

# NEWSLETTER

MAY 2009 VOLUME 9, No. 5

Mercury Amateur Radio Association - MARA - North America - North East



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## OTHER STUFF

E-mail your comments, ideas, or submissions to [marane@mara.net](mailto:marane@mara.net)

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## VIEW FROM THE TOWER

Isn't it great to be alive! Isn't it great to be part of the great fraternal amateur radio community! It has certainly enriched my life with both casual and life-long relationships that would never have happened without the amateur radio catalyst. One of those families of long term relationships that has built many fond memories is that of the MARA Northeast and MARA Midwest groups. I have been participating in varying degrees since 1980 when I first checked into the MARA Midwest Net.

As May 30, 2009 approaches quickly, I personally invite each MARA NE member and prospective member alike to attend our annual meeting. Appreciation in advance is merited for the host and his spouse, Barry (N2PCT) and Sherry Smith (KB2YXI), who have graciously agreed to take care of the physical arrangements of this meeting. Dave (VE1VQ) has posted [information about the meeting](#) on the MARA NE website and has emailed all known members. Since I'm located south of the Mason-Dixon line, a hearty invitation of **you-all come** is given!! We're hoping that you will feel all that energy you normally send to your antenna at the meeting! See you there!!

Shirrel - N3DIX

## CRISIS IN SAMOA

December 7 - 19, 1991

by Reg Hardman VK4XH

This article was originally printed in the 14 April 1992 issue of Amateur Radio Action, an Australian amateur radio publication, no longer in operation. Different versions were also printed in QST (January 1993) and TCA - The Canadian Amateur (September 1992).

### CRISIS IN SAMOA

On December 7, 1991, Cyclone Val struck Samoa and, for a period of five days, pounded these islands with rain and winds which varied between 120 and 150 miles per hour (not km/hr!). By the end of this battering, 14 people had died (including three

Australians), many were injured, thousands more were homeless and many millions of dollars worth of damage had been done to public buildings such as hospitals, fire and police stations and churches.

To provide some comparison, Cyclone Tracy which caused so much damage in Darwin (Australia) on Christmas Day, 1974, was of a similar intensity but lasted only eight hours, whereas 'Val' continued its ferocity and destruction of Samoa for five days. During these five days of turmoil there was no electricity, no telephone communication outside the country, with the population confined to their homes which gradually disintegrated around their ears. Most of the population during this time did not have any hot food, lights, communication, sewerage, and could not go outside because of flying roofing iron and other debris which could cause death or serious injury.

And, for most of those five days, the only communication outside the country was via amateur radio, which provided health and welfare traffic for church groups, governments, disaster organizations, and individuals with specific problems. For a further eight days amateur radio operators helped provide communication links in the emergency rebuilding program until regular telephone and commercial channels were re-established.

### HOW DID IT ALL START?

On December 7, 1991, senior administrators of The Church of Jesus Christ of Latter-Day Saints contacted members of the Mercury Amateur Radio Association of Australia (MARA). Those operators included me, VK4XH; Neville, ZL1BJU; Bryant, VK2BWS; and Max, VK2CMT. Assistance was requested in contacting 5W1JL, the Church's club station in Apia, Samoa.



We were told that Cyclone Val had struck Samoa – the telephones had gone out, the power had been switched off and, from the strength of the initial winds (around 90-120 mph), it looked like it was going to be serious.

## DECEMBER 7

Coming up on 20 metres at 1300z we establish communications with operators Utai and Ed of 5W1JL (Samoa) with signals at S5 by 8 or 9 between Australia and Samoa. Good signals between New Zealand and Samoa are also established in short order. (Utai, who is a resident of Apia, Samoa, is a licensed operator with the club station call sign 5W1JL and works for The Church of Jesus Christ of Latter-Day Saints. Ed Bishop, from Utah, USA, who is in charge of welfare, also works for the Church).

The fury of the storm is related to the approximately eight net members from Australia and New Zealand who have gathered on the frequency. With Samoa being 22 hours behind Australian Eastern Daylight Savings Time [on the other side of the International Date Line - Ed] a roster is set up to monitor the frequency and learn of any changes. From the weather bureau at Nadi, Fiji (through a Japanese weather satellite) it is established that the cyclone is located some 40 miles north east of Savaii (Samoa's large island) travelling south-easterly at 10 mph with winds running at 90-120 mph).

Ed states that the local power has been switched off and they are operating from their emergency generator. Ed and Utai, incidentally, are operating a Kenwood TS-430S into a 3-element Tet-Emtron beam.

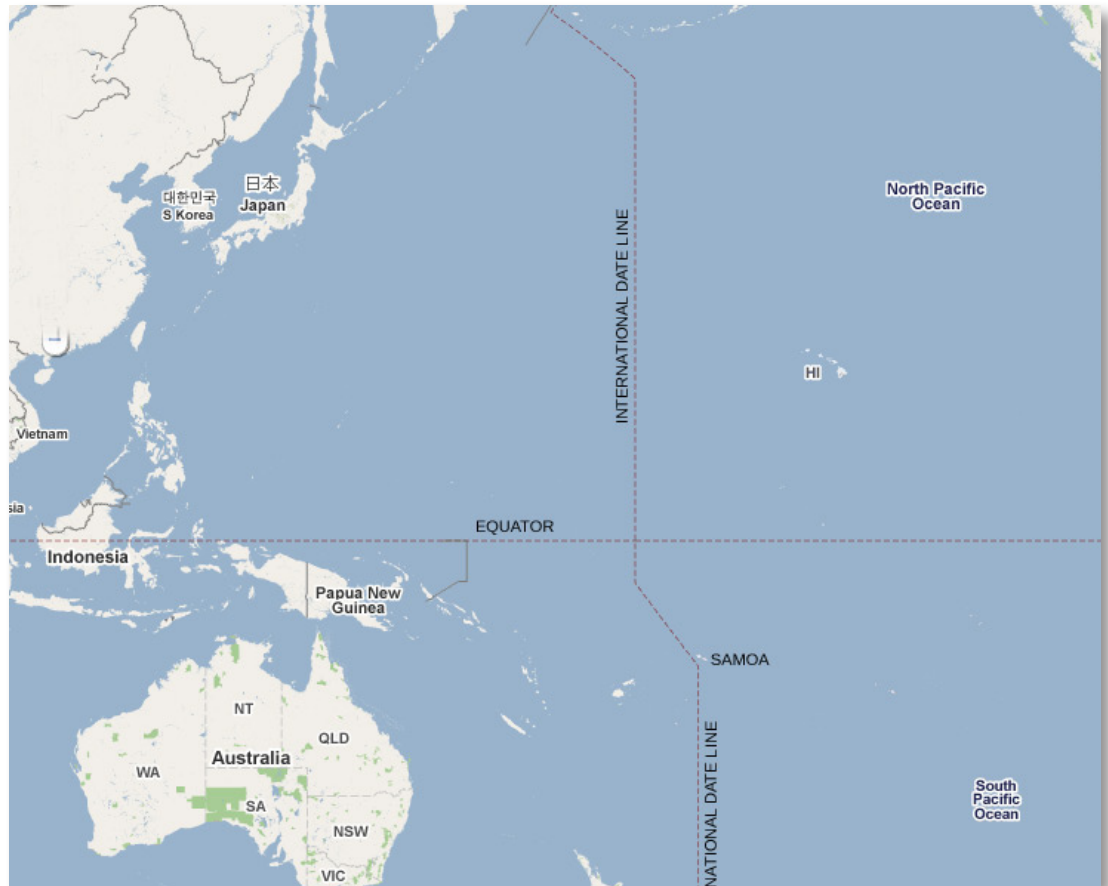
The situation begins to look a little grim. We sense the anxiety here as we roster our group to stay in touch with 5W1JL throughout the afternoon (the next five hours) as well as 1000z that night. Up to this point very little information is forthcoming so we arrange to make contact at 2000z next morning, December 8.

## DECEMBER 8

Utai and Ed come up on frequency at 2000z and report

that winds are between 90-120 mph with gusts of 150 mph. American Samoa is predicted to receive the full force of 'Val' at 0600z that night. At that stage, surprisingly little damage has been done to churches and public buildings. There is a lot of debris on the roads, particularly on the ocean front. People are staying indoors to avoid the flying missiles. The big island of Savaii has now been without power for 10 hours.

Utai and Ed are on emergency power and do not know when full power will be restored. Little do they know that it will be many days before full power can be rein-



stated. Telephones are breaking down and no aeroplanes are moving. Ed tries to call Australia by telephone but cannot get through. We relay the reports of conditions direct via phone to the church in Sydney and make arrangements at Ed's request to establish a routine of schedules at 0500z and 2000z each day until the emergency has passed.

At 0500z, 5W1JL reports a change in direction of the winds, saying American Samoa could miss most of the storm. A few reports of missing roofing iron start to come through but no major damage is reported. There is some major damage to the banana and breadfruit which is a part of the staple diet of Samoa. The people gather up the fruit as it falls – action taken from previ-

ous experience. It may be a long time before the next crop...

There are no reports of injuries, however there is still no telephone system operating and we will have to wait for information from Savaii – an increasing concern here. The power company, however, has managed to get power back to some points in Apia although Ed is still on emergency power. He refuels his generator twice during the day and acquires enough fuel for a further 14-15 hours of operation. We continue to pass our information direct via telephone to the church in Sydney which is still assessing the situation and preparing an appropriate response for when the danger has passed.

Next month - THINGS GET WORSE ...!

## CULTURED CORNER

by ANØNMS

### NEW RIG WOES

*A catalog came the other day  
It's enough to make one drool  
All those pictures of shiny new rigs  
With color displays so cool*

*More little knobs than one can use  
At least with fingers normal  
Changing frequencies is such a treat  
Near to cruel and unusual*

*The rigs themselves are oh so small  
How do you fix if it burns?  
Just box it up and send it away  
No telling when it will return*

*Oh for the days when tubes were king  
And the wires were far apart  
Easy to find the problem then  
My eyes could even see the parts*

## GRANDMA MARA'S CORNER



### NO SWEAT HERE!

**T**his idea should appeal to those of you who like home brewing things, and especially at this time of year - a radio controlled lawn mower!

I stumbled across the web site when searching for a manual for my old John Deere push mower. Looks like the kind of thing I could whip up from some of the stuff I've never thrown out around here.

A guy (I guess it's a guy!) by the name of Terry Greer constructed one out of a R/C receiver and controller, a wheelchair and , of course, a lawn mower. It even has a safety feature to shut things down in the event that the radio control signal is lost. You can find more information at <http://members.iinet.net.au/~tjnpshow/RCLM/intro.htm> If this link does not work from here, paste it into your browser.

The next step up are commercial robotic lawn mowers available for most any size lawn. According to the web site listed below, "government studies have shown that a gasoline powered lawn mower can belch out more emissions than a typical SUV. In addition, spillage of gasoline and improper motor oil disposal is in the millions of gallons every year. By comparison, robotic mowers run on electricity and most use about as much juice as a 100 watt light bulb. A larger unit, capable of handling more than five acres, will use about as much as a standard refrigerator."

Check this out at [www.greenviewblog.com/equipment/](http://www.greenviewblog.com/equipment/)

or GOOGLE 'robotic lawn mower'.

Now you can sit in the shade, with a pitcher of lemonade, and mow your lawn without even breaking up a sweat. Of course, some of us could probably use the exercise!

*Grandma Mara*

## TECH STUFF

by VE1VQ

### USING EZNEC ANTENNA SOFTWARE WITH A REAL ANTENNA

I'm fortunate living in a rural area in the southern end of Nova Scotia, a province known more for fishing and for tourism than for its heavy manufacturing industries. That means that there are no strange interfering noises anywhere nearby. I'm also fortunate that I have the space to erect wire antennas of most any practical size. Over the years I've had random wires, long wires, dipoles, inverted vees, and now - a loop.

Some years ago, thinking that bigger must be better, I put up a horizontal loop measuring a 1000 feet. Wondering why I didn't do as well as I thought I should, and having problems with matching, I resorted to what I should have done in the first place - let the computer do the work! What the antenna software told me was what I suspected from on-the-air results - in this case - bigger wasn't better!

My shack is at one end of a service bench (that now serves as storage area rather than for servicing) at the rear of my office. The building, a converted two car garage, backs on to what was at one time pasture land and wood lot.

Spending some quality time in the field behind the office with one of those wheel measuring things, otherwise known as a walking wheel measure, I plotted distances to various trees that I felt might make good support points. Then resorting to the old fashioned method of graph paper, pencil, ruler, and protractor, I laid out possible antenna and tree configurations to see how things would fit. Once I determined which trees would work out, I transferred measure-



ments from the graph paper to the computer. The nice thing about doing it on paper and in software is that you can move things around without all of the physical effort involved in hanging real wire. It also let me experiment with moving the feed point, although the real life connection point was largely set by the physical location of the shack and the two nearest support points. It worked out that the restriction was a serendipitous point in the final design, shifting the slight gain in radiation more to the southwest and the MARA NE net member's locations rather than straight to the south as it would have been if fed from the west corner.

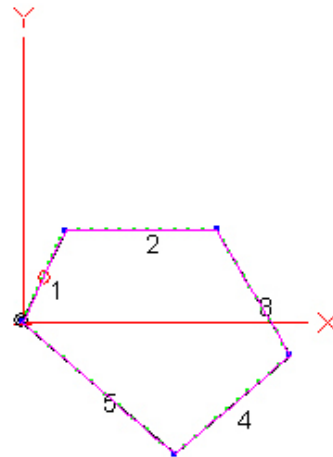


Figure 1 - Bird's eye view of the horizontal loop at VE1VQ as entered in EZNEC. The Y-axis is north-south, and the X-axis is east-west. The feed point is the small red circle just above and to the left of the #1.

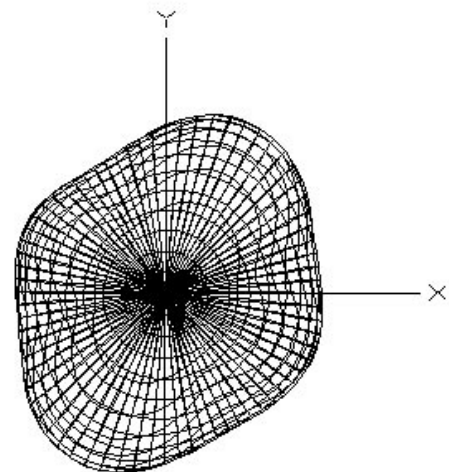


Figure 2 - A 3D RF pattern viewed from the top. Notice the shift of RF energy in the southwest direction.

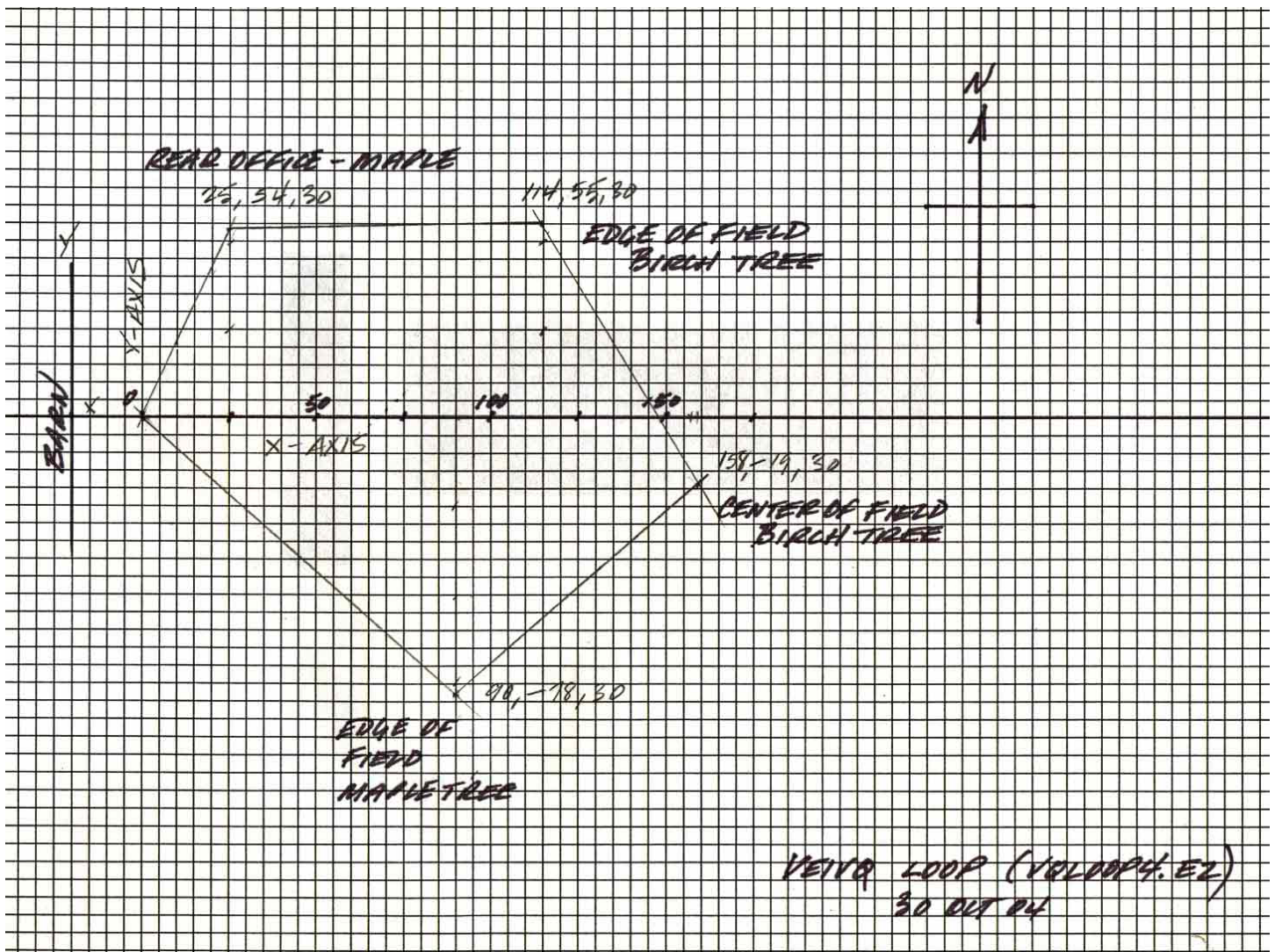


Figure 3 - Transfer of Wheel measurements of the loop antenna to graph paper. Zero is the antenna starting point on the x-axis to the right of the line representing the wall of the barn. The number sequences (e.g. '25, 54, 30') are the x, y & z coordinates from the zero point. Using that same number sequence would place the end of the first wire 25 feet along the x-axis to the right and 54 feet upwards along the y-axis. The number '30' would represent a height of 30 feet on the z-axis. Each number sequence is entered into EZNEC in turn until the loop is complete. The feed point is placed on the appropriate wire section, in this case the first one going from zero to the point represented by '25, 54, 30'.

I tried the demo version of EZNEC available at <http://www.eznec.com/demoinfo.htm> for this article before switching to the older (3.0) full version that I have. I kept getting warnings that the wires were too long for the maximum number of segments the demo program would allow. Bypassing the error message and comparing the results between the two showed less accuracy with the demo. The demo is fine for a dipole or end fed but doesn't like the many wires of the loop! The moral there is if you are doing any amount of experimenting with antennas, go for the gusto and spend the \$89US for the full version, downloadable from the web site.

Is this loop antenna the 'silver' or 'magic bullet' for all of your antenna troubles? Not really, but it works most times

for me. Over the years that I've been on the MARA NE Saturday morning net, week to week conditions have been better and they've been worse. Early on, I could hear but not easily be heard. Adding a linear helped. Changing from an end fed to a loop helped. Now, it seems that conditions are conspiring once again, and it is often difficult to break through the noise. Having operated from both KD1WZ's and N2PCT's locations, I have some understanding of the noise and interference problems that you folks deal with.

That's what makes amateur radio and experimenting with antennas so interesting!

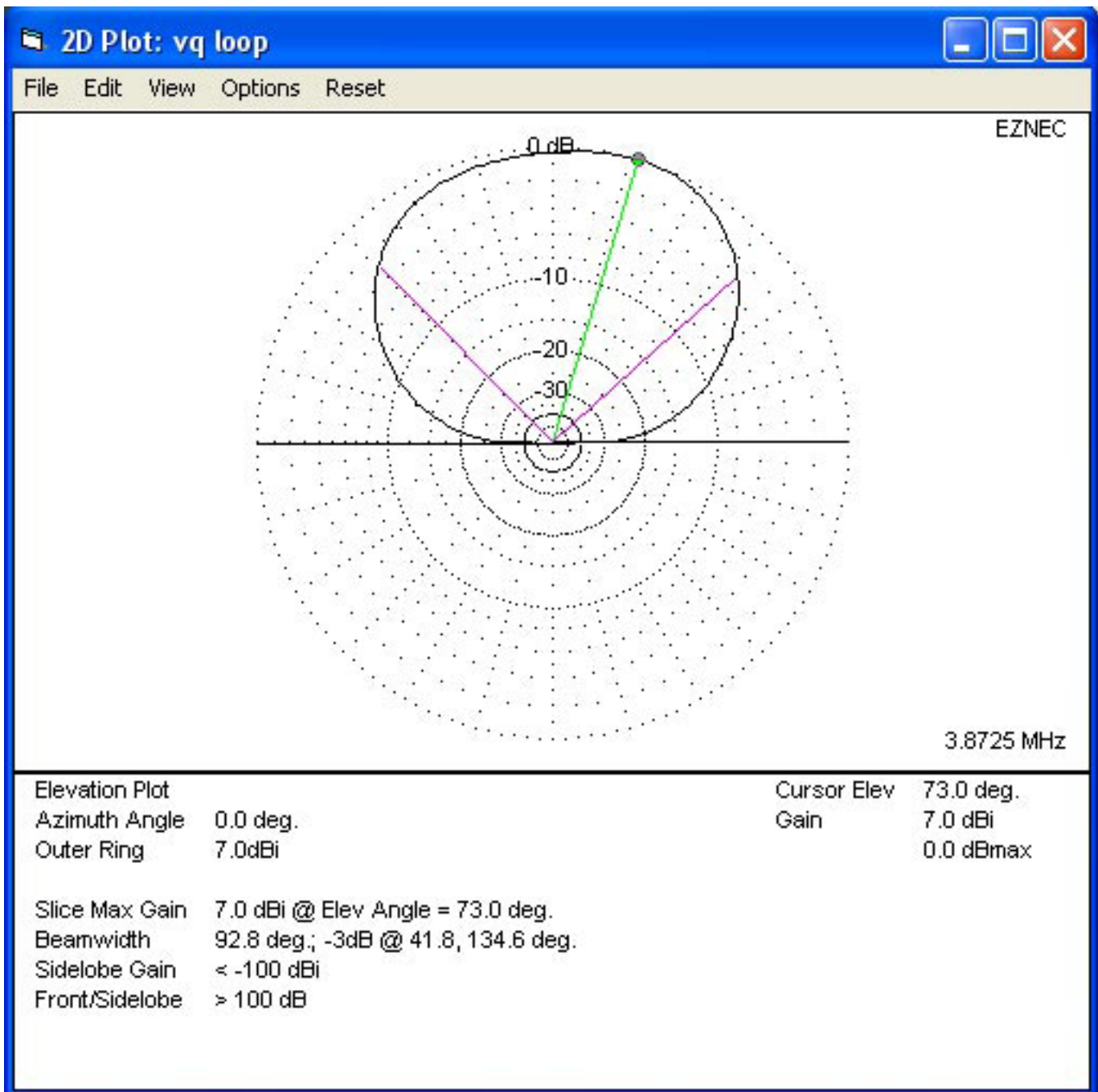


Figure 4 - Plot showing most of the RF energy going upwards. The height of the antenna in Figs. 1, 2 & 3 is thirty feet (on average) above ground. This is a typical height of a wire antenna using trees and/or buildings for support. The -3 db points (points where the radiated power is 50% of the maximum) are a little over 90 degrees apart. The frequency of operation is 3.8725 MHz making it, at thirty feet, about 12/100 wavelengths high. This is certainly not a DX antenna but fits the description of a fine NVIS cloud warmer.

The feedline is homebrew open wire line running about 50 feet to the rear of the office. (See the April 2008 newsletter at [http://ne.mara.net/pdf/newsletter/2008\\_news\\_apr.pdf](http://ne.mara.net/pdf/newsletter/2008_news_apr.pdf) for information on making your own feedline).

To properly view these EZNEC plots and charts, you may need to change the viewing size from 100% to something more or less until it is readable. They do not seem to re-size like other graphics.

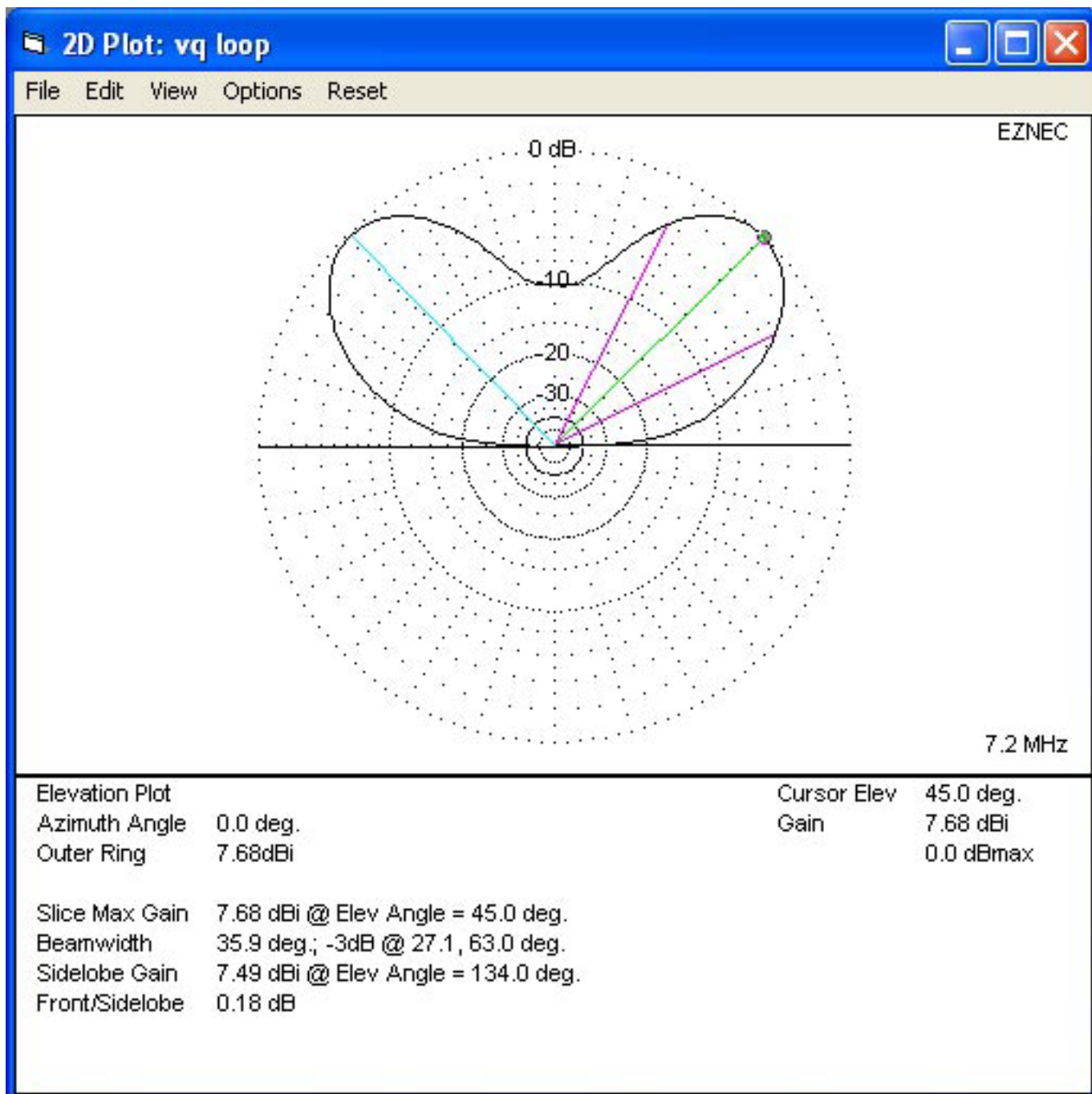


Figure 5 - Elevation plot at 7.2 MHz with all other factors the same as in Figure 3. Height is still at thirty feet. Notice that the pattern is breaking up into two lobes and the gain is now at a lower angle. Better for DX on 40M than NVIS.

**IN THE JUNE NEWSLETTER...**

**REPORT ON THE 2009 ANNUAL MEETING**

**CRISIS IN SAMOA - PART 2**



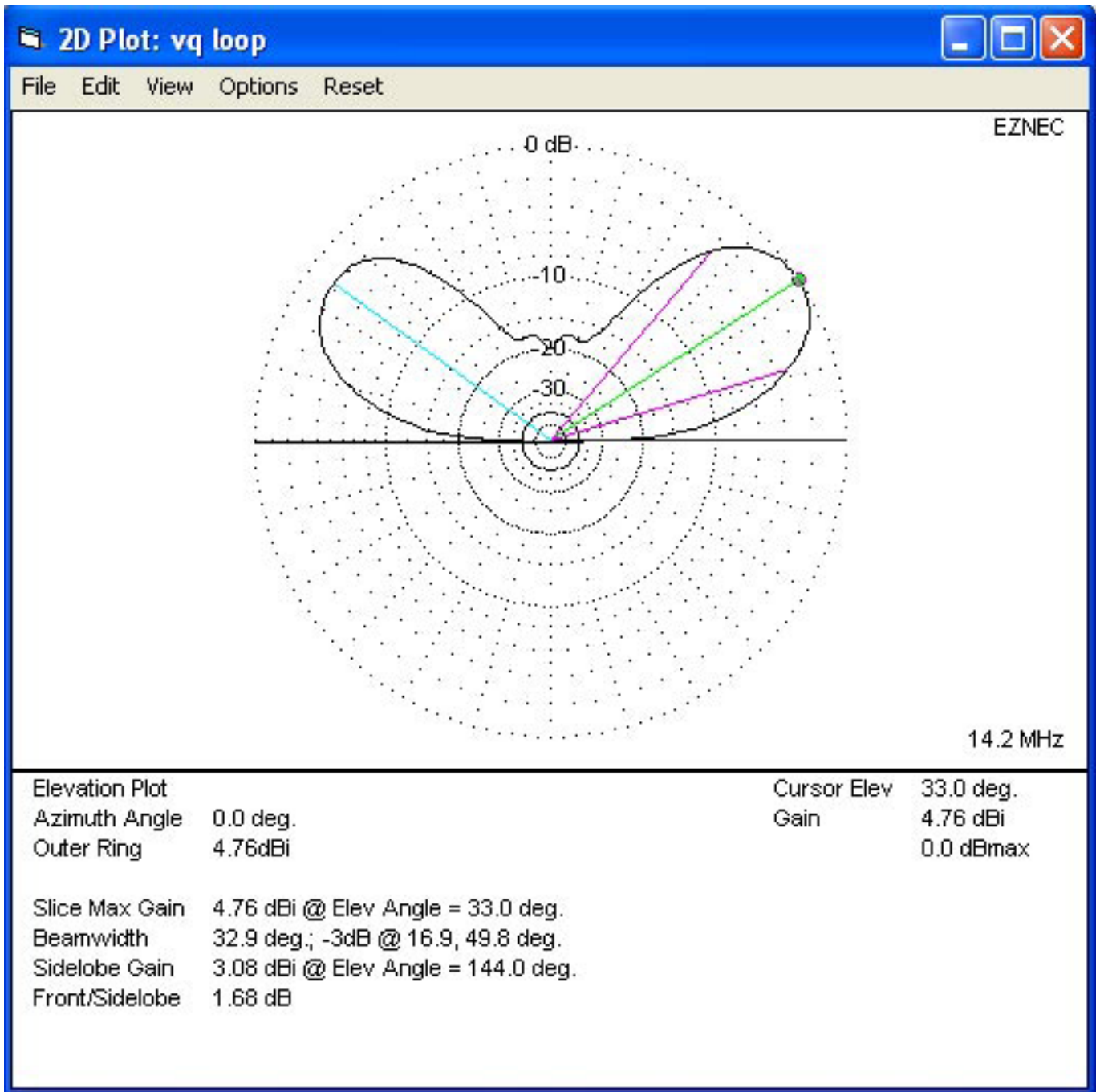


Figure 6 - Elevation plot once again but now at 14.2 MHz. Note that the angle of radiation is lower again than in the previous figure. Since 20M is an unsuitable band for NVIS we're now better off for DX operation.

**GET ON THE AIR FOR  
FIELD DAY 2009**

**ALWAYS THE FOURTH  
FULL WEEKEND IN JUNE**

**This year it's JUNE 27 - 28**

## FROM OUR READERS

**F**rom Steve Kelly, K2KEL, an e-mail with the following: *Our Stake President told me one Bishop in his Stake is doing the following:*

*The MLS (Member and Leader Services) in the ward or branch computer lets you assign a GEO CODE for each member which can be the town he resides in, or whatever you assign to it. After you give each member a GEO CODE in the MLS, you assign a Captain for each GEO CODE. When there is an emergency each captain will be the point man and will ascertain the conditions of the members in his GEO CODE and report. Each captain will have an up-to-date list of the GEO CODE's and members he has been assigned.*

*The printout they have lists the following columns:*

*Name of head of household  
Street address  
City  
Zip code  
Phone  
GEO code*

*It does not list the assigned captain.*

*That Bishop is using GEO CODE rather than home teaching lists because HT routes are not necessarily geographically assigned. Each Geo Zone will have a Ham Radio operator. You might like to propose this system to your Priesthood leaders.*

73 de Steve Kelly / K2KEL  
Regional EmComm Specialist

**D**an Goodson, NE3Z, in a recent e-mail, announced that he will be relocating to the Boston area, and will be replaced as the Washington DC Storehouse Emergency Communications Specialist by Frank Rogers, KB3PDT.

*“Frank has been manning the storehouse station for many months and has an impeccable attendance record with the church headquarters net! He lives close by the storehouse and has helped us numerous times in stake comm exercises and other propagation tests.*

*“Other than amateur radio, Frank enjoys photography, works at the Suitland Family History Center, the Temple,*

*has an interest in locksmithing, and has children all over the world (military).*

*“He has special ties to Wichita KS and Colorado Springs as well as the DC area where he and his wife of over 45 years have lived over 40 years. Frank worked professionally as an accountant.”*



**Welcome aboard Frank! (pictured in front with Christopher Burt KC7GWT on the right)**

**T**he following e-mail was received on April 9th, via Colin, W9UPK, from Grant KE8YG and his wife Pat, KB8TME, presently serving their mission in Germany. Some of you will know Grant from the MARA Midwest net and frequent call-ins to the Northeast net.

*Greetings to all!*

*We are doing very well and keep very busy. Grant is especially busy doing so much because he can speak, read and write the German language pretty well. He has been preparing many class lessons and giving seminar presentations in German. We are assigned to work with the Genealogical Societies here in Germany and try to get them to help us with Indexing, and reciprocal activities with them. We also have been doing presentations for stake groups and native German FamilySearch support missionaries.*

*It is great to be here and work with so many good*

people. We also get to rub shoulders with many well experienced senior missionaries and staff workers who help with the Frankfurt temple, the Europe Area authorities, the FamilySearch Support staff and missionaries, the German Mission leaders, the Europe Humanitarian leaders and the Europe Area distribution center. It is a huge church center of activity here so we have a lot of General Authorities and Church leaders coming through this area all the time.

However, the greatest thing of our mission is to be able to meet and work with the local German people. There are so many wonderful people here, members and non-members alike that are very interesting and enlightening to know. We enjoy our mission and are happy to be able to serve the Lord through serving his children.



Of all the things we miss, aside from missing our family, we miss not being involved in Amateur Radio. We couldn't bring any of our radio equipment with us. It was very hard to store all that away and not be able to use it for TWO long years. But, we are willing to make the sacrifice. Maybe on some missions having a handi-talkie might be a helpful tool. However, it is not needed here, and in order to use ham radio privileges in Germany, after ninety days we have to pay a huge amount of money to get a license to use the radio. We will just have to pass that opportunity this time.

73s to all,

Grant KE8YG & Pat KB8TME

You can read about their mission at <http://www.gshowlett.blogspot.com>

## SWAP SHOP

List your items you wish to buy, sell, trade, or give away at "no charge"!

## DI-DAH-DI-DAH-DIT

### JUST LIKE HENRY...

A quote attributed to Henry Ford reads as follows, "Failure is simply the opportunity to begin again, this time more intelligently". This is certainly applicable to antenna building and experimentation.

The humble dipole has been around for a good number of years and still there continues to be many construction articles, probably more than any other radiator configuration, in the ham magazines and on-line publications, each and every year. How many words need to be penned about a couple pieces of wire, three insulators and a feed line? Lots, it would seem!

How many times haven't we cut the wire length exactly to what the formulas and our calculators instruct us, and haul the contraption up into the air, only to have our SWR meters tell us that we have to shorten or lengthen the conductors to make it resonant and our transmitter happy?

One reason why the ability to make changes comes in so handy when working on dipoles is all of the variables which affect the resonance point of the antenna (frequency at which it is solely resistive, neither inductive nor capacitive). We have the length of the wire and to a lesser extent the diameter of the conductor, the height above ground, type of ground (wet, dry, mineral content), and nearby conductive objects (metal roof, sap or not in tree limbs, rain in the air, leaves in the summer/none in the winter, and house interior/exterior wiring). Is it any wonder why it's so difficult to have it work right the first time?

Sometimes we give up (vowing to take up something less frustrating - like Sudoku!), perhaps from a lack of knowledge about how to fix the problem, or how to use the test equipment (SWR meter/bridge) to make corrections. Sometimes we seek to learn from our failure; we may search the Internet to find an answer to our problem, or we might ask someone with more experience for help.

If we choose to learn, we can gain in understanding and profit from our mistakes.

Just like Henry!

Until next month,  
VE1VQ