



The STATIC

June 2017

The monthly newsletter for members and associates of the Hill Country Amateur Radio Club
Copyright HCARC 2017

The Presidents Message

CQ Field Day, CQ Field Day, CQ Field Day! In just a few short weeks N5HR, the HCARC club station, will be on the air from our site at the Our Lady of the Hills sports pavilion near the Kerrville airport. Field Day is June 25-26 this year.

If you are a new, or relatively new, ham this will be a great opportunity to learn how to set up a station in the field and to get on the air. You will get the chance to see several different types of rigs, antennas and related equipment, try out different modes, and learn about good operating procedure under simulated “emergency” conditions. We’ll

have plenty of experienced operators on hand to walk you through everything you need to know. If you're an experienced ham Field Day is an excellent opportunity to hone your emergency communications skills and to pass along your insights on propagation and good operating practices to the next generation of operators. Along with the operating aspect, we'll have some time for camaraderie and a good meal for everyone Saturday evening. Plus we're planning to do something different and hold a silent auction at Field Day for a number of items of surplus club equipment –more details to follow.

Frank Edwards, KK5IA, is our Field Day coordinator and he will be speaking to us about Field Day as part of our June meeting program. Frank will tell us more about his plans for Field Day. Frank still needs operators to man the stations and folks to come to help set up and tear down the stations. So please let Frank know if you can help.

Speaking of stations, by the time you receive this issue of the Static, you should also have received a copy of the final results and recommendations of the Club Station Review Committee. This committee has been working since January to review our equipment needs for the club station at the Red Cross. The committee has also been repairing antennas and making sure that the club station is safe and functional for all our members. I ask that every club member review this document as it has ramifications on how our club can best serve the needs of its members and our served agencies, such as the Red Cross and Kerr County.

(Editor's Note - it is also posted in this issue)

Club Calendar

June 1st - 7pm: General Meeting of HCARC.

June 10th - 10am: Field Day Planning Committee Meeting at the Red Cross

June 24th & 25th: Field Day Events at Our lady of the Hills Athletic Facility

73 and good DX,
Dale - K4DG

=====

Welcome to our Newest Members

A warm Hill Country welcome to our newest members:

None to announce this month

Congratulations to the new Licensees and Upgrades

A Hill Country Cheer to our latest new and upgrades:

Clayson Lambert has successfully upgraded his license to to General Class. His call is W5CHL

The following list are the new Technicians who passed their examination in May

Fred Andreas	KG5TKM
Craig Boyer	KG5TKL
Lawrence Gullie	
Arthur Hughes	
David Larson	KG5TKO
Carol Little	KG5TKS
Henry Ortega	KG5TKV
Jocelyn Ritz	KG5TKQ
Jennifer Sanders	KG5TKR
Robert Sanders	KG5TKP
Brown Stokes	KG5TKT
Ryan Stricker	KG5TKN
Bob Turner	KG5TKU

Radio History to Remember

The Original Digital



A Message to Garcia

INVOLVEMENT: If you haven't read Dale's column from last month, do it now. Read it again if you have. It brought to memory one of the training lessons from Texas Army Mars a few years back. We should all strive to be more like Lieutenant Rowan. Not only is this article about our history, but should give us the drive to promote our hobby and club. It is a lesson all of us should learn, and teach our children. Getting a Message to Garcia by Mark Gorman.

Over 100 years ago, a brief article was written to fill an empty space in a magazine which was otherwise ready for publication. This seemingly insignificant work, about a soldier in the U.S. Army, has since become one of the most

published documents in the history of printed word. "A Message To Garcia" has been translated into every major language on earth, with over 100 million copies in print. What was the significance of this article, which caused such a stir around the world?

In 1899, a man by the name of Elbert Hubbard wrote an editorial for a small magazine called The Philistine. Over tea, Hubbard was discussing the Spanish-American War with his family. Everyone had been cheering General Calixto Garcia, the leader of the Cuban rebel forces, as the key to winning the war in Cuba, when Hubbard's son, Bert, put forth this argument. "In my mind", ventured Bert, "the real hero of the war was not General Garcia, but Lieutenant Rowan, the man who got the message to Garcia." His son's words leaped in Hubbard's heart.

Hubbard wrote the article, "A Message to Garcia" and the edition went to print. He thought little more about it until the magazine began getting requests for re-prints of that particular edition. More and more requests for re-prints came in until the magazine was literally swamped. Puzzled by the overwhelming number of orders, Hubbard asked why people were interested in that particular copy of the magazine. He was surprised to learn that the demand was for the "filler" article he had written about Rowan. Orders came in for 100,000 copies, 500,000 copies, 1,000,000 copies. Eventually, Hubbard was forced to simply grant permission to those who wanted large numbers of re-prints, because of his limited ability to publish in those quantities. Why are so many people interested in an article about some unknown lieutenant by the name of Andrew Summers Rowan? The reason is: everyone is looking for individuals such as Rowan.

In 1895, the little island nation of Cuba was struggling to be free from Spanish rule. The



Spanish soldiers who occupied the island oppressed and brutalized the people. They desperately wanted to be free. The United States had a strong interest in Cuba, not only because of its geographical proximity to the United States, but also because of our financial investments there. By 1897, the situation in Cuba had deteriorated to the point that there was rioting in the streets of Havana between nationalists and Spanish soldiers. President McKinley dispatched the battleship *Maine* as a visible indicator of the United States' presence in Cuba. The American battleship, sitting in Havana harbor, sent a clear signal to the Spanish government of our country's resolve to protect our interests in Cuba. Although a formidable presence, the *Maine* did not engage in any hostile act against Spain.

On February 15, 1898, however, an explosion rocked the Havana harbor sinking the U.S. battleship. The American people were greatly alarmed over this open act of aggression less than 100 miles off our country's coast. McKinley sent an ultimatum to Spain to get out of Cuba. By April, the United States was at war with Spain. Ultimately, the Spanish-American War proved to liberate, not only the nation of Cuba, but the Philippine Islands, as well.

Just before declaring war, President McKinley was meeting with Colonel Arthur Wagner, head of the Bureau of Military Intelligence for the United States. "Where", asked President McKinley, "can I find a man who will carry a message to Garcia?" Co-operation between the rebel forces in Cuba and the United States was essential to the success of the campaign. It was vital to quickly communicate with the leader of the rebels, General Calixto Garcia, a Cuban-born Creole. General Garcia was somewhere in the mountains of Cuba leading the rebel troops in their fight for independence. He was a hunted man by the

Spanish army. No one knew his exact whereabouts.

Colonel Wagner did not hesitate in his answer to the President. "I have a man - a young officer, Lieutenant Andrew Summers Rowan. If anybody can get a message to Garcia, Rowan can."

An hour later, Col. Wagner stood before Lieutenant Rowan. "Young man," said the superior officer, "you must carry a message to General Garcia, who will be found somewhere in the eastern part of Cuba...You must plan and act for yourself. The task is yours and yours only."

Col. Wagner then shook Rowan's hand and repeated, "Get that message to Garcia." Without asking one question, Rowan left to find Garcia.

Rowan delivered the message to Garcia and the response got back to McKinley without Rowan ever asking, "Where is he? What does he look like? Who are his contacts? How do I get there?"

He simply took the orders and did what he was asked to do. Is there a Rowan among us? Is there somebody who can get a message to Garcia

without having to do an interrogation of his senior officer first? Is there someone who can get the job done without needing to have his employer hold his hand until the task is completed? If not, the boss might as well do it himself.

Is there somebody that I can just ask to accomplish a task, and the next time I see them I am told, "I'm finished with that. What do you want me to do next?"

Where can I find someone like that? Where is he? Can I find a Rowan? Is there someone who can get a message to Garcia?

They are out there. There's just not enough of them. There are probably some Rowans reading this right now. There will always be a few of those individuals who are extraordinary. Extraordinary

means above ordinary. Those who don't just do what is expected of them; they surpass the expectations of others, in their pursuit of



excellence. Here is an excerpt from Elbert Hubbard's article written over 100 years ago. It sounds as if it could have been written today: The point I wish to make is this: McKinley gave Rowan a letter to be delivered to Garcia. Rowan took the letter and did not ask, "Where is he at?" By the eternal, there is a man whose form should be cast in deathless bronze and the statue placed in every college of the land. It is not book-learning young men need, nor instruction about this and that, but a stiffening of the vertebrae which will cause them to be loyal to a trust, to act promptly, concentrate their energies: do the thing – "Carry a message to Garcia!"... You reader, put this matter to a test. You are sitting now in your office. Six clerks are within call. Summon any one and make this request: "Please look in the encyclopedia and make a brief memorandum for me concerning the life of Correggio." Will the clerk quietly say, "Yes, sir," and go do the task. On your life, he will not. He will look at you out of a fishy eye and ask one or more of the following questions: Who was he? Which encyclopedia? Where is the encyclopedia? Was I hired for that? Don't you mean Bismarck? What's the matter with Charlie doing it? Is he dead? Is there any hurry? Shan't I bring the book and let you look it up yourself? What do you want to know for?... Now if you are wise you will not bother to explain to your assistant that Correggio is indexed under the C's, not under the K's, but you will smile sweetly and say, "Never mind," and go look it up yourself.

73,

Fred - W0LPD/ZUT595

Radio Tech to Learn

Field Day Preliminary Propagation message

1 - There are 7 files

MUF

20 SSB

20 CW

40 SSB

40CW

80 SSB

80 CW

2 – MUF Chart - 50 % of days MUF is below what is predicted and 50 % of days MUF is above.

3 – CW uses S/N/Bandwidth of 30 dB/Hz (3dB in a 500 Hz bandwidth. SSB uses S/N/Bandwidth of 40/dBz (40 dB in a 2kHz bandwidth).

4 – Antenna is a half wave dipole at a height of half a quarter of a wavelength for each band (generous for 80 and low for 20)

5 – Smoothed sunspot number of 75

6 – Expected solar and geomagnetic disturbances won't be known until a few days before Field Day.

7 – VOACAP/VOAAREA used to generate plots

8 – Info at top of each page:

TX location - Kerrville

Antenna – [HD/.5/.25], Half wave Dipole at ¼ wave length above ground

TX power – 100 W

Antenna direction – 90 degrees from North
Time (UT)

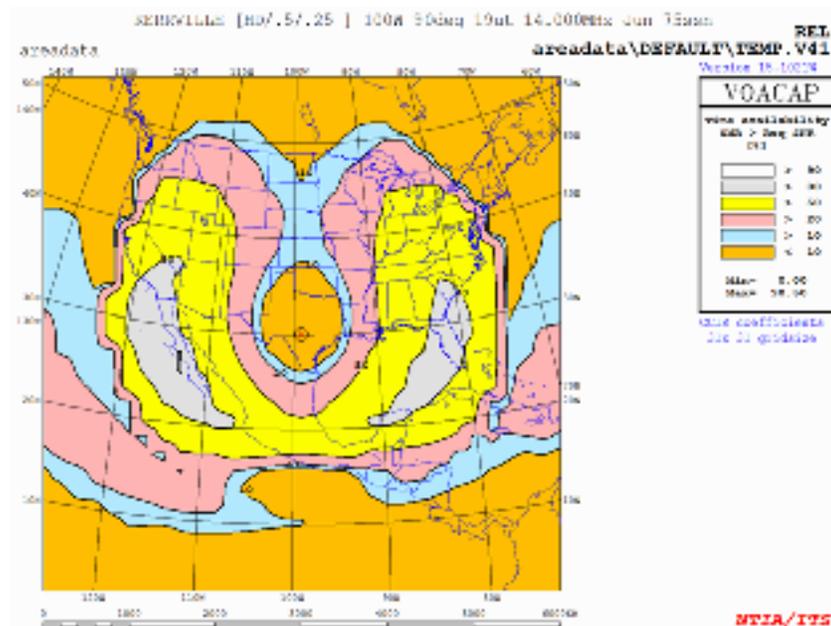
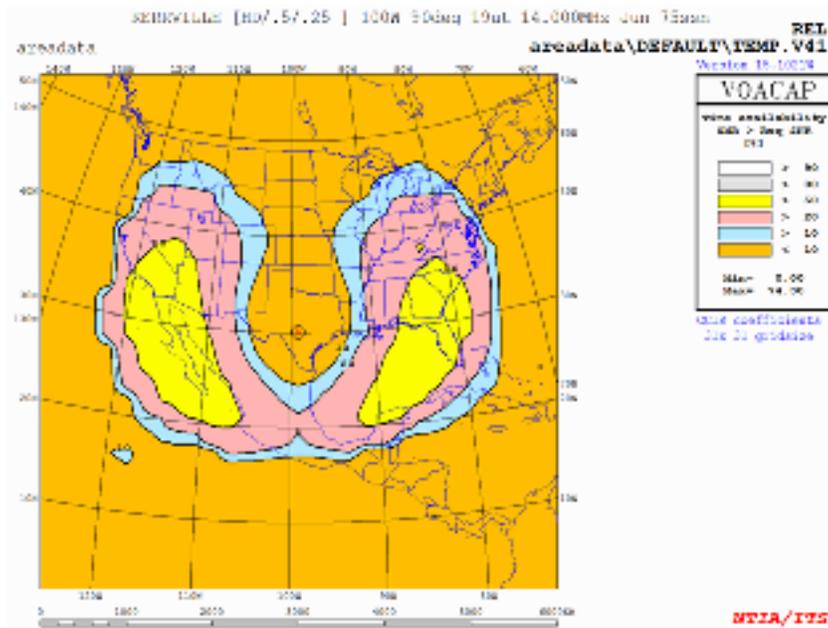


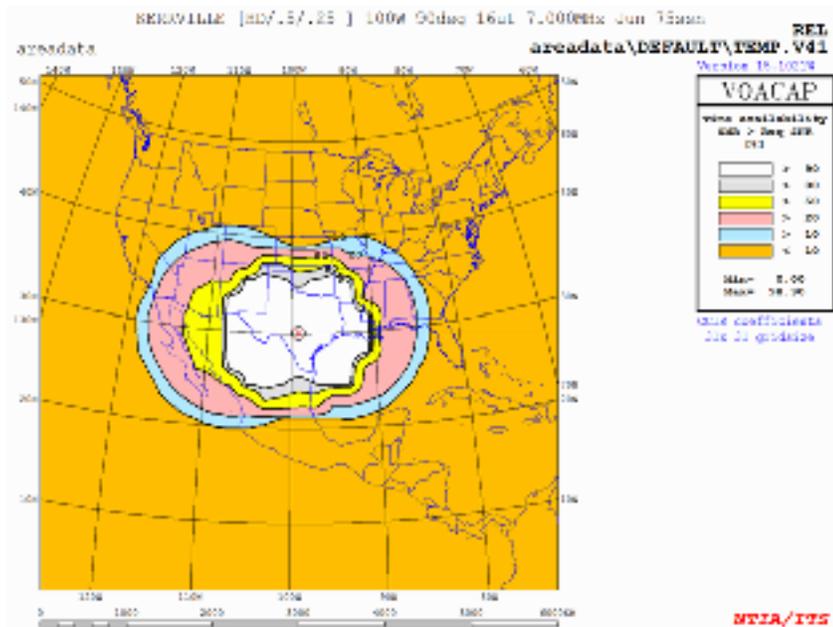
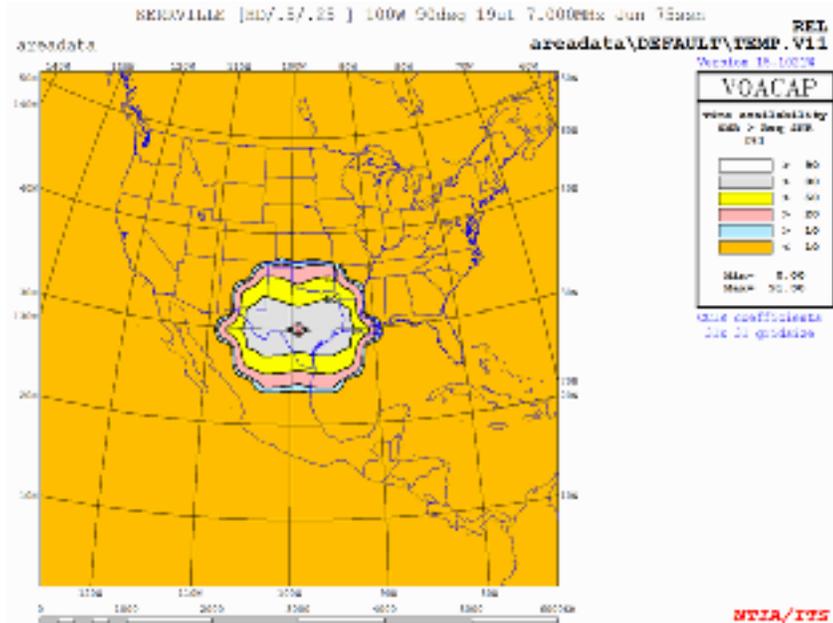
Frequency

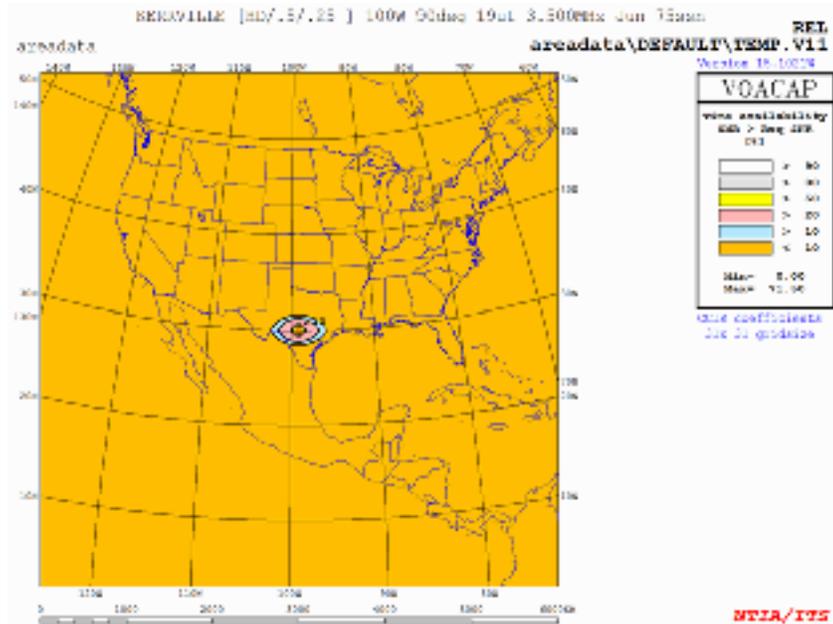
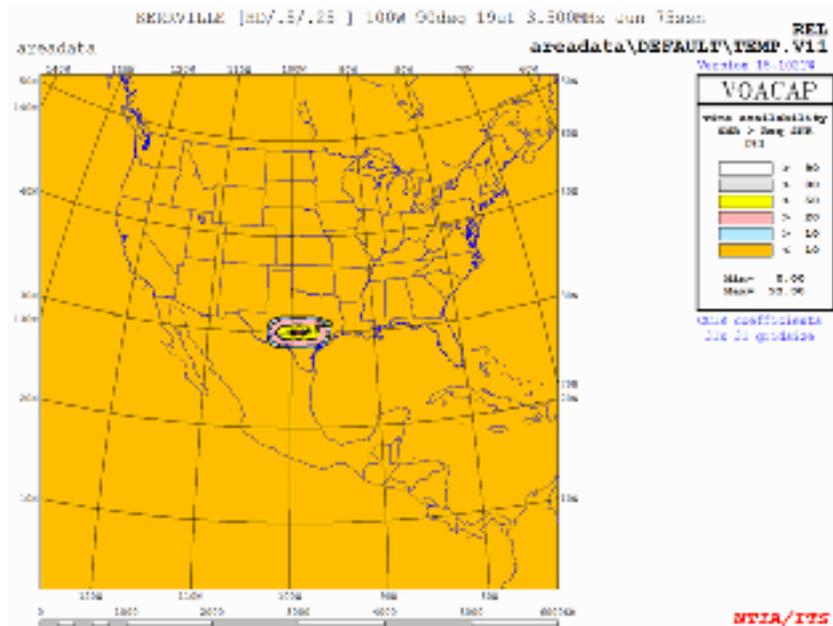
Date (month) – June

Sunspot Number – 75ssn

9 – For the charts labeled “REL”, numbers on chart are percentage of days that SNR exceeds required SNR (3 dB for CW and 7 DB for SSB).
10 – For the charts labeled “MUF”, numbers on chart are the MUF.







73,

Kerry - K5KS

Scanner Receivers in the Ham Shack

With the increasing movement to digital modulation by Public Service Agencies, Monitoring by Scanner Enthusiasts has become plagued with bursts of annoying noise. As populations increase and more demands are placed on Law Enforcement and Fire Departments, the need for additional communication channels exceeds the capacity of analog radios and forces the move to digital modes.

As many Monitoring Hobbyists either abandon their scanners or upgrade to new, digital capable receivers, the older equipment becomes available at very low cost. Many are turning up at garage sales and thrift shops for near give-away prices.

But what use are they?

Adding a scanner to the ham shack brings some interesting capabilities.

Satellites: Program the frequencies for Low Earth Orbit FM satellites and the International Space Station into your scanner. This won't be the same as having a dedicated Amateur Satellite rig but may alert you when a "Bird" comes into range, without tying up your transceiver. Check out <http://www.amsat.org/wordpress/wp-content/uploads/2013/06/easysat.pdf> for information on satellites that may be within your scanner's capabilities.

Propagation Monitor: Add the FM call frequencies for any ham bands that your scanner covers. You may hear a passing motorist or out of town visitor, or, you may catch an unusual Sporadic E or Tropospheric band opening. One morning while I was chasing DX on 20 meters, my monitor locked on to an amazingly strong station calling

CQ on 29.600 MHz. I switched to 10 meter FM and had a pleasant QSO with YV5IUA in Caracas Venezuela, I would have missed that contact had I not been scanning those frequencies.

You may also want to add distant repeaters, out to a couple hundred miles, just to watch for Tropospheric openings and meteor scatter.

Emergency Communication: During Emergency and Sky-warn operations, interfacing with other services may be a life saver. Monitoring FRS, GMRS and MURS channels could lead to catching a "Mayday" call, or allow co-operation with local Neighborhood Watch or CERT organizations. Monitoring aviation Uni-com, Civil Air Patrol and Marine frequencies (if you are close to navigable waters) could be helpful in a Search And Rescue operation. At the risk of mentioning the unmentionable, if your scanner will tune down that far, Citizen's Band channel 9 (27.065 MHz.) is still an official emergency communications frequency.

We Hams excel at re-purposing equipment deemed useless by others, so dig out that old scanner and add your own ideas to this list.

73,

Curtis - AD5UZ

[Stay Tuned for more in following issues of The STATIC](#)

[If there are topics you would like to see, please let us know. We will work to bring them to print in future editions](#)

Upcoming Conventions

West Gulf Division
Convention
Ham-Com
June 9, 2017
Irving, TX

ARRL Convention
DFW Metroplex Clubs
<http://www.hamcom.org>

Committee Reports

Repeater - Curtis Eastwood AD5UZ

There is no news since the last report

Red Cross Liaison - Terry Hipkind W0HIP



The Sheriff's department hosted a Disaster Assessment Exercise on 05/25/2017. Red Cross members, members of the Sheriff's CERT and six members of our ARES team participated in this exercise. Three teams were dispatched to different areas of town to assess the "damage" in those areas. As the different street reports were completed, our ARES members transmitted the results back to the

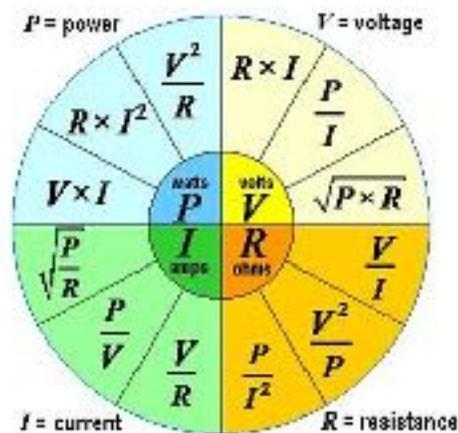
Chapter. This information was then compiled and sent to Austin via Packet. The Kerr County Emergency Coordinator was pleased with the results and thanked all who participated.

Following all the work on the antennas, computer swaps and layout reconfiguration, this exercise presented our radio room with it's maiden voyage and all worked well.

There are currently no exercises planned for Kerr County or the Red Cross. Disasters, however, are not planned. This area is prone to floods and wild fires - be prepared.

73,Terry - W0HIP

VE Testing - Fred Gilmore W0LPD



In our May 13th VE session we had a total of 15 candidates from Dale's Technician class, and one walk-in to upgrade his license for a total of 16

candidates. This resulted in 12 new hams and one upgrade.

- (T) Henry Ortega - KG5TKV
- (T) Bob Turner - KG5TKU
- (T) Brown Stokes - KG5TKT
- (T) Carol Little - KG5TKS
- (T) Jennifer Sanders - KG5TKR
- (T) Jocelyn Ritz - KG5TKQ
- (T) Robert Sanders - KG5TKP
- (T) David Larsen - KG5TKO
- (T) Arthur Hughes -
- (T) Ryan Stricker - KG5TKN
- (T) Fred Andreas - KG5TKM
- (T) Craig Boyer - KG5TKL
- (G) Clayson Lambert - W5CHL

Be sure and say congratulations the next time you see them.

Congratulations also go to Lawrence Gullie, who did not qualify during the May 13 session, but did qualify at the session held on May 28.

Thanks to the 10 VE's who helped with the three teams of graders which made the session go a lot smoother. AD5UZ, AF5AO, K4DG, K5AFC, K5HV, K5NOW, K5YB, KF5AIE, N4YPT and W5MIG. Thanks to K7HER and K5NOW for serving at the May 28 session to help Lawrence get his Ticket. Patti (K7HER) even baked him a pineapple upside down cake, noting he would have to pass before we could celebrate. We did get to eat it.

73,
W0LPD

ARES - Terry Hipkind W0HIP

Please refer to the Red Cross above since both activities were combined in the latest exercise

SKYWARN - Larry Altman N5QGD

There is no news since the last report

Club Station Review - Dale Gaudier K4DG

**Station Review Committee - Final Report and
Recommendations - DRAFT**

Executive Summary

The Station Review Committee has completed the following tasks:



- Updated inventory of club station equipment, with proposed disposition of surplus equipment
- Reviewed club station equipment for operability and safety, with recommendations for improvement
- Tested club station antennas and feedlines and replaced/repaired those not working properly; made recommendations for upgraded HF and VHF/UHF antennas
- Updated computer software and reviewed operability with other station equipment

The Station Review Committee has made specific recommendations to the club membership, as noted below. These include:

- Sale/auction of most surplus club equipment, including the two current HF rigs in use at the station, and purchase of one or more modern HF rigs

- Purchase of a multiband HF vertical (e.g. Cushcraft R9) to replace the current MA5V vertical
 - Purchase of a 2m/70cm vertical (e.g. Comet GP-1 or GP-3) to replace the non-functioning Arrow dual-band antenna
-

Background

The Station Review Committee was instituted in early January 2017 at the request of the President of the Hill Country Amateur Radio Club (HCARC), Dale Gaudier, K4DG.

Purpose of the Committee

The primary purpose of the Committee was to review the current equipment at the club station (N5HR) at the Red Cross and make recommendations to club membership for any improvements.

This involved the following tasks:

- 1. Identify primary uses/users of the club station**
 - Who are the primary users of the club station?
 - What are the primary uses of the club station?
 - What equipment is necessary to support the identified users/uses of the club station?
- 2. Inventory radios, antennas and accessory equipment (power supplies, computers, spare cables, etc.)**
 - Determine whether current radios, antennas and accessory equipment are performing properly
 - Determine which items may be surplus to club's needs and make recommendations as to their disposition
- 3. Review station equipment operability for intended uses**
 - Is the equipment layout conducive to good workflow during times of heavy use (e.g. emergency communications, occasional contesting)?

- Is equipment easy to set up and use?
- Are there written instructions on how to set up equipment (activate/deactivate procedures)?
- Are all cables (power, feedlines and accessory lines, etc.) labeled and easily traceable?

4. Identify and correct any safety issues

- Are there safety issues? For example, loose or exposed wiring?
- Is electrical wiring up to code? Is all equipment properly grounded (electrical power and RF grounds)?

5. Review antenna system

- Are current club station antennas and feedlines working properly and in good working condition?
- Are the current antennas meeting the current and future needs of the club? Do they provide adequate coverage for local, regional, national and international operations, taking into account typical uses of the station for emergency communications and occasional contesting?

6. Review station computers

- Are the station computers operating properly?
- What operating system(s) are they running?
- Do they have latest software updates, including firewall/virus protection?
- Is there sufficient disk memory to run needed programs?
- Is connectivity (Wi-Fi/Internet) working correctly?

7. Looking to the future, what recommendations does the committee have to insure operability and usability of the club station for the next five (5) years?

- What radio equipment is needed?
- Do the club computers need to be upgraded?
- Any other recommendations for improving the operability and usability of the club station?

Committee Members

The following were the invited members of the Committee:

Terry Hipskind - WØHIP	Harvey Vordenbaum - K5HV
Gary Johnson - N5BAA	Fred Gilmore - WØLPD
Robert Russell - KF5AIE	Larry Altman - N5QGD
Starr Center - KI5SC	Mike Connor - K5MJC

In addition, all members of the HCARC were invited to sit in on the several formal meetings of the Committee and contribute their ideas for station improvement.

Meetings

Committee meetings were held on Jan. 21, Feb. 18, March 18, and May 20, 2017

In addition, there were several work days where Committee members took inventory, rearranged some station equipment and tested and repaired/replaced several of the antennas at the club station.

Discussion and Recommendations

1. Primary uses/users of the club station

The Committee identified three primary groups of users and uses for the club station:

1. Emergency communications
2. Contesting
3. Casual use by members

Emergency communications.

The HCARC has enjoyed free use of the radio room at the Red Cross for many years. There is no charge for rent, electricity or internet service made by the Red Cross. This is because the HCARC and its membership have been available to supply backup emergency communications on behalf of the Red Cross when called upon. More recently, the HCARC and the Hill Country chapter of the Red Cross have entered into a written Memorandum of Understanding (MOU) that formalizes this relationship and sets forth the conditions under which the HCARC can be called upon to support the Red Cross during times of local emergencies.

The Red Cross also allows the HCARC to use its meeting rooms for monthly meetings and for other functions (training, license classes, etc.) without charge.

The HCARC has also entered into a MOU with the Kerr County Sheriff's Dept., Office of Emergency Management, to supply backup communications in case of a county-wide emergency.

HCARC members, along with local ARES members have participated in a number of Red Cross and Kerr County emergency/disaster exercises over the past several years, most recently on May 25, 2017. These exercises have provided realistic training in emergency communications for HCARC and ARES members and have demonstrated the need for certain types of communications equipment.

For local communications, VHF voice and digital (packet) communications are needed. The club station currently has a dual band 2m/70cm FM transceiver and antenna dedicated to VHF/UHF voice communications and one 2m transceiver and antenna dedicated to VHF packet.

The dual band transceiver is normally used for voice communication via the club repeater or directly (line-of-sight simplex).

The 2m transceiver used for VHF packet operates in simplex mode and is controlled by a dedicated computer at the club station.

The club station lacks appropriate VHF/UHF gain antennas to enable linking into more distant stations/repeaters beyond about 25-30 miles. This means that communications beyond this range must occur using other means, such as HF, internet or mobile phone. During a true emergency, neither the internet nor cell phone network can be relied upon. We have demonstrated that HF links can be established with San Antonio and Austin using the current 80m and 40m NVIS antennas. However, links beyond 150 miles or so on the lower HF bands are problematic due to the HF antennas currently in use at the club station.

It would be desirable to be able to establish longer distance reliable VHF/UHF links for voice and digital communications at least out to Boerne and Fredericksburg which lie just beyond the range of the omnidirectional 2m antennas currently in use at the club station. These could take the form of switchable VHF/UHF gain antennas (Yagis) aimed in fixed directions, or a single Yagi mounted on a lightweight mast and rotor on the club's 45 foot high tower at the Red Cross.

Currently, for HF communications, the club has separate home-brew 80m and 40m NVIS antennas, which give reasonable coverage out to 150-200 miles, and a multiband (20m-17-15m-12m-10m) vertical antenna (Cushcraft MA5V). Both sets of antennas are omnidirectional in coverage. For HF communications, it would be desirable to have an antenna that provides a more desirable low angle of radiation on the lower HF bands (80m and 40m especially) that would enable

communications beyond the 150-200 mile capability of the current 80m and 40m NVIS antennas¹. This is especially important for emergency communications during the night when propagation on the upper HF bands makes it difficult to communicate over intermediate distances (150 miles to 1500 miles) that would be needed to make contact if there was a widespread regional emergency. As a side benefit, such an antenna would make the club station more desirable for occasional contest use and casual operating in the evening and night.

The club currently has two HF transceivers that can be operated simultaneously. One radio is a Kenwood TS-570D and the other an Icom IC-746. Both are around 20 years old. Spare/repair parts are not readily available. The TS-570D has lost its ability to store frequencies in its memory making it difficult to use for emergency communications where the ability to scan through designated emergency frequencies rapidly is important². The radios have different menu systems and names for functions. This makes it difficult for an operator who is unfamiliar with these radios to quickly set them up and begin communicating. They both lack a simple way to restore them to a desired state, such as for emergency communications, after being used for other purposes (contesting, casual operations, etc.). Both radios can be controlled by a computer but their communications protocols (CAT) are completely different. Interfacing them to a computer requires separate outboard modems due to differing electrical connections and protocols.

¹ Due to the location of the club station tower at the Red Cross, it is not feasible to use a regular HF Yagi. A smaller directional type antenna, such as a Hexbeam, might be a possibility but is not being proposed at this time due to space issues on the existing tower at the Red Cross.

² The backup battery in the TS-570D has been replaced but the memory function of the radio still doesn't work.

For emergency communications it would be desirable to have two separate transceivers (or one transceiver capable of operating simultaneously on two bands). This would enable monitoring and communicating on two bands at the same time. Communications would primarily be HF voice and digital (packet or similar). Such radios would need good input isolation to prevent crosstalk/fundamental overload issues. Having the ability to operate simultaneously on two bands would allow communications both locally/regionally (e.g. on 80m or 40m) and over longer distances (e.g. on 30m, 20m, etc.) where reporting on local/regional needs can be relayed outside the affected area.

Such transceivers should be fully computer controlled, have built in tuners, operate off 12VDC (or via 120VAC through an appropriate power supply) and preferably be easily interfaced for digital modes. Both should be identical so that there is no learning curve for an operator who has to move between them. There should be a way to save and restore the “state” of the radio so that the radio can be set to operate with all desired settings/characteristics with a simple button push or menu setting. The radio should be easy to set up and intuitive in use. The ability to update/add features via firmware/software would be desirable. The capability to see band activity (bandscope/panadapter) and video output would be a plus. Lastly, it would be desirable if the radio could be remotely accessed (e.g. via the internet) in a secure fashion so that an operator does not have to be physically present to turn it on or operate it. This would help expand the pool of individuals who could operate the station in an emergency. It would also enable a ham who is working at a disaster site to log into the club’s radio(s) and channel emergency traffic via HF links without needing an operator to be at the club station.

There is no identified need for RF power output beyond the 100 watts normally output by most modern

transceivers. The club station does not have an HF power amplifier and none is warranted at this time

Contesting.

Radio equipment that meets the above criteria for emergency communications would also be desirable for contesting use. The main criteria for contesting is to be frequency agile to deal with changing propagation during a contest and to have excellent receive characteristics, e.g. sensitivity and selectivity when there are a large number of closely spaced signal present on the band. Noise reduction capabilities are a plus due to the high level of ambient RF noise (QRN) at the Red Cross. The radios should be fully controllable by computer logging software such as N1MM+. The ability to easily set up digital modes, especially RTTY, would be a plus. Being able to monitor large sections of a band to see openings and activity using a bandscope or panadapter would be desirable. Lastly, the ability to operate simultaneously on two bands would be desirable (so-called SO2R, single operator two radio), as this is a popular entry class for many contests.

Casual Operation.

The above criteria for a radio that is desirable for emergency communications should also make it desirable for casual operation. Ease of use and intuitive operation would be a plus. Remote connectivity would allow HCARC members who don't have the means for owning their own station, or who live in antenna restricted neighborhoods, to access the club station via the internet without having to gain access into the Red Cross and radio room.

2. Equipment Inventory

The club station equipment was previously inventoried in March 2013. The Committee updated this inventory in February 2017. See attached updated inventory list.

Current equipment has been tagged with inventory tags with inventory numbers as noted on the inventory list. A hard copy of this equipment inventory will also be kept at the club station in a green binder.

Some items on the original list could not be found; it is assumed these were loaned out or donated without recording to whom the item was loaned/donated. Most items on the updated list are located at the club station radio room at the Red Cross. Some, as noted, have been loaned out to members.

Many of the inventoried items were donated to the club. However, over time, these items have accumulated in the radio room to the point where they became a safety hazard. Many items were in unknown condition. The club has accumulated multiple versions of many items, such as power supplies, microphones, headphones, and computer parts, along with many, many cables. There are also seven HF rigs (only two in use at the club station), multiple tuners, an antenna rotor and controller, a large HF beam multiple unused cables, etc., all as noted in the current inventory.

The Committee recommends that most of the surplus equipment be sold. This includes both the HF rigs in current use at the club station and several of the other HF rigs, the rotor and controller and HF beam. Many items, including the HF rigs, are over 15-20 years old and spare parts are no longer available. The Committee recommends that the money earned from surplus equipment sales be used to purchase one or more modern HF rigs for use at the club station³. The Committee also recommends that one of the current HF rigs, such as the TS-140, TS-440 or FT757GXII, be kept as a backup rig, which can also be loaned out to newer hams.

³ The type of HF rig(s) is under review and will depend, in part, on desired features and available funds.

The Committee suggests that sales of surplus equipment be done by offering them first to club members via auction. The Committee suggests holding a “silent” type auction in conjunction with Field Day. This may include an online version the week prior to Field Day (to allow members who won’t be able to attend Field Day to bid on items) followed by a “live” silent auction at Field Day. Any equipment not sold via auction will be sold at the Austin hamfest in early August with the remainder sold on eBay.

The Committee also recommends that the club adopt and publish a policy for receiving donations of amateur radio equipment. This policy should make it clear that the club will gladly accept donations of **working** amateur radio equipment with the understanding that, at the discretion of the club’s Executive Committee, any such donated item of equipment may be sold at any time and the funds used for the general benefit of all club members, or that equipment may be retained for the general use of club members.

3. Station Equipment Operability

As noted above, most current station equipment is at least 15 years old, with some over 20 years old, including most of the HF rigs. Due to their age, spare parts/repair parts are not readily available for these HF rigs. The Kenwood TS-570D, which is currently in use as one of the two HF active HF rigs, will no longer hold its memories, even after the backup battery was replaced. This makes this rig undesirable for emergency communications as multiple fixed emergency frequencies need to be easily accessed by operators. Both the TS570D and Icom IC-746 have completely different menu systems and differing naming conventions for functions. This makes it difficult for the average operator to easily set up and operate either rig or to switch between the two. Neither rig is designed to directly operate digital modes and require outboard

equipment to do so. Digital modes are especially important for emergency communications. Both rigs can be interfaced with a computer and operated using their proprietary CAT protocols, but set up is different for both.

For these reasons the Committee recommends that both rigs be replaced by one or two identical modern rigs that can more easily operate digital modes, use the same CAT protocol, can have its firmware/software updated to include new/improved features and, preferably, have remote access capabilities. This latter function would allow club members to access the rigs remotely via the internet, expanding the accessibility of the club's station to members.

Once the surplus station equipment has been disposed of, the Committee recommends that operating manuals for the major pieces of station equipment be collected in a single readily-available binder, along with station start up/shut down instructions.

4. Safety

The electrical wiring of the club station was inspected and appears to be properly grounded. The electrical breaker supplying power to the station was located and noted on the breaker panel at the Red Cross. This location (which is outside the station) will be noted prominently in the station area so users will know where to go to turn off power in case of an emergency.

Station RF and lightning grounds appear adequate. Per operating procedures, all feedlines enter the radio room via a single conduit and are connected via feed-through connectors bonded to a metal entry box that is bonded to electrical and RF grounds. Unused antenna feed-throughs are shorted using shorting plugs. The feedlines and feed-throughs were reorganized to eliminate the need for the electrical coax switch

(Ameritron RCS-4). Each feedline position and corresponding antenna has been clearly identified and color coded in the station.

The Committee recommends that the club purchase a CO₂ fire extinguisher and mount it in an easily accessible position in the radio room. A first aid kit should also be purchased and kept in the radio room.

5. Antennas

The club currently has five antennas situated at the top of a 45 foot high Rohn 25 tower at the rear corner of the Red Cross adjacent the club's radio room:

- 80m inverted Vee dipole (homebrew 80m NVIS)
- 40m inverted Vee dipole (homebrew 40m NVIS)
- Cushcraft MA5V vertical
(20m-17m-15m-12m-10m)
- 2m/70cm J-pole (Arrow J-pole) - VHF/UHF FM voice
- 2m groundplane (manufacturer unknown) - 2m packet

All feedlines are RG-8 or equivalent.

Antennas and feedlines were tested on several occasions since November 2016. All feedlines appear to be in good shape; none exhibited any anomalies when tested using a RigExpert AA-54 antenna analyzer.

The Cushcraft MA5V five band vertical is working properly.

The 2m groundplane antenna for 2m packet is working properly.

The Arrow J-pole dual-band antenna is working properly on 2m. However, it shows extremely high SWR on 70cm and is unusable on this band. Based on reported issues with this antenna, it is likely oxidation has occurred between the 70cm radiator and the base element. However this can only be determined if the antenna is brought down. Due to the location of this antenna near the unguied top of the tower, it is not safe to remove this antenna without additional support, such as the use of temporary guys or a bucket truck or crane.

When the 80m and 40m inverted Vees were first tested it was apparent there were serious issues with both antennas. Neither showed resonance in their respective bands and SWR at the resonance points was unacceptable ($>2:1$).

Both antennas were inspected. The center wood insulators were rotted and silicone weather sealant at the point where the feedline attached to the wire elements was missing. The rope supports for the ends of the wire elements were almost rotted through.

Both antennas were rebuilt using new wire (stranded #14 THHN) and center insulators. The antennas were retested but the resonance issues remained. After some research and computer modeling it was determined that the metal roof of the Red Cross building was seriously detuning the antennas. The antennas are mounted approximately 20 feet above this metal roof. Their feed point impedances were between 10-12.4 ohms instead of the expected 50-70 ohms.

The solution was to place 1:4 baluns at their respective feedpoints to bring the feedpoint impedance to around 50 ohms to match the feedline (50 ohm coax) impedance. This solved the problem. In addition, both antennas were trimmed to make their resonant points close to the most active emergency frequencies.

The Committee has two recommendations for improvements to the antennas in use at the club station:

Arrow 2m/70cm J-pole antenna. Even if this antenna is repairable, the Committee suggests that the club purchase a modern dual-band ground-plane antenna having moderate gain, such as either the Comet GP-1 or GP-3 (\$85 to \$115). This type of antenna is weather sealed and provides some gain over a standard $\frac{1}{4}$ wavelength J-pole or ground-plane antenna. This will improve our coverage area especially for simplex operations.

Cushcraft MA5V vertical antenna. While this antenna is functioning fine, it covers only the five upper HF bands: 20m-17m-15m-12m-10m. This antenna is good for long distance (DX) operations and for communicating beyond the local/regional area (beyond 150-200 miles). The MA5V does not cover the lower HF bands (160m, 80m, 60m, 40m and 30m). The 80m and 40m inverted Vees are strictly for local communications out to 150-200 miles due to their main energy lobes being directed almost straight up (near vertical incidence sky wave, NVIS). It would be preferable for emergency communications, contesting and casual use to be able to communicate beyond 150-200 miles on the lower HF bands. The Committee therefore recommends that the MA5V be sold and replaced with a Cushcraft R9 multiband vertical (approx. \$600). The R9 adds 80m, 40m, 30m and 6m to the bands currently covered by the MA5V. The R9 has essentially the same footprint as the MA5V. With the proposed two radio setup for the club station (see discussion above) this will enable simultaneous local/regional and continental/DX communications to be held on the lower HF bands.

Directional VHF/UHF Antennas. A longer term project should be the addition of one or more 2m/70cm Yagis that can be aimed at packet nodes and repeaters outside the coverage area of the current/proposed

omnidirectional VHF/UHF antennas. This will give the club station linking ability with stations/repeaters in Fredericksburg and Boerne with additional paths for communications outside the Kerrville/Kerr County area in the event of a local emergency.

6. Computers and Software

The club currently has two desktop computers. There are also two laptop computers, an HP and an Acer owned by the club. The computers are used for CAT control of the two HF transceivers, casual logging, occasional contesting and, importantly, to run Echolink and RMS (Winlink) emergency communications systems. To the extent possible operating system and application software have been recently upgraded as part of the Committee's work.

Both desktop computers are quite old and are not easily upgraded. They cannot run current operating systems. The desktop hardware can no longer run many programs necessary for emergency communications. In fact, the club has recently experienced problems using Echolink and RMS over the past few months.

In addition to these problems, the 2m radio that was on loan for the Echolink system has broken down. This radio was also over 20 years old. It has been replaced with another vintage 2m transceiver.

The Committee recommends the following:

Take the existing club station computer that was purchased several years ago and make it the dedicated RMS server by upgrading the software. This can be done at no cost to the club. We will have to use the PK-232 TNC since the old KPC-3 TNC has gone defunct.

Acquire or purchase another computer to run the Echolink system, and place it at the repeater site eliminating the need for a Echolink transceiver, if there is space available at the repeater site. Echolink can be

installed on the control system provided there is internet access. If space or internet access is not available, the other option is to use the RF link to the repeater site, which requires another transceiver, computer and interface.

It would be preferable for both the RMS and Echolink systems to be located either at the repeater site or club station, so that any club member authorized can work on or reboot the computers when required. Technical issues with wireless access will also need to be addressed

The club has two laptop computers, an Acer and a HP. The HP will be used at Field Day. The Committee recommends selling/donating the Acer and acquiring another laptop to run the club station. The new laptop could be used if required in the field, along with the HP laptop. The two old desktop computers which ran both Echolink and RMS should also be scrapped/donated and replaced.



7. Looking to the future, what recommendations does the committee have to insure operability and usability of the club station for the next five (5) years?

The Committee believes that the recommendations set forth above, if adopted by the HCARC membership, will make the club station more accessible to its members, easier to operate and suitable for its intended purposes of providing emergency communication, contesting and casual operation. Over the next few months the Committee will make further recommendations for the purchase of HF radios and station computers. The recommended dual-band 2m/70cm antenna and R9 multiband HF vertical antenna can be purchased and installed at any time once funding is approved by the club membership.

The station review committee has completed the club station's equipment inventory. We will be making proposals to the club membership shortly concerning the disposition of surplus equipment.

We have also completed the work on the 80M and 40M antennas. After adding new baluns to deal with ground effects from the metal roof, we adjusted the dipoles to bring their resonant frequencies close to standard ARES emergency frequencies.

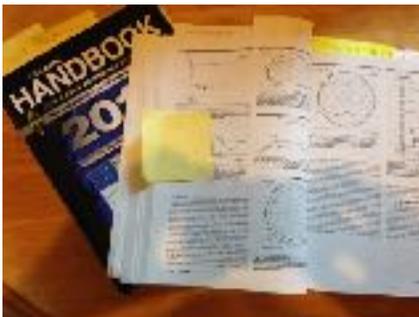
There is some additional antenna work that still needs to be planned to ensure the club station has adequate functionality for emergency communications and normal club member use.

73,
Dale K4DG
Acting Chair

Field Day - Frank Edwards KK5IA

For Field Day this year we are planning on running 4A this year with a long wire loop, an 80-6m OCF, a tri-band beam, and a 80-2m vertical. We may also add some UHF and VHF capabilities. We are planning a Saturday evening dinner of Chicken Fajitas and all the fixings. We are also planning on having a dutch lunch at Bumdoodlers on Friday at 11:30 before going over to OLH to start setup. All are welcome to join us.

73,
Frank - KK5IA



License Study Class - Dale Gaudier K4DG

A technician Class License Class TBD

A General Class Upgrade License Class TBD

An Extra Class Upgrade License Class TBD

Contact Dale Gaudier at k4dg@arrl.net for information about the schedule for the next class

NEWS RE: ARRL

Reportedly the previous story about deleting KH4 is now rescinded.

GO TO ARRL WEBSITE FOR MORE NEWS ABOUT THIS AND OTHER STORIES

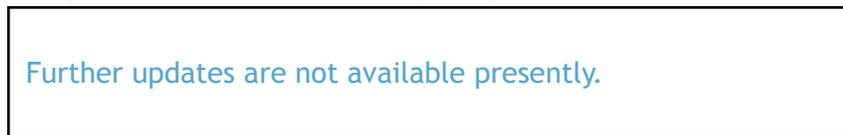
DXing News from DX-WORLD.NET

Please note that the June Update has not been posted in time for publication here. Please check in with the website for the update



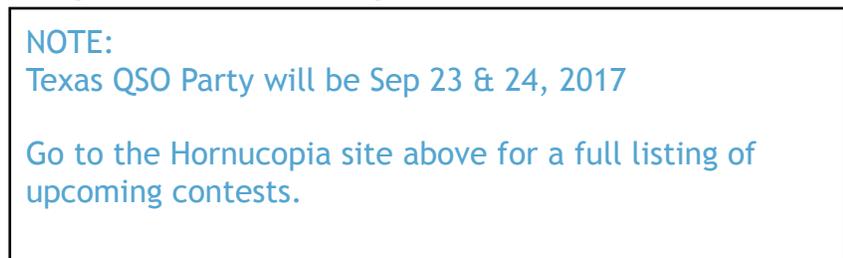
Public Service Events from

<http://sanantoniohams.org/blog/>



Contesting Calendar from

<http://www.hornucopia.com/contestcal/>





Seminol Canyon Texas





HCARC General Information

Repeater: N5HR 146.98(-) Tone 162.2
 General Meeting: First Thursday of every month except December at 7pm at the American Red Cross, 333 Earl Garrett, Kerrville, TX. Meet & Greet begins at 6pm
 Club Net: Every Monday at 7pm on the N5HR Repeater
 Website: www.kerrhams.org
 Email Reflector: To sign up go to http://www.kerrhams.org/general_misc.html
 Facebook: <https://www.facebook.com/groups/hillcountryARC>
 Officers:
 President: Dale Gaudier K4DG k4dg@arrl.net
 Vice President: Gary Johnson N5BAA n5baa@hctc.net
 Treasurer: Dennis Robertson W5FBG robertson@ctesc.net
 Secretary: Robert Russell KF5AIE timberrr66@hotmail.com
 Static Editor: Starr Center KI5SC starr@arrl.net

The HCARC is an ARRL affiliated club

Cover Photo by R. Sanchez
 Inside Photos by A. Center & R. Sanchez
 Back Page Photo by R. Sanchez

The Radio Amateur's Code

The Radio Amateur is:

- CONSIDERATE...He/She never knowingly operates in such a way as to lessen the pleasure of others.
-
- LOYAL...He/She offers loyalty, encouragement and support to other amateurs, local clubs, the IARU Radio Society in his/her country, through which Amateur Radio in his/her country is represented nationally and internationally.
-
- PROGRESSIVE...He/She keeps his/her station up to date. It is well-built and efficient. His/Her operating practice is above reproach.
-
- FRIENDLY...He/She operates slowly and patiently when requested; offers friendly advice and counsel to beginners; kind assistance, cooperation and consideration for the interests of others. These are the marks of the amateur spirit.
-
- BALANCED...Radio is a hobby, never interfering with duties owed to family, job, school or community.
-
- PATRIOTIC...His/her station and skills are always ready for service to country and community.