

**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



As you well know, November 2nd is Election Day for local, county, state and federal offices. What you may have forgotten about are the ARRL elections in the Western Gulf Division. ARRL members should have received their ballot by mail. The ballot must be received by noon on November 19. Do not delay in mailing in your ballot for November 11<sup>th</sup> is a Federal Holiday.

There is one more election that CTARC members can vote in; that is the election of club officer's and one director for 2011. The Nominations Committee recommended the following... President: Kenneth Watkins, KE5ISN; Vice-President: Gerald Richmond, N5ZXJ; Secretary: Priscilla Beauregard, KE5UES; Treasurer: Linda Blackmon, KE5QGN. For Director, the Nominations Committee recommended that nominations be taken from the floor. Nominations will be taken from the floor for all Officers' on election night. The election will be held at the November 2nd regular meeting at the Bell County Communications Center. Members will receive a ballot by e-mail which can be returned in person, or e-mailed to me or

mailed to the CTARC mail box at the address provided on the ballot.

I would like to say congratulations to the following on obtaining their technician license on October 23rd; Frank Gordon, James Lee and Ramona Rodriguez. One Extra Class license exam was given and Priscilla Beauregard, KE5UES, is now an Extra. Congratulations to all of you.

### *CTARC Christmas at Schoepf's*

The holiday season is fast approaching and CTARC will be celebrating Christmas by holding its December meeting on the 7<sup>th</sup>, at 7 PM, at Schoepf's Old Time Pit Bar-B-Que. This is for the whole family, so mark your calendar, bring your appetite and get an early start on the holiday season.

Getting there is easy; from I-35, take the exit for East Central Avenue (Exit 294A) in Belton, and turn towards downtown Belton. Schoepf's is on the right at 707 East Central Avenue.

Remember our veterans on November 11<sup>th</sup>.

*73 de KE5ISN*

Good thing we've still got politics in Texas -- finest form of free entertainment ever invented.  
- Molly Ivins

## CTARC General Membership Meeting, Tuesday, Nov. 2nd, 7:00 PM

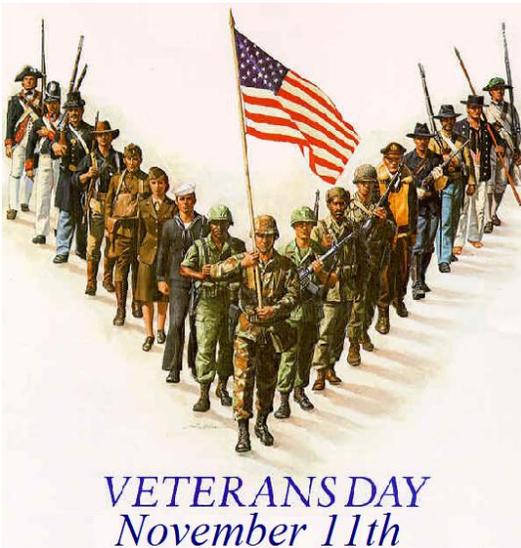


The Central Texas Amateur Radio Net meets every Thursday at 8:00 PM on the W5BEC repeater, on 147.140(+) PL 123.0 Join Us!

November NCS & Back-Up NCS Schedule:

November 4 <sup>th</sup> :	November 11 <sup>th</sup> :
Net Control: KF5LNX	K5KFH
Back-Up: K5KFH	W5VEX

November 18 <sup>th</sup> :	November 25 <sup>th</sup> :
Net Control: W5VEX	<b>- No Net -</b>
Back-Up: AD5SK	<b>Thanksgiving</b>



### ARRL Sweepstakes Contest, SSB

Contest period runs from 2100Z, November 21 through 0300Z, November 23 on 10, 15, 20, 40, 80 and 160 Meters phone.

For further information on this contest visit: <http://www.arrl.org/sweepstakes>



*"Whenever the laws of any state are broken, a duly authorized organization swings into action. It may be called the State Police, State Troopers, Militia, the Rangers or the Highway Patrol..."*



November 25<sup>th</sup>, 1955 - a two-bit thief makes off with an oil indicator containing deadly radioactive pellets.

This time it would take more than Dan Matthews and the training, skill and courage of the Highway Patrol to solve the case. This time it would take ham radio.

For the next 26 minutes, ride along with Dan Matthews in car "21-50" as he and amateur radio save the day. Go to: <http://www.hulu.com/watch/104147/highway-patrol-radioactive#x-0.vpisode.1.0>

## Texas Tornadoes Destroy Homes, Over-Turn Train Cars

Cleanup crews are out in East Texas after two tornadoes destroyed homes, overturned a tractor-trailer and left a train car in a high school baseball field.



Rice, Texas was hit with a tornado that left damage to two schools and several homes. Four people sustained minor injuries that weren't life threatening, including a driver whose sport utility vehicle was partially crushed when an 18-wheeler hauling a 40-ton dump truck overturned.

The National Weather Service says another tornado damaged some homes in Hunt County, in the Lone Oak area. --

Which is about 40 miles North of Dallas.

Reports showed that the high school baseball stadium was destroyed when 11 freight train cars were simply tossed onto the field. Steel wheels and track were scattered everywhere.

Four people suffered minor injuries, including a driver whose sport utility vehicle was partially crushed when an 18-wheeler hauling a 40-ton dump truck overturned.

The National Weather Service (NWS) issued an updated assessment on the afternoon of October 25th concerning the Navarro County tornado which struck Rice, on October 24th just before 6p.m.



Here is the text of the NWS report:

“The tornado in northern Navarro County that passed near the town of Rice has been determined to be a strong EF-2 tornado, with estimated maximum wind speeds of 135 MPH. The tornado traveled along a 7 mile path and was approximately 100 yards wide. Five single family residences were heavily damaged and essentially destroyed in the path of this tornado. Three single family residences also sustained damage. The Rice School District campus south of town near Interstate 45 also received significant damage.”



October tornadoes, while not unheard of, are rather infrequent in Texas. For instance, three were reported in far north-east Texas on October 29th of last year, which is the total Texas tornado count in October of 2009.

The Navarro County tornado of October 2010 is one of four reported across Texas on the 24th.



## First Play-By-Play Football Game Broadcast Via Amateur Radio



Shortly after the hostilities of World War I ended, amateur radio activities began anew; and the students who had radio operating licenses were permitted to operate school stations. It was only natural that these operators would get together on more or less regular schedules; and it was during one of these exchanges between William A. Tolson, Chief Operator at Texas A&M Experimental Station 5XB, and operators at Texas University Experimental Station 5XU, that a decision was reached to undertake the transmission of the play-by-play activities of the forthcoming Thanksgiving Day football game between the two universities that was destined for a niche in the history of sports.

**Thanksgiving Day, 1921...** Tolson and other students overcame technical difficulties to make the broadcast possible. They ran lines from the Kyle Field press box to a transmitter at Bolton Hall and borrowed equipment from the Corps of Cadets Signal Corps. They installed three redundant systems: two connected to the power plant and a battery backup. Harry M. Saunders and the coaching staff devised abbreviations to describe the action and improve transmission speed. "TB A 45Y," for example, signified "Texas ball on the Aggie 45 yard line."

When it was mentioned on the air to the operators at Texas University that such a list of abbreviations was being prepared, numerous requests for a copy of the list were received by radio and by mail from some of the 275 then licensed amateur radio operators in the state. Thus, what had started out to be a point-to-point broadcast, turned out to be one with many listeners.

On game day, Thursday, November 24, 1921, the broadcast was flawless with Saunders at the telegraph key.



W.A. Tolson at station 5XB on the Texas A&M Campus

At station 5XU in Austin, Franklin K. Matejka relayed messages to Longhorn fans seconds after each play. Amateur radio operators across Texas also followed the action.

During the broadcast of the game a number of amateur radio operators called in on the frequency to ask for the score or for "fill-ins" on the reports. Even NKB, a hard-boiled Navy station at Galveston which occasionally complained of amateur radio station interference, called in between halves to get the score.

This event was destined to change football from a sport that required the active participation of players and fans to a new kind of living-room entertainment. From Kyle Field that day originated the world's first radio broadcast of a sports event

Thus began the transition of football from a game that required the fan to be present in the stadium to one that now requires only a good color television set, an easy chair and the appropriate refreshments. Not only was history made on that Texas Thanksgiving Day, but the lifestyle of a nation was changed, too.

Ingenuity and innovation resulted in a pioneering broadcasting accomplishment.

The game ended in a scoreless tie, but A&M became conference champion.



## Justice Prevails

*In the July issue of the Wavelength, Page 9, we reported on a New York ham operator – **Steve Bozak WB2IQU**, who was ticketed for talking on his ham radio while operating a motor vehicle under New York’s cellphone law, which prohibits using a cellular telephone while driving. Under that law, violators if convicted, face up to a \$100.00 fine.*

Steve Bozak took his case to City Court where, on September 8, the judge dismissed the case in Bozak’s favor. Bozak argued that his use “of a handheld Amateur Radio does not fit the definition of a mobile telephone, and as such, the present charge should be dismissed.” The prosecutor’s office did not submit a response in opposition.

Saying that New York’s Vehicle and Traffic Law defines a “Mobile Telephone” as a “device used by subscribers and other users of wireless telephone service to access such service,” and that a “Wireless Telephone Service” is defined as “two-way real time voice telecommunications service that is interconnected to a public switched telephone network and is provided by a commercial mobile radio service,” the judge decided that Bozak’s handheld transceiver did not fit that description.

“A review of 47 C.F.R.§20.3 reveals that Citizens Band Radio Service is defined under private mobile radio service not commercial mobile radio service,” the decision read. “Therefore, the Court finds that the use of an Amateur Radio device does not fit the definition of a mobile telephone as defined under the Vehicle and Traffic Law” As such, the judge dismissed the case in Bozak’s favor.

“While the court cited the Citizens Band Service instead of the Amateur Radio Service, the ruling is favorable to amateurs on the precise point of law raised,” said ARRL Regulatory Information Manager Dan Henderson, N1ND. “This is a great ruling in New York and exactly what we had thought would happen.”

*Information courtesy of K2HAT via QRZ.com*



## Justice Served

*In the June issue of the Wavelength, Page 8, we Reported on **Irene Marie Levy - KJ6CEY**, an amateur radio operator from San Jacinto, California, who had admitted making a series of transmissions threatening the lives of local police officers and fire department personnel, has learned her fate.*



On Friday, October 8th twenty-nine year old Irene Marie Levy - KJ6CEY, pleaded guilty to seven charges involving interference to the Hemet, California police and the Riverside County Fire Department. A judge in the city of Murrieta sentenced her to three years probation and gave her credit for the time she spent in jail since her arrest last spring. She was also ordered to undergo psychiatric care.

But Irene Levy's problems may be far from over. At this point the FCC has not yet entered into the matter. If it does and decides to cite her, she could face a fine, a license suspension or even a hearing to determine if she should be permitted to continue as an FCC amateur radio licensee.

*Information courtesy of K6PZW via QRZ.com*



## WSR-88D Radar Upgrades

Starting in November, and lasting through the end of 2012, the National Weather Service will begin the much-anticipated replacement of their entire radar network.

During the month of November, all level 2 radar sites will have every tilt become "super resolution", and every product will go out to 300 km (180 miles). And, starting in December and going through late spring, the NWS in coordination with the Department of Defense will add additional radar sites sending out level 2 data at super resolution.

These new sites are:

KPOE Fort Polk, LA  
KVBX Vandenberg AFB, CA  
KEYX Edwards AFB, California  
KMXX Maxwell AFB, Alabama  
KHPX Fort Campbell, KY  
KMBX Minot AFB, ND  
KVAX Moody AFB, Georgia  
KEOX Fort Rucker, AL



Additionally, San Juan, PR's radar will be upgraded to super-resolution somewhere in this time frame. The NWS wants to send out radar data in Alaska in level 2 format, but cost concerns will prevent this from happening for at least another year.

Level 3 Changes; if you're a weather geek, your geek meter readings should be going through the roof about the 40 new dual-polar radar data products coming starting on November 17 with Wichita, KS as the first NWS radar network site to be switched over and the vast majority of them coming in the next 2+ years. You can see the 40 dual-polar radar products that will be added to the level 3 radar feed in this NWS Powerpoint presentation at: [http://weather.gov/datamgmt/slide\\_show/MikeIstok\\_rev1.ppt](http://weather.gov/datamgmt/slide_show/MikeIstok_rev1.ppt)

Dual-Polar Deployment; the WSR-88D radars, commissioned in 1988, and well past their life expectancy, will all be replaced with dual-polar radars. Dual-polar radar sends out energy in both a horizontal and vertical axis, instead of just in one plane. This allows us to see the shape of the precipitation falling from the sky. This, in turn, helps us to know more things: whether or not the precipitation contains hail, what size it is, and even what shape it is. Though these radars can provide higher resolution than today, for now, they will be maintained at the current "super resolution" due to NWS bandwidth constraints. They can also do new things such as determine precipitation type, estimate rainfall a lot better than they can now, determine the melting layer of snow, better overall quality of data, and more. As a radar site is replaced, it will be down for 3 weeks or so.

For the NWS and private weather forecaster alike, the NWS has published some excellent training material in several modules, covering this new technology and interpretation of data, which can be found at:

<http://wdtb.noaa.gov/courses/dualpol/outreach/index.html>

## Moon Halo Phenomena

The other evening my Lady and I were out for our customary stroll around the neighborhood and upon returning and glancing up, observed a halo around the Moon in the evening sky.



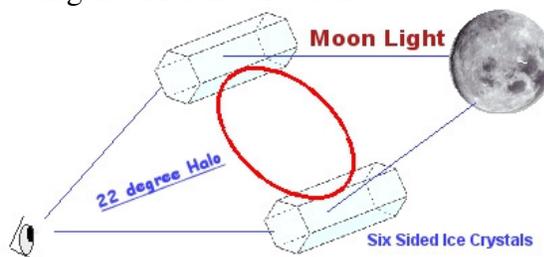
*Moon Halo - Photo by Matt Lauder*

*Cause and effect...* The moon can produce interesting optical effects when conditions are right. One of those effects is known as Moon rings or halos.

The ring around the Moon is caused by the refraction of Moonlight (which of course is reflected sunlight) from ice crystals in the upper atmosphere. The shape of the ice crystals results in a focusing of the light into a ring. Since the ice crystals typically have the same shape, namely a hexagonal shape, the

Moon ring is almost always the same size. The ring that appears around the moon arises from light passing through six-sided ice crystals high in the atmosphere. These ice crystals refract, or bend, light in the same manner that a camera lens bends light. The ring has a diameter of  $22^\circ$ , and sometimes, if you are lucky, it is also possible to detect a second ring,  $44^\circ$  diameter. Thin high cirrus clouds lofting at 20,000 feet or more contain tiny ice crystals that originate from the freezing of super cooled water droplets. These crystals behave like jewels refracting and reflecting in different directions.

*Chance phenomena or weather precursor...* folklore has it that a ring around the Moon signifies that bad or unsettled weather is coming, and in many cases this may be true. The ice crystals that cover the halo originate from high altitude, thin cirrus clouds that normally precede a warm



front by one or two days. Typically, a warm front will be associated with a low pressure system which is commonly referred to as a storm.

It is also believed that the number of stars within a moon halo indicate the number days before bad weather will arrive.

On this particular evening, there were no stars visible within the Moon halo; thus it might be said under this theory, that unsettled weather was imminent.

The following morning we awoke to a grey, heavily over-cast sky. Soon distant rumbles could be heard and before long, drizzle, then rain set in. Not enough to really call it a rain storm or any other kind of storm for that matter. But enough precip did fall to at least water the lawn.

It would seem this time anyway, the Moon Halo Phenomena was accurate in its' forecast of imminent unsettled weather.

Try putting this phenomena to the test the next time you observe a Moon Halo.



Free to a good home... 250 feet of hard-line coax, plus a 40 foot tower. Contact Joe Dorn – W5VEX, at (254) 939-5918 or via [jbdvex@gmail.com](mailto:jbdvex@gmail.com).

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Nearly like new, galvanized aluminum & brass rooftop antenna tripod mount. This was donated by KB7UNA and KD5RCS. If interested, contact Rick Murray - K6WXA, at (254) 690-1303 or via email at: [k6wxa@yahoo.com](mailto:k6wxa@yahoo.com).

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## Educational Opportunities



This past month FEMA introduced three new courses and several course revisions to its independent study program: IS-11.a *Animals in Disasters – Community Planning*; IS-20 *Diversity Awareness*; IS-100.b *Introduction to the Incident Command System*; IS-200.b *ICS for Single Resources and Initial Action Incidents*; IS-420 *Implementing the Emergency Food & Shelter National Board Program* and IS-551 *Devolution Planning*.

For a complete list of all the courses available through FEMA, please visit: <http://training.fema.gov/IS/crslst.asp>



## FROM THE EDITOR'S DESK



*Looking ahead...* Once again I'll be out-of-state this month over the Thanksgiving holiday period. As just a heads-up, this *might* mean that the December issue of the Wavelength newsletter may be a day or two late in getting published and out to you. But that's only a maybe. I *should* be back in time for the December issue, but if I'm not, you've been so advised. –K6WXA



President: Kenneth Watkins, KE5ISN  
Vice Pres: Gerald Richmond, N5ZXJ  
Secretary: Priscilla Beauregard, KE5UES  
Treasurer: Linda Blackmon, KE5QGN  
Director: Richard Diller, KE5ULJ  
Director: Kevin Epperson, K5KEV  
Director/Webmaster: Russell Mezynski, KF5LNX  
Newsletter Editor: Rick Murray, K6WXA



## Becoming a Volunteer Examiner

Do you possess at least a General Class license and have an interest in becoming an ARRL Volunteer Examiner?

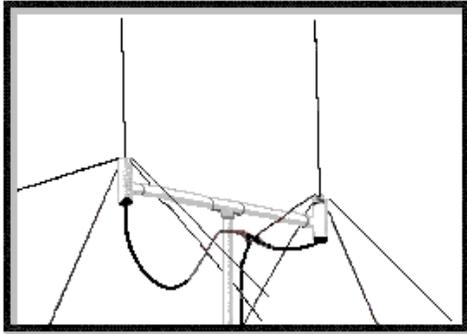
Volunteer Examiners are licensed radio amateurs holding a General Class license or higher who offer their time to administer the FCC licensing tests. You can learn how you can become a VE associated with the ARRL Volunteer Coordinator office by reviewing the VE manual at:

<http://www.arrl.org/files/file/vemannual2008.pdf>

## A 2 Meter Phased Array

Rick Murray, K6WXA

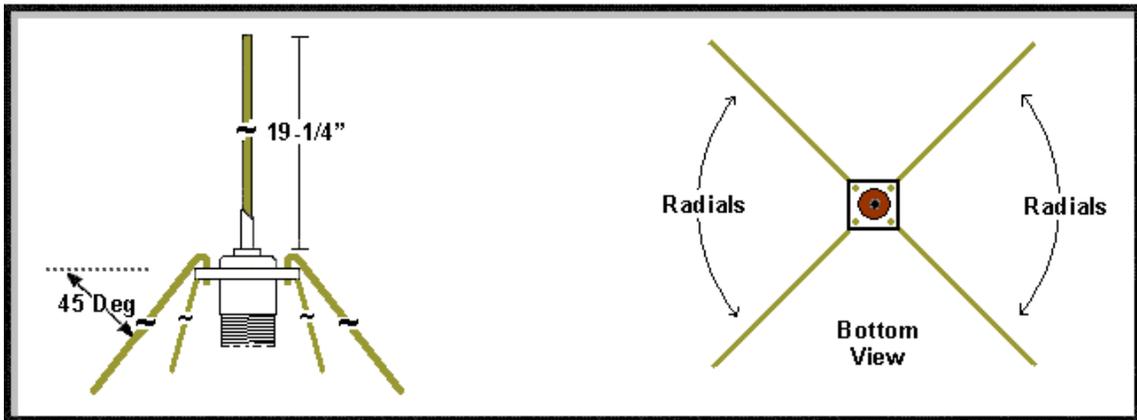
*Introduction...* I stumbled across this antenna design in the January 1998 issue of *QST* magazine. Originally designed and constructed by Hal Thomas - K6GWN, it is an antenna project that I never got around to building and proving out, so I can neither confirm nor deny the original designers' claims or specifications. Admittedly, it may have been cheaper, easier, and even better to have simply built a three element yagi – which would have produced more gain and had more directivity – but this is a tinkerer's project for the experimenter.



The antenna design consists of two quarter-wave 2 Meter ground planes, affixed to a PVC frame, and connected by a phasing harness in which one end of the phasing line is longer than the other. The antenna radiates in the direction of the ground plane that's attached to the longest phasing line.

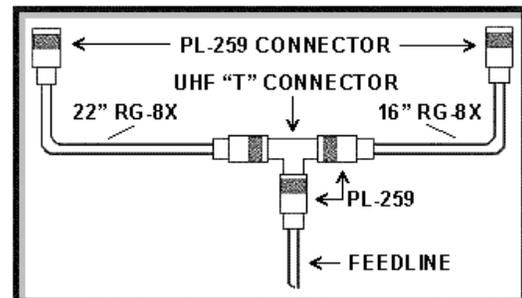
In theory, the antenna should produce 6.4 Dbi or roughly 4.0 Dbd, of forward gain and a VSWR of roughly 1.3:1 at 146 MHz.

*Construction...* first assemble two quarter-wave ground planes made from 1/8" brass rod and SO-238 chasis mounts.

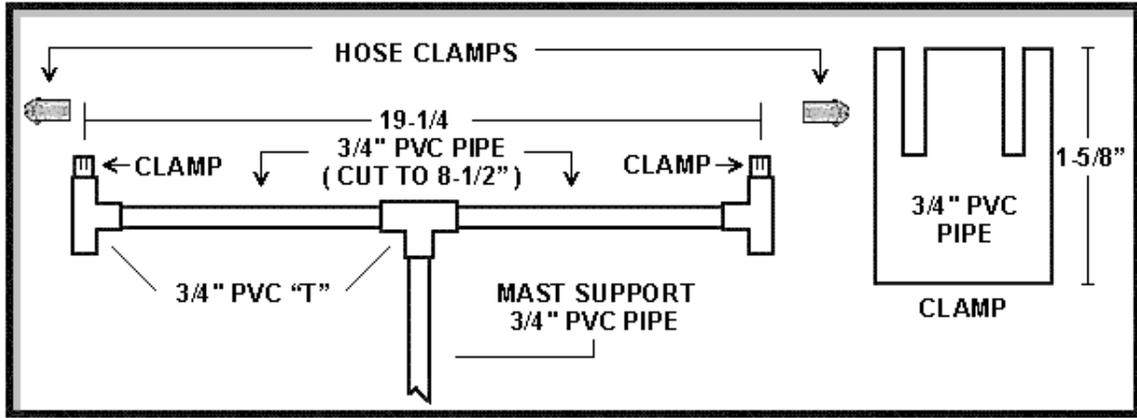


For the ground radials, cut eight lengths of the 1/8" brass rod to 18-1/2" and bend the last 1/4" of each rod into a "J" shape and solder each into the bolt holes of the SO-239 chasis mount, and then bend each downward to an approximate 45° angle. For the radiating elements, cut two lengths of the brass rod to 19-1/4" and solder each to the center post of the SO-239 mount.

Next assemble the phasing line from 50 ohm RG-8X coax. One length of the coax is cut to 22", while the other is cut to 16" as shown in the diagram at right. Allow a little extra in your cutting lengths to provide for the PL-259 connectors affixed to each end of your coax lengths. The two lengths of coax are then connected with a UHF "T" connector.

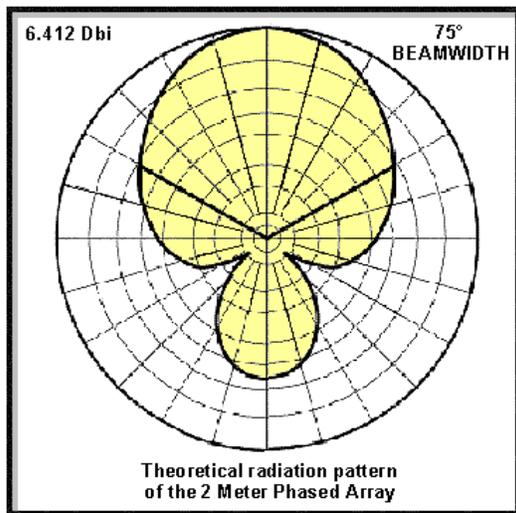


The opposite ends of the coax lengths are for attaching to each of the ground plane antennas, explained further on.



For the mast assembly, cut two lengths of  $\frac{3}{4}$ " PVC pipe to 8-1/2" and glue them to  $\frac{3}{4}$ " PVC "T" joints as illustrated in the diagram above. Next cut two more lengths of  $\frac{3}{4}$ " PVC to 1-5/8" and glue them to the top of the opposing "T" joints also as illustrated above. Using a hacksaw, cut notches into these clamp joints to a length of approximately 1/2" and place one-inch hose clamps around them. Lastly, cut a random length of  $\frac{3}{4}$ " PVC and glue in place to the bottom of the center PVC "T" joint as your mast support.

*Final assembly...* run the PL-259 connectors of your phasing line up through the bottom of the opposing  $\frac{3}{4}$ " PVC "T" joints and attach them to the SO-239 connectors of your ground plane antennas and secure them in place with the 1" hose clamps.



*Some final thoughts...* as mentioned, this is a "tinkerers" project for the experimenter. In comparison, building a three-element yagi for optimal performance would be the better venture as it would involve fewer materials at less expense and would be better on-the-eyes verses this project. Additionally, a three-element yagi - in a perfect world - would produce 7 Dbd of forward gain verses the 4 Dbd gain of this project and a three element yagi would produce a much more focused radiation pattern verses this phased array design. But again, this project is for the true tinkerer.

Many hams use ground plane antennas for omni-directional coverage on VHF, but how many have ever tried two ground planes in a *phased array* to focus the radiation pattern in a particular direction?

The original designer in his write-up, mentioned that this entire project only took him three hours of work at an expense of only \$20.00 (...1998 prices...)

You can read the original story of this antenna by the original designer, by visiting: <http://www.w7dk.org/RCT%20Technical%20files/2%20Meter%20Phased%20Vert%20Ant.pdf>

## Fort Hood Radio

Rachel Parks, Fort Hood Sentinel Staff

Broadcasting live from the Great Place, it's Fort Hood radio. Some people may not know that Fort Hood has a radio station, that's probably because it can't be found on your car radio. The station can be found on the Internet though. The Web-based radio station is available 24 hours a day, seven days a week.



The beauty of the Web-based channel is that Soldiers in Iraq or Afghanistan or anywhere can get a little taste of home if they log into the station.

Three dedicated radio personalities, Julia Conner, Dave Howard and Darryl Leonard, make it their mission to bring a mixture of good music and Fort Hood information to soldiers, families and civilians around the world. The small crew prides itself on the service they provide. All three have extensive civilian or military broadcasting time so they know what listeners enjoy the most.

The radio station started under Lt. Gen. Rick Lynch, the former commanding general of the Great Place who left Fort Hood in 2009 to take control of Installation Management Command. "He wanted a better way to get information out to the Soldiers and he wanted to have it so he could have immediate access to media if he needed it," Conner said. So the radio station was born.



Dave Howard (left), the Fort Hood Radio program director, and Darryl Leonard, the afternoon show host, get ready to go on the air.

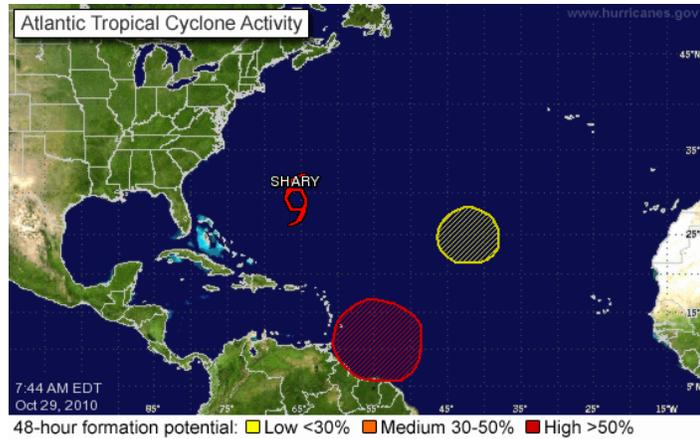
Unfortunately, the radio station frequency that covers Fort Hood had already been awarded to a civilian radio station by the Federal Communications Commission, so with no radio frequency, Fort Hood radio went to the Web. While that offers a lot of benefits, there are also challenges. One of those challenges is that some in the community aren't aware that the station exists; the station can be found at: [www.forthoodradio.com](http://www.forthoodradio.com), and then click on the "Listen Live" icon.

The station is commercial free, but does have some public service announcements. And of course, there is music on the station. Lots and lots of music. The music on the station tends to be pretty eclectic. They have rock, country, hip-hop, urban, and alternative, Howard said. "We try not to fall into the trap of the Top 40 stations where they play the same songs every two hours. We have 1800 songs rotating." Howard also said the station is generally up-tempo. There aren't a lot of slow songs and ballads. The station represents a variety of musical genres during its special programming.

The whole team is always open to suggestions from the community. If you have an idea all it takes to get the ball rolling is an e-mail to [info@forthoodradio.com](mailto:info@forthoodradio.com) and you just might end up listening to an hour-long program based on your suggestion. "We really want people to feel like they own the station and that we're a part of people's lives" Howard said.



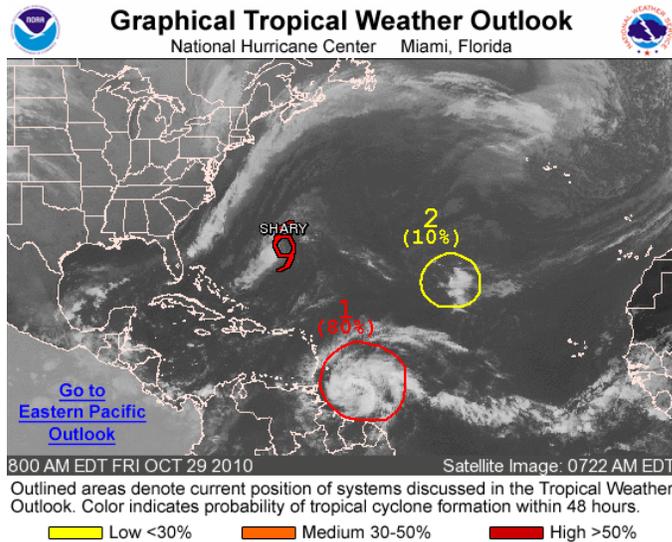
# As we go to press...



*Just when you thought the Atlantic hurricane season was winding down... three vigorous storm systems are churning in the Atlantic.*

Tropical Storm Shary formed during the early morning hours of Friday, October 29<sup>th</sup> and all the models for it are consistent in it moving to the north-northeast and then petering out, somewhere in the mid-Atlantic without threat of a U.S. landfall.

The second system, indicated in the yellow area above and referred to as Invest 90, is a weak low pressure area where again, the models are consistent in showing it moving off to the north-northwest without any threat of a U.S. landfall.



Of strong concern however, is a large, organized low pressure system off the northeast coast of South America, Invest 91, which has been growing in strength, size and organization.

This system, as of this writing, is forecast to develop into a tropical storm within the next 48 hours. The models concerning it are also consistent in showing this storm system growing to hurricane strength and moving in a north-northwesterly direction and entering the Gulf of Mexico.

Those with interest would do well to monitor the progress of this storm by visiting the National Hurricane Center website at <http://www.nhc.noaa.gov> as well as monitoring the Hurricane Watch Net, WX4NHC on 14.325 MHz for what could be the last named storm of the 2010 Atlantic season.

