

MERCURY AMATEUR RADIO ASSOCIATION

MARA - NORTH AMERICA - NORTHEAST



NEWSLETTER

OCTOBER 2008

VOLUME 8, No. 9

CONTENTS

VIEW FROM THE TOP	2
ADVENTURES OF A NEW HAM	2
- PART 1 – BRUCE - N3IA	
ANTENNA ADVENTURES	4
CULTURED CORNER	7
GRANDMA MARA'S CORNER	7
- SELFISH HAM HUSBAND	
More trouble!	
TECH STUFF	8
- ARE WE THERE YET – PART 3	
GETTING YOUR ANTENNA	
UP IN THE AIR – <i>ka-fhoomp!</i>	
SWAP SHOP	10

DI-DAH-DI-DAH-DIT 10

E-mail your comments, ideas, or submissions to marane@mara.net

Material contained in this newsletter is copyrighted © by the Mercury Amateur Radio Association – North East, or by the person noted, No part of this may be reproduced in whole or in part without the written permission of the MARA NE or the individual so noted.

VIEW FROM THE TOP

Too much haze and stuff in the air to see anything from the top of the tower this month!



ADVENTURES OF A NEW HAM

N3IA - Bruce

PART 1

Prolog

I suppose I was destined to become a HAM; an operator on the amateur radio bands. While in high school I only had a couple of strengths: basically technical things and geometry. As it were, the geometry teacher ran the school amateur radio club, which included an HF radio shack: WB2NVE. I was thrilled with operators making phone contacts on 20 meters, but distractions like A/V, girls, early computer programming, girls, and chorus; not to mention having to learn Morse Code were sufficient to overcome my interest. Being accepted to the engineering program at Trenton State College, as miraculous as that seems now, was to again

Distractions like... girls... not to mention having to learn Morse code were sufficient to overcome my interest.

provide a HAM opportunity. My department chair was a HAM, as were several of my classmates. The college's radio shack was in the building and area I took most of my classes. However after the first semester, I found the college FM radio station, WTSR, and it became my major for the next 7 semesters, the method of introduction to my wife, and almost my undoing. I got my 3rd Class Radio Telephone license that second semester, and by the end of my junior year I had my 1st Class License and was the first student Chief Engineer to be

licensed to do the transmitter work. I started working part time for the State Public Television network the winter of my senior year. I managed to squeak through engineering and graduate.

I had many encounters with the HAMs in my area of study. I did some tower work for friends, as I had taken some training in rock climbing one summer, and was not un-comfortable with heights. I was privileged to be invited to my professor's home one evening and assist him (mostly on-looking) as he worked far off continents via moon-bounce (now EME) using the 15 foot dish in his back yard. He went on to be the first HAM to work all continents EME.

The fall after I graduated, I hired on full time at New Jersey Public Broadcasting as a transmitter technician; a position my college department head thought was beneath both me, and his program's graduates. I moved up through positions in engineering at NJPBA and after about 9 years moved over to Information Technology. I still worked with a lot of HAMs at the TV station, but never "got around to it" myself.

The Spark

It was the end of my junior year at Trenton when I met my wife Cheri, and was introduced to the Church. Through the years after our Temple marriage in 1977, I served in many callings in the ward and stake. And so it was I was on the High Council in 2006. Early that year the Stake

It was the end of my junior year at Trenton when I met my wife Cheri, and was introduced to the Church.

President received a letter for the church headquarters requesting stakes organize Amateur Radio operators in their stakes to provide communication in the event of an emergency. After more than one request of the High Council, I volunteered as one who could take it on. I began studying that summer and discovered that the material for Technician Class license was familiar enough that I looked at the

General Class material and decided I could probably do both at the same time. In November of 2006 I took elements 2 and 3 and passed both. I was a Technician, having not been prepared to attempt the 5 words per minute code test at that time. I had begun to find the local HAM clubs and listen on my scanner to some of the local repeaters and was very pleased to find a local net which ran every night. I had also begun looking at radios and antennas.

On the return trip from the Temple in Washington the Friday following my license exam, I stopped at HRO in Delaware to “look” at radio equipment. My wife has learned since how to translate that word when used in a HAM context. I knew I wanted an all-mode

I, of course, discussed the purchase with my wife, who remained in the car.

HF/VHF/UHF radio which I could use for base and mobile/field. I was impressed with both the Icom 706MKIIG and the Yaesu 857D, but when I had to choose. I could not justify the extra expense for the Icom. I, of course, discussed the purchase with my wife, who remained in the car, and she acquiesced to the purchase. A thousand dollars later I was on my way home with radio and a mag-mount antenna for VHF/UHF operation, a used 300 watt tuner, and software/computer cable to program the radio. I went to Radio Shack for a 25 amp power supply the next day. The following Tuesday my name and new call sign appeared in the FCC database and I spent an hour or more learning to front panel program the first repeater; learning about offsets and PL tones and writing to memories. I then made my first contact; a college classmate of mine, N2HX, whom I had told I was getting my license.

Deep and Wide

Off and running! Now it certainly helped a lot to have some money to get started with as I know it has been a struggle for many entering the HAM community. But this comes with a drawback; it is very easy to work beyond your knowledge and get in trouble - but more about that later. I began to consider what I wanted to be able to do and what I wanted to be prepared for. Even though the announcement had been made that the code requirement was being dropped, I went and passed my element one exam and earned my General. I got my best operator practice on the Nightly Pepper Net on the DVRA 146.67 repeater. I also began to find out about other modes and opportunities in HAM radio. I experimented with PSK31 and other digital modes, HAM satellites, IRLP, and Echolink. I've seen demonstrations of APRS, and SSTV and I'm sure a few others I have forgotten. I've spent hours researching batteries, solar cells, and various antennas for emergency operations. Surfing eBay for used radios (a fruitless effort I've determined) I did buy a Yaesu VX-6R so I would have something other than the full featured, does it all, radio, and access to the State EOC 220MHz repeater. I also used it for a while in the car, but got frustrated with the limiting 5 watts. I joined several HAM clubs for personal development and to have access to them as a resource for training our expanding stake operator pool. This left me out several nights a month at the various meetings, and then service activities, not to mention my wife's complaint that I would disappear into my study (she says cave) and spend the entire evening on the radio. Actually, more of the time was spent on the Internet researching and reading than on the air, but boy did things get interesting when I started to interfere with proper operation of household devices.

TO BE CONTINUED...



ANTENNA ADVENTURES

RAISING ANTENNAS – OTHER IDEAS

Long ago, when I used to pull telephone and the early CATV cables on a college campus, we once used a bow and arrow to pull cable across the ceiling of a warehouse-type building. The principles are the same, but here is how the "old" cable pullers would accomplish the same thing.

At an electrical supply house, you can purchase what we called a "Wire Dart" - very fine, but very strong string in a small bundle covered with a waxy substance. Maybe 4" x 1/2"? It pays out the string with little to no resistance. We would use wire darts to run an initial line when fishing out a conduit, then use that to pull stronger twine ("Jet Line"), then use that to pull rope. Then use the rope to pull in the cables we wanted using a "come-along" (essentially a Chinese finger trick with a loop on the end) and a run of Jet Line in case we wanted to pull more cables later.

When we used the bow and arrow, we taped the wire dart to the shaft of the arrow. We had to experiment a few times to figure out where on the shaft to tape it so it would fly more or less straight. We were able to run cables across the top of this warehouse structure in half the time without having to rent a bucket lift. We discovered that even with the almost no resistance wire dart, there was still the drag of having a line attached that would significantly change the arc of the arrow, so we had to experiment. It didn't take long to figure it out.

Bryan Williams
NIUYI

My progression in the use of projectile antenna erection systems has been incremental over the years. While living in NC, AZ and TX traditional erection techniques were used - e.g. climb the tree; place a pole on the roof, etc.

After moving to an apartment in Northern Virginia in 1979 I found an inside dipole in my ground floor apartment did not work all that well. Sensing the need for a better radiator I decided to try the building gutter downspout. It was not bonded very well and even with an antenna tuner it seemed that unexpected spurs were everywhere with anything over 1 watt. Not wanting to give up the scheming ways of post adolescence, I soon devised the idea of hanging a wire from the gutter on the 4th floor to the ground just outside my bedroom window.

One evening after sunset I sneaked outside the patio with a carefully engineered antenna erector kit. It consisted of a "SUPER BALL" which had a hole drilled through it, a spool of monofilament fishing line and lots of enthusiasm. Outside I proceeded to twirl the Super Ball around. After several revolutions it seemed the ball had sufficient velocity to make the trip upward to the roof. The objective was to get the ball on the roof, have it roll into the gutter and then with the fish line coach the ball over to the down spout. The ball would descend the downspout pulling the fishing line with it. This would provide a pull line to stretch a wire to the roof on the building which I felt would make a nice vertical.

I quickly realized that I should have practiced a few times before actually going operational in my attempt to erect the wire. Fortunately no one questioned me but it was still awkward. On the fifth attempt it seemed I was on the edge of achieving my goal. The Super Ball was streaking in a circle around my hand and upon what I felt was the maximum achievable velocity I released the fishing line once again. Oddly the line went limp instead of taking off furiously behind the ball. For a second I was confused but suddenly was startled by a loud thud. Several more thumps and a final ka-ching! I had not checked the knot on the fishing line since initially preparing it. It detached during the last revolution and the ball, and true to the laws of physics, left the orbit around my hand as planned but without the fishing line attached. The sounds heard were the ball impacting the balcony ceiling of the resident on the fourth

floor, the rebound from the ceiling and the balcony concrete floor repetitively until it stopped. As luck would work out, the resident on the fourth floor had a barbecue grill and that was the last stop of the Super Ball, or in a word the ka-ching sound. As I slinked inside the apartment I heard the fourth floor resident ask his guest "What the %@)(was that?" The guest was heard to say "I don't know but get it out fast!" I gave up on the vertical and resumed using the indoor dipole.

A few years later after moving to my first single family home, the antenna itch returned in earnest and I decided to erect a real dipole. Unfortunately the XYL was not thrilled about the prospect of having wire in the air, thus with great reluctance a compromise was reached. Only trees would be used as supports. Since the trees were not over 25 feet high it would have to be a low dipole.

The days of climbing trees were waning. Also the small trees were not up to supporting my growing body mass. With those boundary conditions the next step was to select a method to get the pull strings for the end supports of the dipole into place. Since the Super Ball fiasco the thought of using that technique had fallen into disfavor. Another more promising technique was using a "Wrist Rocket". A Wrist Rocket is simply a childhood slingshot on steroids and able to propel more mass at a higher velocity for a longer distance. Using a two ounce lead weight (sinker for fishing line - I have a fishing tackle fetish! OK!) I was able to make short work of getting the pull lines up. The second went well until I walked around the cedar tree and found a sheriff's deputy. He had spotted me while on patrol and of course was curious why a 40 something male was running around shooting things into the sky. He was more than moderately disturbed that he had an older male running around like some sort of displaced aborigine and was definitely convinced my use of the Wrist Rocket was at least immoral if not illegal. I finally escaped with a warning to not use the Wrist Rocket in any place I would not use a handgun. At least the pull lines were up.

Some years after that the XYL decided that her pet ham and his nest of short pieces of wire, festively colored components and various RF parts was no longer cute and he had devolved into the evil twin brother of Satan. It soon became obvious that not only was I at risk but the beloved ham gear was also. In an effort to protect one of the few pleasures left I moved the station to my Father's QTH in North Carolina. Now in one respect there was new found bliss as the yard contained loblolly pine trees towering over 100 feet. Antenna NIRVANA!

I immediately set out to erect a dipole. The wrist rocket just did not have the needed steam. It could carry the weight to about 30 feet with the fishing line attached. The lower tree limbs were at about 60 feet. Realizing that I needed a little more ooomph, a bow and arrow was selected to pull the line. A quick trip to the local Wal-Mart provided the bow and a half dozen arrows.. Dad lives outside the city limits and even in the suburbs one can shoot a gun provided the direction of fire is away from dwellings and the path does not have a building in the line of fire for 1000 feet. Still I would not fire a weapon such as a rifle or handgun in the area even though the area behind Dad's house is open farmland. Shooting an arrow over a tall pine did not worry me given the openness of the lots in the surrounding community.

A few trials with the bow behind the house towards the open field provided a quick sanity check and high confidence that the fish line could be easily shot over the tree. Murphy though is a party crasher and he did not disappoint.

The first couple of shots resulted in the line going over tree limbs at the lowest level but out towards the end of the limbs rather than near the trunk of the tree. The third shot the arrow stuck in the tree limb. It penetrated deep enough that pulling on the monofilament line snapped the line. The arrow was stuck in the tree limb were it still remains. After losing four arrows, terrorizing the birds and putting on a display for the neighbors I finally managed to get the fish line up for each end of the dipole. Using the fish

line, I pulled up weed eater cord which has served me well as support tethers for dipoles.

I still walk out into Dad's yard and look up at the arrows stuck in the tree limbs with various lengths of monofilament attached. The birds are using scraps of monofilament in their nests, and the neighbors, well they watch me carefully. Life is such fun. :-)

Chuck
WD4HXG

I have never used a bow/arrow but something that I have used is a lead weight, about the size of a golf ball painted bright orange. You attach a light line to it and throw it up into the tree. The weight is heavy enough and being round causes it to just crash down to earth. Works really well and you don't get arrested for having a weapon in a park or forest.

Dave
KD7UM

Not having any sky hooks in our yard, I resorted to trees instead. We have many tall trees above and to the side of our house. A 160 meter full wave loop is some 500 plus feet if I remember correctly.

Debbie, aka KE3FY, my spouse owns a compound bow and various arrows. I used an arrow and wound some twine around the shaft in such a way that it might unwind when I would shoot it into the air into the tree tops. I used fluorescent pink twine, it is what we had, and came in handy when trying to find where it went.

So I tried many times but eventually managed to get the twine high up in the trees. I used the twine to pull up some heavier plastic clothes line, and then was able to pull up the wires.

I had 4 pieces of # 12 magnet wire, and soldered lugs on the ends. I used a nut and screw and

connected the 4 pieces of the loop and pulled the wires as high as I was able. The resulting loop of wire was terminated with an impedance transfer device, and a lightning arrestor. The wire leaned on branches, and was far from ideal. The woods are fairly dense with big trees. Even so, I was able to load the 160 meter loop on many different bands with the Icom IC-737 antenna tuner. I believe 80 meters was not one of them. I also had an inverted V on 75-80 meters.

I recall the antenna was good on 29.6 FM; I was able to work 7-land easily. (Notwithstanding my 7 call here in 3-land!)

Jeff
AI7D/3

It has been years since I did it, but it is important to realize that if the arrow gets loose it will go a long way and it can really hurt someone. We used "flu-flu" arrows (i.e. the ones you shoot birds with because when they slow down a bit they almost stop and drop out of the sky).

I now use a sling shot and sinker to put up the first string which is a piece of string from the hardware store as it is light enough to shoot up 40 or 50 feet and strong enough to pull up an antenna (not to mention cheap enough to throw pieces away when they got caught in the tree). You need the larger sinkers that surf casters use unless you want to use something lighter like fishing line to pull up the string.

Stan
N3HS



CULTURED CORNER

SIGNAL DOMINATION

(FIRST THE NET - THEN THE WORLD!)

*I have a great desire
To make a signal strong
High over the noise level
Above the transmitting throng.*

*Higher than Dan or Shirrel
More than N-2-P-C-T
This is my desire but
So far it eludeth me!*

*My dipole has gone higher
More power do I create
And still no one can hear me
I wonder if it is fate*

*If only I had some space
Where I could hang more wire
Then I could blow out speakers
And achieve my great desire*

Anonymous MARA member



GRANDMA MARA'S CORNER

Grandma's attempt last month at marriage counseling backfires...

Dear Grandma Mara,

Oh Grandma, the situation here has gone from bad to worse! I took your advice and talked with my husband about my feelings concerning his station equipment and antenna. Now he is threatening to sell his transceiver and linear amplifier and switch to QRP! I haven't dared to tell any of my family or my friends! I'd just die if anyone found out!

He says he is so stressed out by all of my expectations that he has to "find himself". Something to do with "going back to the basics", whatever that means!

Can you give me the name of a good ham marriage counselor?

Signed,
Desperate XYL

Grandma replies...

Dear Desperate,

Oh my goodness gracious! This is more serious than I imagined! QRP! Why just the thought of it gives Grandma the shivers!


I called my doctor friend, the one who writes "The Doctor is In" column at QST Magazine, to see if he could help. He advised Grandma to stick with technical questions like he does, or better yet stay with recipes and floral arrangement tips. As you can see dear, he wasn't much help in solving your problem.

Grandma has noted that male hams, like boys in general, go through phases and I think your husband is simply going through one of those. He will eventually work his way through it. In the meantime, if he likes to build his own equipment show him your love and support, at this extremely trying time, by buying him one of the many QRP kits that are available. An easy transmitter kit to start with, that even Grandma could build, is the "[Two Tinned Tuna Kit](#)" and the companion receiver from the Maine QRP Group. Medium difficulty level transceiver kits from [Small Wonder Labs](#) are well designed and well supported by Dave Benson, K1SWL. Once your hubby has these under his belt, give him a greater challenge with one of the [Elecraft transceiver kits](#). You know what they say about idle hands!

Never mind what your family or friends may say. Hold your head high and tell them that your husband is looking for more of a challenge than using a gazillawatt rig just to talk across town.

Think of him as a pioneer, because QRP is now considered by some to be “cool”! For inspiration, when things seem hopeless to you, listen to Tammy Wynette sing “[Stand By Your Man](#)” on YouTube. (The hairdo alone gives Grandma more shivers than thinking about QRP. And that dress...! Whatever was that girl thinking?)

Let me know how things work out for you.

Signed,


OH0H4



MARK IT ON YOUR CALENDARS

May 2nd 2009 for the MARA NorthEast Annual Meeting at Nazareth Ward, Scranton PA Stake

TECH STUFF

VE1VQ - Dave

ARE WE THERE YET? - GETTING YOUR ANTENNA UP IN THE AIR – PART 3

TENNIS BALL LAUNCHERS

If you are **really** serious about stringing antenna support lines, have really tall trees, or have a dog that needs exercise, here’s just the thing for you – a pneumatic powered tennis ball/antenna launcher. Depending on the design

and the amount of air pressure used, a tennis ball may be driven several hundred feet straight up. A tree that high is truly an awesome antenna support!

Safety is another factor for using an air powered launcher. A tennis ball is a lot kinder and gentler coming down on your head than is a lead sinker or a pointed arrow.

The safest way to power these devices is by compressed air. A high pressure hand pump will do the job and provide some upper body exercise at the same time. An easier way, for those exercise-challenged people among us, is to use an air compressor powered by 120 VAC, or if you are at a remote site, a 12 volt compressor powered from the vehicle cigarette lighter.

Stay away from any design powered by hair spray, rubbing alcohol, propane or any other flammable propellants. In my opinion these are an accident waiting to happen. The compressed air units are typically built using schedule 40

Stay away from any design ... powered by flammable propellants.

PVC pipe and the amount of air required to lift a tennis ball over most any tree is within the pipe’s safety limits. Be aware that this pipe is intended for fluids, not compressed air, so you are on your own. In other words, you can’t sue the manufacturer, this newsletter, or me if anything bad should happen.

Launchers are simply made with a barrel, an air tank (reservoir), and a trigger mechanism.

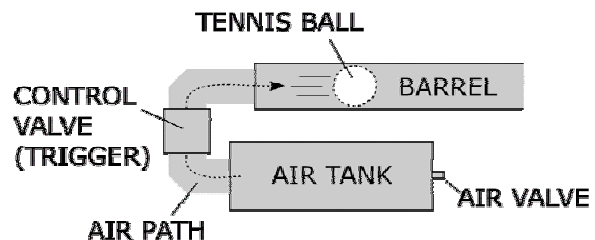


Figure 1 – Basic pneumatic launcher.

In operation, the tennis ball is pushed into the barrel providing a seal. Air is pumped into the air tank. The barrel is pointed in the desired direction and the trigger is depressed. The trigger activates the control valve releasing air from the tank into the barrel, rapidly forcing the ball out.

Triggers for the control valve are either electrically or air powered, with the latter having the edge in performance. The faster you can move air from the tank to the barrel behind the ball with the greatest volume (within the safety limits of the pipe), the faster the ball will move out. Electrically triggered valves tend to be slower opening, letting the air bleed through at a slower rate to start. Air operated valves open more quickly producing a higher initial air flow. These valves were originally intended as electrically controlled sprinkler valves and have to be modified for air control.

Make sure that the pipe you use is free of defects inside and out. Discard any that might be suspect. Use the correct cleaner and cement as

Make sure the pipe you use is free of defects inside and out.

recommended by the pipe manufacturer. Let the cement set for sufficient time before applying any pressure. Twenty four hours is a good amount – glue the parts, put them aside, and come back to do the next assembly step a day later.

It wouldn't be a bad idea if for the first few test shots you wrapped an old pair of jeans over the tank and barrel, just to be on the safe side. Always be careful in handling the unit and avoid dropping it while under pressure. Treat it like a weapon and never point it at a person (or the neighbours irritating little yappy dog!).

I've been looking for parts in all of the home improvement stores I can find as I travel but no one seems to stock the valves or the correct sizes of pipe so I haven't yet constructed one of my own. It looks like I'll have to order the parts from on-line.

One web site with good background, design, and construction information is

<http://www.antennalaunchers.com>

From the same site, [a physically smaller design](#) (See Figure 2 below) with HeathKit-like construction instructions for a very nice looking launcher. This is the one I'm hoping to construct someday. They even have an on-line catalogue and ordering page for kits and material.



Figure 2 – CSV-19 antenna launcher from the [antennalaunchers.com](http://www.antennalaunchers.com) web site. This unit uses an air activated valve and has an archery fishing reel attached (shown at the top right of the picture).

Another site with a similar design is <http://www.qsl.net/k5lxp/projects/Launcher/Launcher.html>

One with a smaller physical design is <http://www.antennalaunchers.com/qev19.html>

If you decide to build your own from scratch there's even a [You-Tube video about modifying a sprinkler valve](#) for pneumatic (faster acting) actuation.

For those of you with exceptionally tall trees, here is a site dedicated to the power of positive thinking (or something else of an unmentionable mental nature)! Click on the picture (Figure 4) for a link to the website.



Figure 3 – The caption from the spudtech.com website reads, “Above is a picture of the massive custom air cannon that was built for the US Dept. of Agriculture a few years back. It’s a tornado simulator designed to fire a 12 foot long, 15 pound 2 x 4 at a wall at 100 MPH.”

Whatever method you use to hang your antenna, remember the ways that I have briefly shown in the last three columns are not toys! Use them with care and always, always wear safety glasses and follow safe working procedures.



THINK SAFE. ACT SAFE. BE SAFE

CHECK EQUIPMENT BEFORE USE.
ALWAYS WEAR EYE PROTECTION.

SWAP SHOP
 BUY – SELL – TRADE - GIVE AWAY

YOUR AD HERE – NO CHARGE!

DI-DAH-DI-DAH-DIT

I was in one of my periodic “clean-the-shack” moments last month. What that means is that I was looking for something and it wasn’t in plain sight so I had to dig deeper in the many layers of accumulated “stuff”. I have all of these circuit boards from defunct alarm panels kicking around in cardboard boxes, saving them for parts, for “someday” projects. In a fit of

generosity (weakness) I made a phone call to another ham in the area to see if anyone around would like some of my junk for their own building purposes. Turns out that no one (not a single person!) in the local ham community is building anything anymore! When did this happen? Used to be that most of the hams I knew tinkered with this or that project. Not any more it seems.

Even though it hurt I got rid of some of my junk box collection.

I found out that the local recycler (new age term for junk collector) takes old computers and TV sets and stuff like that, so I gathered together a sampling of my treasures and made an exploratory run. Found out they’ll take anything that looks electronics-ish. Got rid of some old fire alarm panels, some printers, and a couple of Windows 95 era PCs. Freed up some floor space that I hadn’t seen in quite some time. Gave me a real feeling of accomplishment. Kind of nice to know I have room for something else now.

Until next month,
 VE1VQ



IN NOVEMBER’S NEWSLETTER ...
ADVENTURES OF A NEW HAM - PART 2