 points total per calendar year will receive a 1st, 2nd or 3rd award for that year. Persons scoring over 500,000 will receive an award.

Rules.

Contact may be made once with a trigtop station per day, per hilltop. If an operator stays at a trigtop overnight you may work him or her the next day. If an operator moves to another trigtop in the same day you may also rework him or her.

Trigtop stations must be within 50m of a trig station as shown on a 1:50000 map. These are shown by a solid or hollow triangle. Spot heights are not counted for this award.

Operators may access a trig by any means. The mode of transport however will effect the score.

An operator at a trigtop may claim the hilltop points for him or herself if he or she makes one QSO with another amateur operator.

Permission must be sought by the landowner to access trigtops on private land. Any reports of illegal trespassing will nullify all contacts made from the trig concerned. DOC land and public land is exempt from this.

Stations must follow bandplan and amateur rules to be eligible for the award.

Scoring

Base points – The altitude above sea level of the trigtop as shown on the 260 series maps.

Multiplier 1 – Mode of access to trigtop.

X 2 for walking over 100m vertically or over 500m horizontally to the trigtop

X1 for all other modes of transport accessing the site.

Multiplier 2 – Retransmission

X 2 for simplex contacts.

X 1 for contacts through repeaters, or other retransmission devices.

Exchange.

A valid contact must exchange the following

- Callsign
- RS (Readability and Signal Strength)
- Trigtop Name if known, or NZMG grid reference if not known.
- Trigtop height for scoring as shown on 260 series maps. Do not rely on GPS readings.
- Multiplier 1 for scoring.

Logs

A sample log is attached. Logs must carry the information exchanged in the QSO, and all scoring information. Logs should be submitted for the annual place getter prize in the month of January for the previous calendar year. Logs submitted to claim the award may be submitted at anytime.

Proposed Trigtop Award

Continued ...

Special Case

If one trigtop is working another trigtop, to claim both their and your own points, make 2 QSO's. The first for your own trigtop to claim for yourself. The second to claim the points of the trigtop you are working. This should be shown in the log as 2 QSO's.

Appendix 1 Grid Reference

Map number and 6 figure grid are acceptable for this. Refer to the 260 series of maps for details on how to supply a 6 figure co-ordinate. State the map number and 6 figure grid in your log. These are accurate to 100m

Appendix 2 – Multiplier 1

To claim 100m Vertical walking, you must have started your tramp at a height above sea level 100m less than the trig. Thus you must have ascended at least 100m to get to the trig. To claim 500m horizontal, your tramp must have taken you over 500m of ground. This equates to half a square on 260 series maps. Meeting either of the above conditions makes you eligible for multiplier 1.



Hastings Meeting Guest Speaker

Peter Mulhare ZL2IK (ex Napier a few years ago) is visiting HB and will bring with him his VK friend Graham Brown VK3BXG. They will attend our Br 13 meeting on 22 Oct and while there Graham will give a talk and pictures on the VK WICEN (the VK equivalent of our AREC). All welcome.



Link to Digital VFO Construction Project

In the March 2008 issue of SILICON CHIP there was a full blown construction project called

A DIGITAL VFO with LCD Graphics Display by Andrew Woodfield ZL2PD

<http://www.geocities.com/zl2pd/>

and

<http://www.geocities.com/zl2pd/DDSVfo.html>

Broadbanding the Half-Square Antenna for 80-Meter DXing

By Rudy Severns, N6LF
PO Box 589
Cottage Grove, OR 97424

This article was originally published in the ARRL Antenna Compendium Vol. 5 1996

The half-square antenna is by nature relatively narrow band.¹ On 80 meters, for example, an SWR below 2:1 can be achieved anywhere in the band, but only over a relatively small range (60 to 100 kHz). The primary reason for using a half-square instead of a dipole is for improved performance on DX contacts.

There are two DX “windows” on 80 meters, 3.500-3.520 MHz and 3.750-3.800 MHz—most CW activity is close to 3.500 and SSB around 3.790 MHz. It is very easy to adjust a normal half-square antenna to have low SWR at either one of these frequencies, but not at both. Practically speaking, any serious DXer will want to be able to use both CW and SSB, so this is a real disadvantage.

It is possible of course to build a matching network of some kind or to use a tuner to load the antenna at both frequencies. However, that may not be as simple as it sounds, because if the SWR is low in one window, it will be very high at the other. It could be 20:1 or more!

The attraction of the half-square is its simplicity. It would be nice to allow operation in both windows while keeping the simplicity. This article shows a way to do that by adding two wires to the classical half-square.

Broadbanding the Half-Square

On 80 meters even a dipole is not a broad-

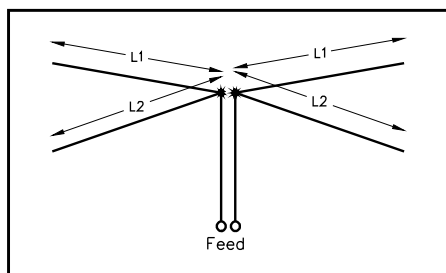


Fig 1—Broadbanding an 80-meter dipole using a fan-shaped pair of unequal-length radiators.

N6LF discusses a simple way to broadband the classic half-square antenna to operate in both the CW and SSB “DX windows” on 80/75 meters.

band antenna. One trick frequently used to broadband or multiband a dipole is to add additional wires to the dipole to form a fan, as shown in Fig 1. The two wires on each side of the feed point have different lengths and are adjusted to produce two resonance points. A variation of this idea works for the half-square. It can provide the desired double resonance and can also provide 3-4 dB of front-to-back ratio if that is desired.

The bi-directional (0 dB front-to-back) version of the half-square is shown in Fig 2. The single vertical wires at each end of the antenna have been replaced with two wires, of different lengths (L1 and L2), with the lower ends well separated. Note that the vertical wires are in the plane of the horizontal top wire (L_T). In a bit we will see what happens if the wires are not in this plane. The pattern from this antenna is shown in

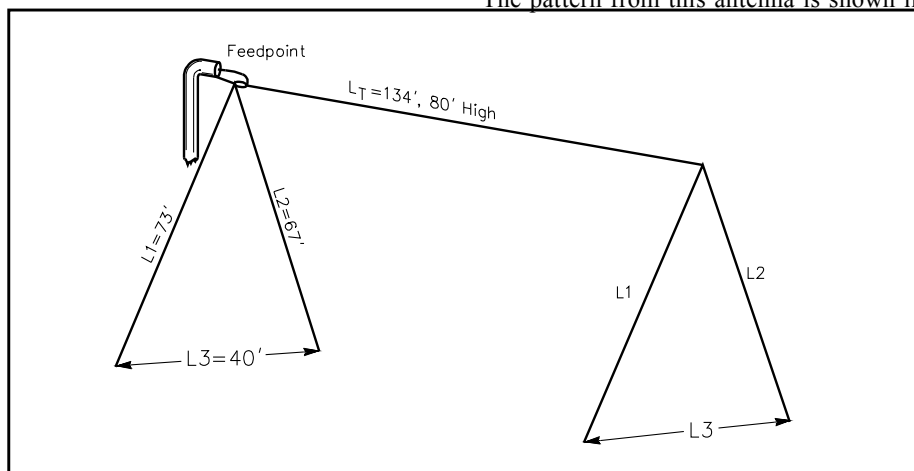


Fig 2—Typical N6LF broadband symmetrical half-square for 80 meters. All wires are in the plane of the horizontal top wire. The vertical wires are spread out 40 feet at the bottom in this case.

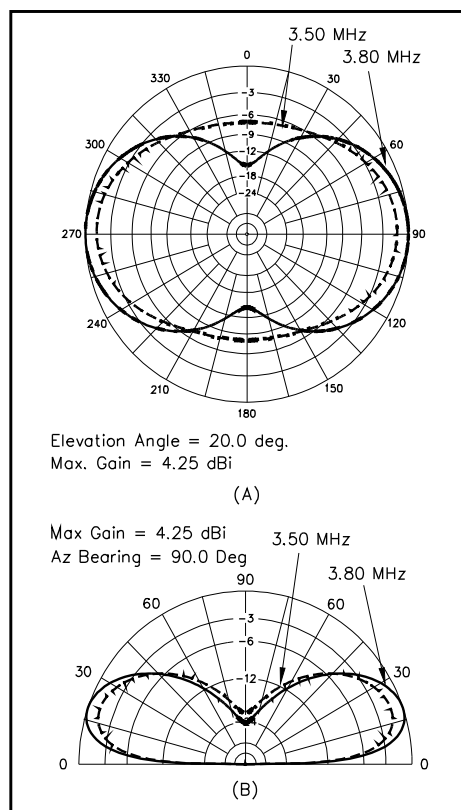


Fig 3—At A, azimuth response of symmetrical broadband 80-meter half-square at 3.8 and 3.5 MHz. At B, elevation response of symmetrical broadband 80-meter half-square at 3.8 and 3.5 MHz.

Fig 3. There is some sacrifice in gain at the lower resonance, but only about 1 dB.

If the vertical wires do not lie in the plane of the top wire, as shown in Fig 4, it will still be possible to obtain the double resonance, but the pattern will be affected. As shown in Fig 5, the pattern is no longer strictly bi-directional. There can be several dB of front-to-back ratio. The front-to-back ratio improves the gain in one direction; this may be helpful in some situations. More often, however, it is desirable to work long path as well as short path and the bi-directional pattern will be preferred.

Experimental Results

An antenna with the dimensions in Fig 2 was built and the measured SWR is shown in Fig 6. As expected, there are two resonances, giving acceptable SWR in both the CW and SSB DX windows.

The exact lengths for each wire will depend on the particular installation—the width and height available. If an antenna modeling program such as EZNEC², NEC/Wires³ or NEC-WIN⁴ is available, then the antenna can be designed very closely for a particular site, including the ground effects. If the modeling is not available, then it will be necessary to adjust the wire lengths experimentally. Fortunately, all of the adjustments can be made at ground level.

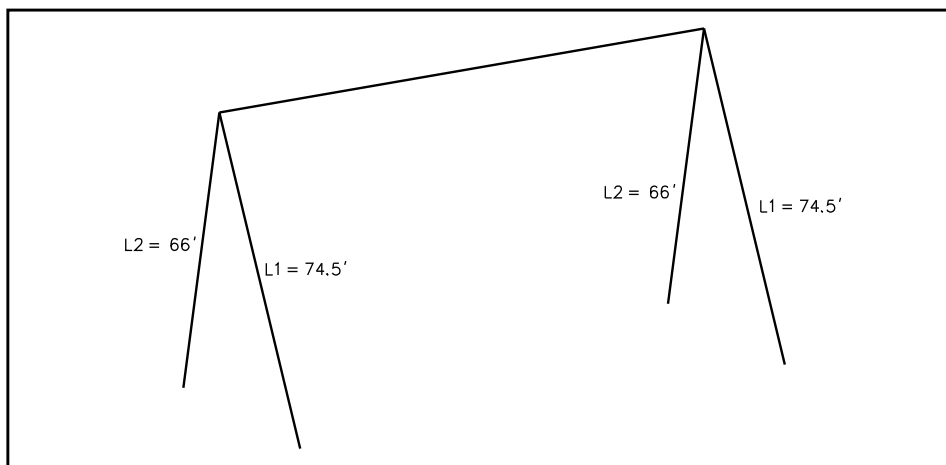


Fig 4—An asymmetrical variation of broadband half-square. Here, the equal-length vertical wires are placed on the same side of a vertical plane cutting through the length of the horizontal top wire.

The length of the top wire (L_T) is set during initial construction and can vary from 120 to 150 feet, depending on the space available. The longer lengths will mean that the vertical wires can be made shorter. This allows for lower heights. More detail of this trade-off can be found in Reference 1. There are three other variables: L_1 , L_2 and L_3 .

The adjustment begins by setting the spacing between the ends of the vertical wires (L_3), then L_3 is adjusted for resonance at 3.790 MHz. Finally, L_1 is adjusted to resonate at 3.510 MHz. L_2 and L_1 are then adjusted one more time. Usually this will be sufficient to place the resonances in the desired locations. If the SWR is not as low as desired, then L_3 can be changed and L_1 and L_2 readjusted. This process should converge rapidly.

Because L_1 and L_2 may need to be either shortened or lengthened, I usually start with extra wire and fold the excess length back on the wire, rather than cutting it off. That way, extra is available to lengthen the wire, if needed.

Conclusion

The narrow bandwidth of the classical half-square antenna can be overcome by adding another set of vertical wires. With a little adjustment, two resonances, with $SWR < 2:1$ can be achieved. This will allow operation in both the CW and SSB DX windows on 80 meters.

The principle shown here will, of course, also work on other bands. On 160 meters, for example, it would allow a substantial part of the band to be covered without retuning.

Notes and References

¹Severns, Rudy, N6LF, "Using the Half-Square Antenna for Low-Band DXing," elsewhere in this book.

²EZNEC is available from Roy Lewallen, W7EL, PO Box 6658, Beaverton, OR, 97007.

³NEC/Wires is available from Brian Beezley,

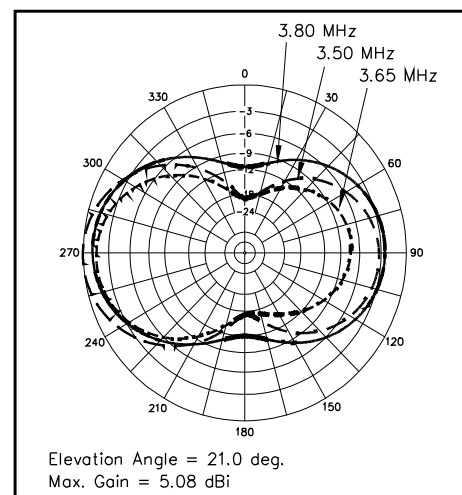


Fig 5—Azimuth response of asymmetrical broadband 80-meter half-square at 3.8, 3.65 and 3.5 MHz, showing how front-to-back ratio changes with frequency.

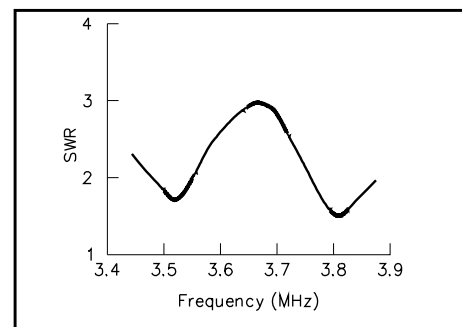


Fig 6—SWR curve versus frequency for symmetrical broadband 80-meter half-square showing characteristic double-resonance.

K6STI, 3532 Linda Vista Drive, San Marcos, CA 92069, 619-599-4962.

⁴NEC-WIN Basic is available from Paragon Technology, 200 Innovation Blvd, Suite 240, State College, PA 16803, 814-234-3335.

NOTICES

NZART "Wine Country Conference"

Hawkes Bay 2009



Please feel free to sent notices to john.newson@xtra.co.nz

Buy – Sell - Etc

For Sale

1. Yaesu FT 857-D and ALS-500 M Solid State Amp \$2000.00
2. Yaesu FT 101 & FT2100 B \$800.00
3. Heathkit SB-101 Transiver
SB-200 & Linear
SB- 640 Ext vfo
SB- 600 Power/spker
HO-10 Monitor scope
Sell complete \$1500.00
4. 15 mt 450 ohm ladder line Black \$150.00
5. 12 mt 450 ohm ladder line Black \$130.00
6. 50 mt home made spacings for 450 ohm line \$ 100.00
7. NL-77OR 144/430 MHz
Gain 3.0/5.5dB
Max Power 150 Watts
V.S.W.R. Less 1.5
Imp 50 Ohm
Connector UHF Type
New
\$75.00
8. Brand New 144 or 430 Hand helds \$165.00 programmed
9. Call sign Base Ball Caps as advertised in Break In \$26.00 Delivered

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