
**The Central Texas Amateur Radio Club
meets the first Tuesday of each month at 7:00 PM at the
Bell County Communications Center, 798 West Avenue O, in Belton**

President's Corner

Kenneth Watkins, KE5ISN



CTARC expresses its' condolences to Gene {K5KFH} and Tammy Mikeska on the loss of their son Joe. Our thoughts and prayers are with you.

On March 2nd, 1836, while the Alamo was under siege, 54 delegates elected one month earlier from each of the settlements of Texas, met at the village of Washington-on-the-Brazos. With very little time to accomplish its mission, delegates of the convention wrote and adopted the Texas Declaration of Independence, prepared a Constitution for the newly formed Republic, and organized an *an interim* government.

Four days later on March 6th, the Alamo fell.



Convention of 1836 at Washington-on-the-Brazos

In observance of Texas Independence Day, many State offices will be closed so you may want to plan any of your activities around this.

Bell County Skywarn was on February 12th and we had a chance to visit with many of you while in Belton. If you could not attend, you missed a very good program. Mark Fox {N5WTT} and staff from the NWS Fort Worth Office have revamped their program and you should try to attend next year.

Storm season is upon us. Be sure to check your batteries, radios, (HT and weather) and any other personal items that you may use in storm spotting. Remember to listen on the repeater before keying up as there may be a weather net in progress. More information on CTARC Weather Nets is contained further on in this edition of the newsletter.

New Member Welcome

CTARC would like to welcome Drew Dickenson - KE5UBO, as CTARC's newest club member. Be sure to say hello to him if you hear him on the air.

Have fun in March and go fly a kite.

73 de KE5ISN



Skywarn Training



Bosque County: (*Basic Spotter Training Only*) Tuesday, March 29th, 7:00 – 9:00 PM at the Clifton Civic Center, 403 West 3rd Street in Clifton.

Lampasas County: (*Basic Spotter Training Only*) Monday, March 7th, 7:00 – 9:00 PM in the County Annex Building, 409 South Pecan Street, in Lampasas.

McLennan County: (*Basic and Advanced Training*) Saturday, March 19, 9:00 AM – 3:30 PM at the Emergency Services Education Center, 7601 Steinbeck Bend Road, in Waco.

Mills County: (*Basic Spotter Training Only*) Tuesday, March 8th, 7:00 – 9:00 PM, at the Goldthwaite Volunteer Fire Dept., 806 East Fourth Street East, in Goldthwaite.



Texas Severe Storms Association National Storm Conference

Saturday, March 12th, 9:00 AM to 5:00 PM at the Colleyville Center, 5301 Riverwalk Drive, in Colleyville. For more information on this training session visit: <http://www.tessa.org/index.html>

Skywarn Training Material:



Basic Spotters Field Guide
http://www.srh.noaa.gov/images/fwd/pdf/broch_basic_spotter.pdf



Advanced Spotters Field Guide
http://www.srh.noaa.gov/images/fwd/pdf/broch_adv_spotter.pdf



South Central Texas Skywarn Spotter Manual
<http://www.utexas.edu/depts/grg/kimmel/SCTXSkywarnManual.pdf>



The Central Texas Amateur Radio Net meets every Thursday at 8:00 PM on the W5BEC repeater, on 147.140(+) PL 123.0 Join Us!

March NCS & Back-Up NCS Schedule:

March 3rd:
Net Control: KE5ISN
Back-Up: K6WXA

March 10th:
AD5SK
K6WXA

March 17th:
Net Control: K6WXA
Back-Up: KF5LNX

March 24th:
KF5LNX
AD5SK

March 31st:
Net Control: AD5SK
Back-Up: KE5ISN



Texas Independence Day



ARRL International DX Contest

Contest period runs from 0001Z March 5th to, 2400Z March 6th on 160, 80, 40, 20, 15 and 10 Meters SSB phone.

For more information, please visit: <http://www.arrl.org/arrl-dx>



PRESIDENT TO TAKE PART IN FCC APPROVED EAS TEST

Bruce Tennant, K6PZW



The President of the United States will soon be taking part in a national test of the Emergency Alert System.

The Federal Communications Commission has taken the necessary action help pave the way for the first-ever Presidential alert to be aired across the United States on the Nation's Emergency Alert System. This as the regulatory agency voted on February 3rd to adopt a Third Report and Order that sets forth rules that will facilitate the federal government's efforts to conduct a national E-A-S test by transmitting a Presidential Alert from Washington, D.C. to television and radio broadcasters, cable systems and satellite service providers who will then deliver the alert to the American public.

The national test will require EAS participants to be part of the exercise and to receive and transmit a live code that includes a Presidential alert message to their respective viewers and listeners. The FCC, FEMA and the National Weather Service, in coordination with E-A-S participants, will work together to launch a nationwide public education and awareness campaign. This will include press statements, workshops, regional outreach, and television and radio public service announcements. All will be targeted to consumers in general, and more specifically to persons with

disabilities and seniors, as well as first responders and state, local and tribal governments. The outreach will help ensure that the American public is aware that the national test will be conducted and the benefits of these kinds of public alerts in a real emergency.

The FCC adds that the national test will also help determine the reliability of the Emergency Alert System and its effectiveness in notifying the public of emergencies and potential danger, both nationwide and regionally.

Educational Opportunities



This past month FEMA introduced one new course to its' independent study program: *IS-27 Orientation to FEMA Logistics*.

For a complete list of all the courses offered by FEMA, please visit:

<http://training.fema.gov/IS/crslist.asp>

Strays



W5UN 32-Element "Can You Hear Me Now?" 2 Meter Earth-Moon-Earth Mega Array. Mount Pleasant, TX

"All new states are invested, more or less, by a class of noisy, second-rate men who are always in favor of rash and extreme measures, but Texas was absolutely over-run by such men."

- Sam Houston



Vernal Equinox

Punxsutawney Phil in his Groundhog's Day prediction last month may have forecasted six more weeks of winter; or an early spring. Either way, the "Vernal Equinox" or March equinox will occur on March 20th, marking the first day of spring in the northern hemisphere from an astronomical viewpoint. The equinox will occur at 23:21 UTC, or 5:21 PM, Central Standard Time.

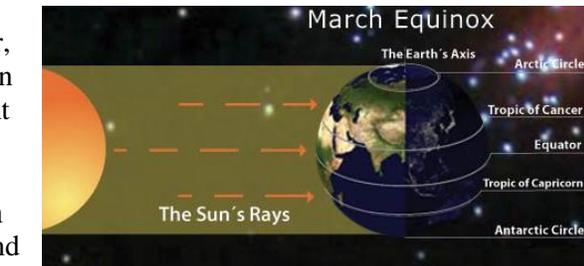
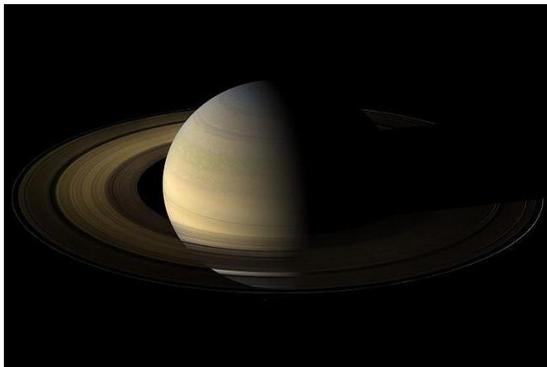
Twice a year, around March 20th or 21st and September 22nd or 23rd the sun shines directly on the equator and the length of day and night are nearly equal in all parts of the world. These two days are known as the March (vernal or spring) equinox and the September (autumnal or fall) equinox, in the northern hemisphere.

The word "equinox" is derived from the Latin words *aequus* (equal) and *nox* (night). Together, "equal night" and refers to the time when the sun crosses the equator. At such times, day and night are of nearly equal length everywhere in the world.

On a day of the equinox, the center of the Sun spends a roughly equal amount of time above and

below the horizon at every location on the Earth, night and day being of roughly the same length. During this period, the tilt of the Earth's axis is inclined neither away from nor towards the Sun; the center of the Sun being in the same plane as the Earth's equator.

One effect of equinoctial periods is the temporary disruption of communications satellites. For all geostationary satellites, there are a few days around the equinox when the sun goes directly behind the satellite relative to Earth (i.e. within the beam-width of the ground station antenna) for a short period each day. The Sun's immense power and broad radiation spectrum overload the Earth station's reception circuits with noise and, depending on antenna size and other factors, temporarily disrupt or degrade the circuit. The duration of those effects varies but can range from a few minutes to an hour.



Equinox is a phenomenon that can occur on any planet with a significant tilt to its rotational axis. Most dramatic of these is Saturn, where the equinox places its normally majestic ring system edge-on facing the Sun. As a result, they are visible only as a thin line when seen from Earth. When seen from above — a view seen by humans during an equinox for the first time from the *Cassini* space probe in 2009 — they receive very little sunshine, indeed more planet shine than light from the Sun.

This lack of sunshine occurs once every 14 years, 266 days, and can last a few weeks before and after the exact equinox. The most recent equinox for Saturn was on August 11th, 2009. Its next equinox will take place on April 30th, 2024.

CTARC Weather Nets

With storm season quickly approaching, I thought it appropriate to re-visit the basic operating guidelines of our CTARC Weather Nets and to list the back-up frequencies of where to tune to in the event a weather system takes out a particular repeater or repeaters.

The CTARC Weather Net provides information to the National Weather Service Regional Office located in Fort Worth and various local authorities. Our goal is to help protect the people of Central Texas and provide ground truth data to the National Weather Service.

Operational Guidelines:

Standby Mode - The repeater is free for use. However, a CTARC Weather Net Control Operator will be standing by for any severe weather reports.

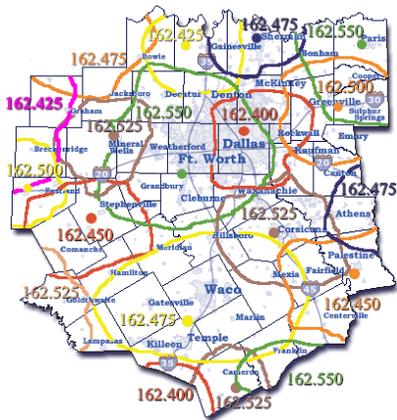
Active Mode - The repeater is under the control of the Net Control operator. All traffic should be directed through the NCS operator. Severe weather is occurring within our coverage area.

Emergency Mode - The repeater is under the control of the Net Control operator. All traffic is restricted to emergency traffic only. Extremely severe weather is occurring within our coverage area.



Weather Net Frequencies:

Primary Repeater W5BEC	147.140 MHz(+) PL Tone 123.0
Secondary Repeater N5ZXJ	145.310 MHz(-) PL Tone 123.0
Alternate Repeater Lampasas KB5SXV	147.220 MHz(+) PL Tone 88.5
Alternate Repeater McLennan W5ZDN	145.150 MHz(-) PL Tone 123.0
Alternate Repeater Milam KE5URD	147.020 MHz(+) PL Tone 123.0
Alternate Repeater Bosque W5BCR	147.180 MHz(+) PL Tone 123.0
Alternate Repeater Coryell N5DDR	146.960 MHz(-) No PL Tone
CTARC Simplex Frequency	147.555 MHz

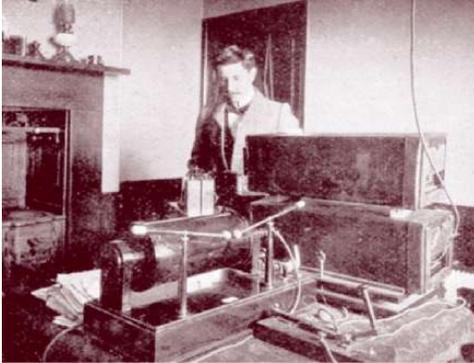


Another good idea is to program in to your scanner or memory channel in your HT, the frequency of the nearest NOAA Weather Radio transmitter in your area.

The graphic at left, illustrates the North Central Texas area and respective transmitter frequency coverage area. While several NOAA transmitters may be easily heard, for most of us, the principal frequency to tune to for our area is **162.475**.

The First Use of Wireless as an Aid in Distress

By the last years of the 19th Century the Corporation of Trinity House had long needed some system of signaling with their off-shore establishments. Two methods had been tried and found lacking. The first was by cable connections but these were under a constant strain when the lightships were anchored in open sea and frequently came into contact with the hawsers of the vessels. The second was the Post Office inductive system and this also proved unsatisfactory. So seeing an opportunity Marconi's Company offered ship-to-shore demonstrations by wireless telegraphy.



Marconi's apparatus at the South Foreland Lighthouse

could not be heard on land. However, in this case the signals were heard by the East Goodwin Lightship. It communicated by wireless telegraphy to the South Foreland Lighthouse and from there telegraphic messages were sent to the authorities. The lifeboats at Ramsgate, Deal, and Kingsdown were not launched but they were all standing by. As it happened the 'Elbe' was able to re-float eight hours later with the assistance of boatmen and with the tug 'Shamrock' in attendance. But it was the first occasion in the history of the world in which lifeboats had been alerted by the means of wireless.

By a strange coincidence the East Goodwin Lightship was itself involved in a collision at sea with a steamer, the 'R.E. Matthews', 1,964 tons, out of London, sailing from the Tyne with coal for Genoa. It happened shortly after the 'Elbe' incident on the 28th April 1899 and use of wireless helped to avert a situation that might have involved the loss of life. On the day in question there was very dense fog in the Channel.

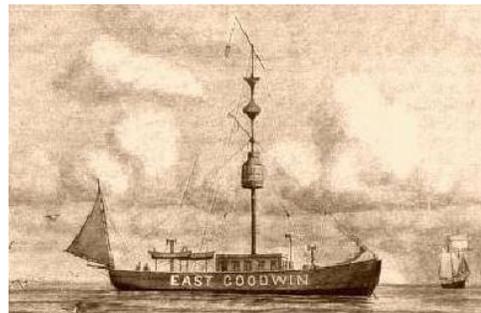
Capt. Clayson was asked if he had had any difficulty in getting communication with the South Foreland

Lighthouse after the accident happened. He replied: *"I had not the slightest trouble. The collision occurred at half past eight. I called the South Foreland up about two minutes after the steamer got clear of us, and while she was still standing by: and I got the reply immediately from Mr. Bullocke, to whom I telegraphed briefly the particulars of the collision."*

Although the lifeboats were not needed, the wireless link with the shore had enabled the Trinity House rescue ship to set out much more quickly than would otherwise have been the case. The significance and immense importance of what happened did not escape the people involved at the time. Here was a system that enabled a vessel in distress to communicate with the shore. At that time messages could only cover a short distance but as a naval correspondent then wrote about the future of wireless in 'The Morning Post', *"...its potentialities are infinite, but in regard to long distances it still remains to translate these potentialities into definite facts."*

The installations were completed in December 1898 and two-way communications established on Christmas Eve.

On Saturday the 11th of March, 1899, the first practical use of this link between the East Goodwin Lightship and the South Foreland Lighthouse was made. The occasion was a ship going aground. The three-masted sailing ship 'Elbe' went ashore on the Goodwin Sands at 2 in the morning, a thick fog prevailing at the time. The South Goodwin Lightship fired signals. It often happened that when the wind was blowing off-shore the signal guns of the lightships



End of an Era

“You’re listening to the World Service of the BBC. This is London.” Many of us got our interest in amateur radio as a result of listening in to shortwave radio broadcasts. One of the “big guns” on shortwave is the British Broadcasting Corporation; better known as the BBC.

The BBC and the British government traded blows over who was to blame for the cuts outlined at the BBC World Service last week, the global impact of the biggest single change in the broadcaster’s 79-year history was only just beginning to sink in.

The axing of five foreign language services and wholesale retreat from shortwave radio – including the end of broadcasts to India, Russia and China – will lead to the loss of more than 30 million listeners, a sixth of the World Service’s global audience of 180 million, the BBC estimates. The five language services being shut down – Portuguese for Africa, Caribbean English, Macedonian, Serbian and Albanian – have a combined audience of 3.4 million.



The changes mean the World Service is likely to be overtaken by the *Voice of America*, established in 1942 and funded by the U.S. government, as the world’s leading global news broadcaster. The World Service’s former managing director, Sir John Tusa, said its rival had “always been regarded as a vastly inferior international broadcaster”.

The scaling back follows a 16% cut in the World Service’s funding by the Foreign

Office, with the BBC looking to make £46m of savings a year by 2014. Some 650 jobs will go out of a World Service staff of 2,400.

The axing of Portuguese for Africa will be a major setback to people living under repressive regimes, experts say. Without this information, people will be limited to what the government provides. The only media that covers the whole country is state media – and it’s not just state controlled, it’s ruling party controlled. Portuguese for Africa was launched in 1939. Radio is very influential in parts of Africa where television and internet access are scarce.

The editor of the Mozambique Political Process Bulletin, criticized Britain for squandering an opportunity. “If you’re going to have a serious foreign policy you should concentrate on what you’re good at, and in Britain’s case that’s the BBC.”

The closure of three Balkan language services has stirred nostalgic regret and a sense of abandonment in the region. Respect in Serbia for the BBC’s objective reporting, which blossomed during the Nazi occupation and matured under communism, survived even the bombing of the country by British aircraft in the Kosovo war.

Radio listeners and media organizations across the Caribbean mourned this week’s announcement that the BBC’s Caribbean service will be cut, silencing a source of news and information valued for decades.

Its loss will be keenly felt.

The Interesting History and Roles of HAM Radio Operators

Jim "Pappy" Moore, The Gilmer Mirror

HAM radio is one of those things I've known about all my life, but never known very much. My first recollections are the mid 1960s in East Texas, when old high school friend Phil Huber was a ham radio operator. He had his call numbers on the back of his car, so that other ham radio operators could contact him.

Gordon Reynolds {K5KYN}, a reader from the area, is a long-time ham radio operator. Gordon has been a ham radio aficionado since the 1950s. He is a walking history of ham radio, and has provided me with many insights about the topic for this column.

Do you know where the HAM radio name originated? Three amateurs in the Harvard Radio Club in 1908 decided they would use the initials for their three last names to name their station: Hyman, Almy and Murray were their names. They had found tapping out such a long station call sign in Morris Code soon caused fatigue, so they selected the first letter of each last name and used it as their call letters. Thus began HAM radio.

When other forms of communication fail, ham radio operators provide long distance communication. When the Y2K scare happened and there were great fears of massive outages due to the rollover at the year 2000, ham radio operators were standing by to provide emergency communications for first responders, should the worst happen.

During all kinds of large emergencies ham radio operators provide communications where there would be little or none available, otherwise. From earthquake torn regions, to massive flooding, to out of control forest fires, to national disasters of every sort, ham radio operators provide badly needed communications. When cell phones and land lines are down, when Internet access is down or not available, ham radio operators fill the breach and provide emergency communications to victims, to first responders, and to the world.

Why do ham radio operators do it? Gordon's comment seems to answer that well: "The thrill of ham radio is sitting in a comfortable chair in front of a black box with lights, switches, buttons, knobs — and with the use of a microphone I can go anywhere without leaving home. I can have a conversation with fellow ham operators around the world, and even out of this world occasionally — such as with the International Space Station."

According to the FCC, there are over 700,000 ham radio operators in the USA. Added to that number are many more from around the globe. I asked Gordon about government regulation of ham operators. He replied, "The FCC governs and provides rules and regulations for all hams to follow and gives ham operators the opportunity to perform electronic experiments over selected frequencies for research in developing new communication technologies. Ham operators can build transceivers and put them on the air without special requirements, other than a current amateur radio license."

We tend to forget that cell phones only work when their towers are close by, when support facilities in the region are working, and when communication systems have not been shut down by disaster. Ham radio operators are there to get word into and out of these areas cut off from the world of standard communications. They support our fire fighters, our emergency medical personnel, our police, our disaster relief teams and the victims.

When everything else has failed, ham radio will ride to your rescue.

HamEXPO!



Sponsored by the Temple Amateur Radio Club -W5LM, the *Belton Hamfest* returns to the Bell County Exposition Center in Belton, **Saturday, April 2nd** from 7:00 AM to 2:00 PM.

Getting there is easy; from U.S. Highway 190 take the exit for Loop 121 and follow the signs to the Exposition Center. Plenty of free parking!

Talk-in frequency is 146.820(-) PL 123, and call for W5LM.

General admission for the public is \$5.00 at the door. Admission price includes one free raffle ticket for various door prizes raffled off during the event. Winners must be present to collect their winnings.

For more information, please visit:

<http://www.tarc.org/hamexpo>



Ham Expo Amateur Radio Test Session

In conjunction with the HamExpo, amateur radio tests will be given at the Belton Police Station, sponsored by the Central Texas Amateur Radio Club.

The police station is located at 2nd and Birdwell (about a block west of the Belton Burger King hamburger joint). The testing will begin at 11:00 AM and end when all applicants have been tested, usually around 1:00 PM.

Since the test session is in conjunction with the very popular Ham Expo, we expect between 25 and 50 people taking the tests. This requires at least 10 Volunteer Examiners to properly staff the event. The VE's participating should be on site by 10:30. Both General and Extra VE's are needed since all test levels are being made available.

Directions from the Bell County Expo Center: turn right as you leave the Expo Center and take IH-35 North – you can stay along the frontage road – then take exit 294A to Central Avenue. Then turn one block west (left) to Birdwell, then two blocks north (right) to the Belton Municipal Courts and Police building located at Second and Birdwell.

This is a 'Ham Community' effort and all area VE's are needed and most welcome to participate. If you will be able to participate, please send an email to Joe Dorn - W5VEX, at: w5vex@arrl.net, or you can contact him by phone at (254) 939-5918 or (254) 721-0829.

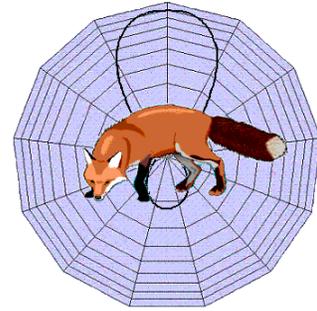
People taking the test do not need to register before hand, just show up at test time. A photo ID and one other form of ID is required. The test fee is \$15.00.



After the Fox!

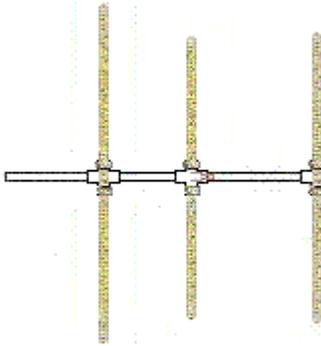
Rick Murray, K6WXA

Sometimes it's good to talk about projects that one has undertaken that have failed miserably. Not to bash a design or the project designer, but rather, to take away from the failed endeavor, a learning experience, in what could have been done better. And, as we'll see, what was done to make a total failure a successful antenna project.



Part 1 – *If it could go wrong, it did...*

This antenna design evolved during a search by Joe Leggio – WB2HOL, for a beam antenna with a good front-to-back ratio to use in hidden transmitter hunts and RDF use. His design goals were that the antenna had to be easy to get in and out of a car; be made of easily obtainable materials; be constructed using only simple hand tools; perform well and be able to survive what he called “yagi eating trees.”



His solution was the construction of a three-element yagi made from elements of one-inch steel tape measure, mounted to a half-inch PVC boom with the use of a half-inch PVC “T” and crosses. The elements themselves would be secured in place through the use of hose clamps.

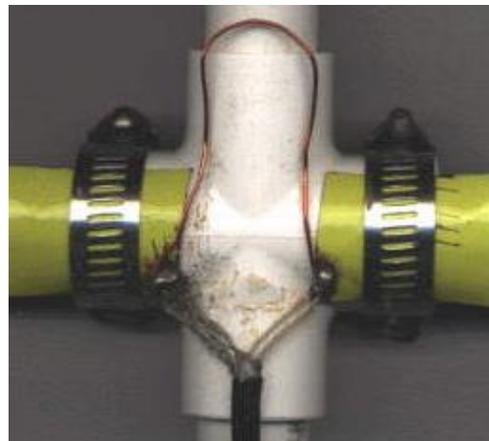
Then to achieve a deep-notch in the rear pattern, the elements would be less than optimally spaced.

His design looked intriguing – *and really different* – so I carefully duplicated his plans in assembling my own.

Before I begin with what transpired, I should mention that Mr. Leggio used a computer aided design program (*...his first mistake...*) in coming up with the design of his antenna. The YagiCAD program indicated that the antenna would have a VSWR of less than 2:1 across the entire 2 Meter band along with 7.3 dBd of forward gain. Mr. Leggio also stated in his original write-up of this antenna, that he did not possess the test equipment to verify those YagiCAD predictions.

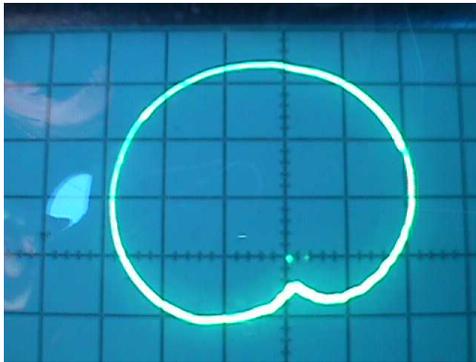
After assembling the PVC fittings and attaching the elements, came the feedpoints. Mr. Leggio in his design, used RG-58 coax and directly fed the coax to the feedpoints of the driven elements using a 5 inch length of 18 gauge solid copper wire as a hair-pin tuning loop.

My next step was to drill a ¼” hole in the PVC boom between the driven elements and the reflector, to run the coax out the back of the antenna. Strictly for neatness.



I need to mention that interesting things happen if you try to drill a ¼” hole through ½” PVC, using a ¼” drill bit... the PVC has a tendency to explode in your face. *Really!* Luckily I was wearing safety glasses. After making the necessary repairs, it was on to set-up and testing.

The first thing you notice when handling this antenna, is that it just doesn't “feel” right. For one, since the boom is made from ½” PVC, it has an uncomfortable fit in the palm of your hand. Secondly, the hand grip portion of the boom in back of the reflector, being straight, is very uncomfortable in the wrist. There's no way one could spend a “pleasant” afternoon wielding this thing around and not get a sore wrist.



As to the technical aspects, the radiation pattern of the antenna with it's less than optimally spaced elements, did produce the desired rear deep-notch Mr. Leggio was looking for.

But the VSWR was off the scale. Using an antenna analyzer, it was found that the antenna had a perfect 1:1 match at 162.400 MHz – nearly 16 MHz off from the desired frequency, and the promised 7.3 dBd of gain the antenna was suppose to have, resulted in a finding of only 5 dBd of gain. Herein the design of the antenna itself was to blame for the loss in gain.

One might logically say that this antenna is designed for listening and not transmitting, therefore there should be no issue with VSWR or forward gain. To take this approach is to miss the point; if you're going to build an antenna, build it right.

The last negative aspect noticed of this antenna, was that in even a light wind, the elements would flap around uncontrollably, rendering the whole direction-finding purpose of the antenna useless.

Unhappy with all the results noted, the antenna was trashed.

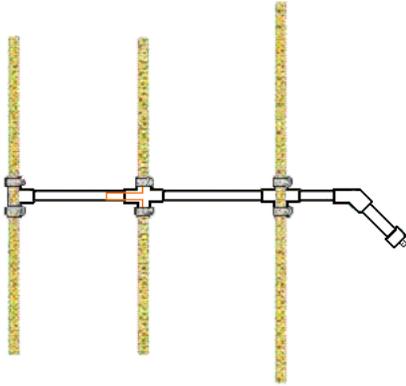
Part 2 – Starting over...

This time the boom assembly was made from ¾” PVC and associated ¾” PVC “T” and crosses. And this time, the elements would be spaced further apart at a more optimal distance. At the back of the antenna, a 45° PVC elbow was added along with a 7” section of ¾” PVC to act as a “pistol grip” type hand grip. This gave the whole assembly a much more comfortable feel in both the hand as well as the wrist.

To cure the “flapping” issue of the elements in the wind, each element was made from double lengths of the one-inch steel tape measure, soldering each end for electrical continuity.

The next modification was in feeding the antenna. In Mr. Leggio's design, he directly fed the coax feedline to the feedpoints of the driven elements through a 5” wire tuning loop. In effect, he was attempting to feed what he believed was a balanced antenna to an unbalanced feedline. To correct this, a 4:1 coaxial balun was constructed and then attached to the feedpoints through a 6-1/2” wire tuning loop made from #10 solid copper wire.





Next I again, drilled a ¼” hole in the boom between the driven elements and the reflector for the feedline coming off the balun, to pass inside the PVC piping. My next step – *and you might want to pass on this as it’s a real pain to do* – was to mount a BNC post to a ¾” PVC cap which I placed on the end of the handgrip. The feedline would then terminate at the BNC post inside the PVC cap. *This is not a real easy soldering job to accomplish!*

In a perfect world, a 3-element yagi should produce 7 dBd of forward gain. Most home-made antennas don’t end up with “perfect world” results. Set up and testing of this antenna found it to have 6 dBd of forward gain, with a front to back ratio of 22 dBd. VSWR results found a constant VSWR of 1.2:1 from 145 to 147 MHz, and a VSWR of no higher than 1.4:1 across the entire 2 Meter band.

The final product is near to what Mr. Leggio was looking for... it’s light weight, easy to assemble, all parts necessary are readily available at your local home improvement store, it’s inexpensive to make, performs well and is virtually indestructible against yagi eating trees. Another aspect with this antenna, is that the aerials can be folded with the ends placed in the openings of the PVC joints for easy storage.

With the modifications made, you can utilize this antenna outdoors in windy conditions for fox hunting, as well as operate over the air with it.



Joe Leggio – WB2HOL

If you do build one of these and experience problems in obtaining a workable VSWR, one additional trick you can try is to place a piece of wire across the tuning loop as a shorting bar, and move it along the length of the tuning loop until you find a low VSWR and then solder the wire shorting bar in place.

If you’d like to try building one of these, a detailed diagram follows on the next page.



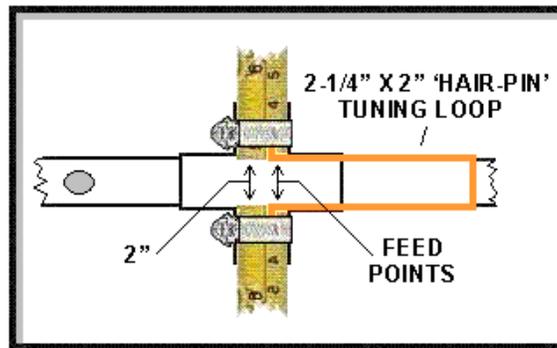
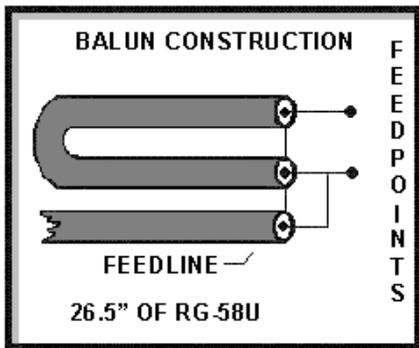
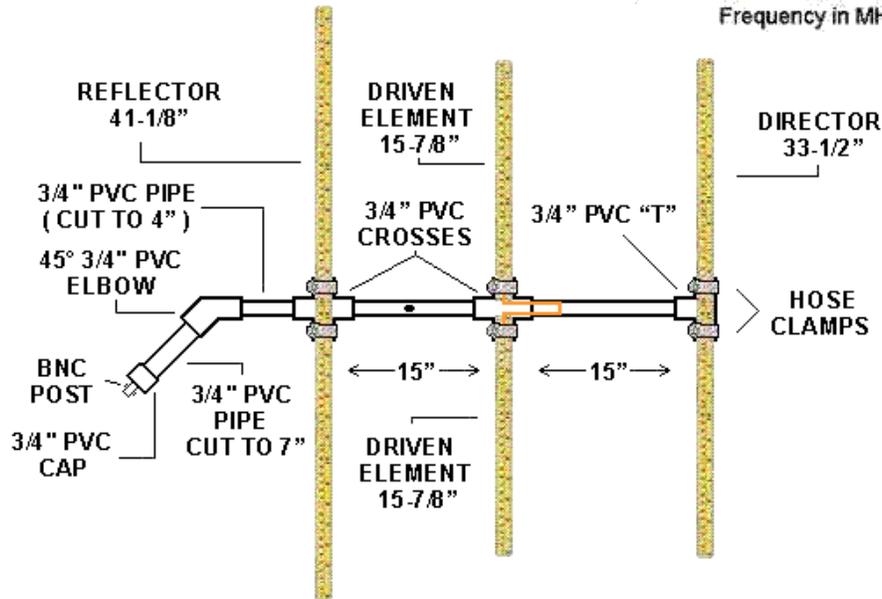
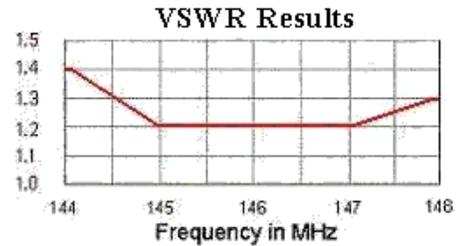
Version by W4JEM with elements in stowed configuration.

A last item that needs to be mentioned concerning this antenna is safety. When cutting the element lengths, take extra care to round-off, file or tape up the ends of the elements. These edges can be extremely sharp and the antenna can turn into a hack-n-slash implement while you’re out waving it around in search of the fox. Likewise with the placement of the antenna’s hand grip. Ensure it is far enough away to keep the reflector’s edge away from your hand.

Happy Hunting!

2 Meter Fox Hunter

6 Db Forward Gain
22 Db Front to Back



ALL ELEMENTS ARE MADE FROM LENGTHS OF ONE-INCH STEEL TAPE MEASURE.

ENDS OF THE TAPE MEASURE LENGTHS HAVE BEEN SLIGHTLY ROUNDED OFF AND FILED DOWN FOR SAFETY.

PAINT ON THE ENDS OF THE TAPE MEASURE ELEMENTS HAS BEEN SANDED OFF TO ALLOW FOR THE SOLDERING CONNECTION OF THE TUNING LOOP.

FEEDLINE COMING OFF THE BALUN ENTERS A HOLE JUST BEHIND THE DRIVEN ELEMENTS, AND TERMINATES AT A BNC POST MOUNTED AT THE END OF THE HANDLE WITHIN THE PVC CAP.