

The Static

An evolving publication of the Hill Country Amateur Radio Club



...and now a word from the prez.

"Step Up to the Plate" is a phrase that has been around a long time. We could translate that to something pertaining to ham radio.....possibly "Step Up to the Tower" or "Step Up to the Mic". Regardless of the sport or hobby, this is a great phrase that describes so many of our members. If I started listing all who are giving help to others the list would take up the entire Static. K5YB would surely frown at that thought.

At the moment, I am thinking about Dale Gaudier, K4DG, Fred Gilmore, W0LPD, Don Murray, W4WJ, and Kerry Sandstrom, K5KS. Why am I thinking about them? Dale and Fred have served as instructor and assistant instructor respectively for two Club Ed technician classes. Their students have

made great scores on the technician class test. Now, with the new semester approaching, Dale will be back as the lead instructor and assisted by Don and Kerry for another class. If you put pencil and paper to the number of hours involved you get up into some mighty high numbers. These folks are giving up Saturdays to help promote the hobby of Ham Radio. I for one am very appreciative to all of them for committing their time and energy to this cause. By the way, let's also thank each family for supporting the efforts of these five hams.

It's really great to know folks who will "Step Up to the Tower" to help others with all areas of Ham Radio. Has someone helped you lately? How about remembering them with a ticket at the next meeting. Until that time I will say.....

73,

Marilyn KE5DDR

Well, it's never too early to have a party so let's talk about the club Christmas party. This year we'll hold it at First Presbyterian Church on December 1 at 11:30 a.m. to 2:30 p.m. As in the past, this will be a covered dish affair with meats provided. We'll have coffee and tea available also. There will be several more reminders of this and as in years past, there are no current plans for karaoke

Thanks to Gale Heise for organizing and getting a Wednesday night 10 meter net

operational. This net meets at 7 p.m. on 28.365 MHz and gives Technician class operators a chance to get the feel of HF operations. Ten Meters was chosen because of its allocation of spectrum for Technician use. On Wednesday, August 15, we had a trial run on a 40 meter net that went pretty well. Ten hams checked in, one from Austin. Operators were using from 50 watts to 100 watts of power and antennas in use included, dipoles, off center fed dipoles, loops and verticals. Thanks to all who have participated in the nets.

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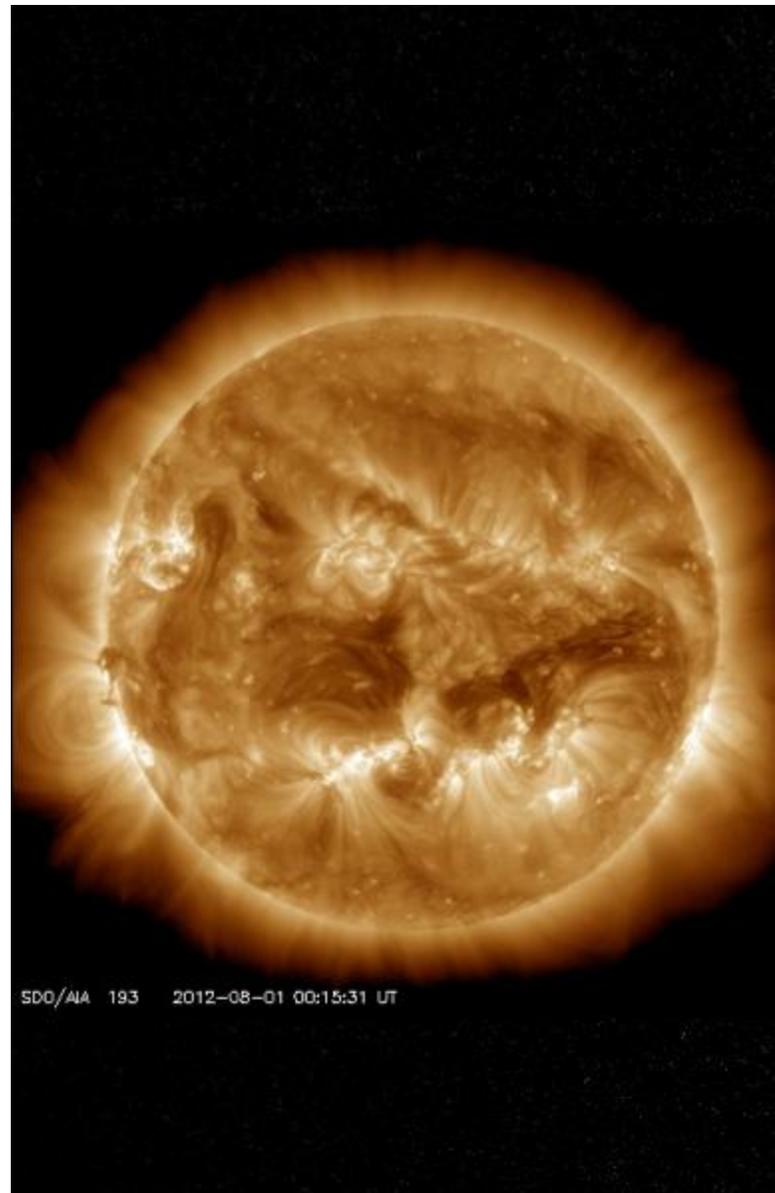
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Spherical, Even When It Freaks Out

August 16, 2012 | [0](#)



[Enlarge](#) Courtesy of NASA/SDO and the AIA, EVE, and HMI science teams. [MORE IMAGES](#)

The 11-year solar cycle swoops between peaks of intense magnetic activity—apparent as sunspots, coronal loops and flares—and relative quiescence, when the sun's face is free of blemishes. New research shows that despite this tumult, the sun remains remarkably constant in its globular shape—findings that have left researchers scratching their heads.

Earth's closest star is one of the roundest objects humans [have measured](#). If you shrank the sun down to beach ball size, the difference between its north-south and the east-west diameters would be thinner than the width of a human hair, says [Jeffery Kuhn](#), a physicist and solar researcher at the University of Hawaii at Manoa. "Not only is it very round, but it's too round," he adds. The sun is more spherical and more invariable than theories predict. Scientists have long tried to assess the sun's shape, in part because understanding its structure would help them predict when a flare might shoot toward Earth and disrupt communication satellites and power grids. Measuring the orb has been tricky, however, and no two observations have matched exactly, Kuhn says. Researchers accounted for the discrepancies by assuming the sun's figure varied with the solar cycle.

To measure the sun's precise shape, Kuhn and his colleagues analyzed images captured by the [Helioseismic and Magnetic Imager](#) (HMI) carried on board NASA's [Solar Dynamics Observatory](#). They shared [their findings](#) online August 16 in *Science*. The HMI snaps nearly 15,000 portraits of the sun daily. It measures the sun's magnetic field flux and seismic surface

ripples generated by constantly churning plasma. In this August 1 image, the solar disk captured by the HMI (right) shows the sun's light intensity the other view, obtained by the Atmospheric Imaging Assembly on the spacecraft, renders the sun in extreme ultraviolet.

In the last two years, the sun's activity has exploded after a long period of relative quiescence, giving Kuhn and his colleagues an opportunity to watch the evolution of the solar cycle. Previous instruments for observing the star were mostly ground-based, and thus had to peer through the blur of Earth's atmosphere. Researchers may have thus measured atmospheric changes correlated with the solar cycle and not changes in the star itself, Kuhn says.

Although the HMI images are crisper and more accurate than ground-based observations, researchers still need to account for tiny movements of the spacecraft and distortions in its lenses. To sort out the sun's movements from those of the probe, they rotate the satellite and combine multiple images to eliminate distortions. The probe takes nearly a full day to roll through its calibration and does so every six months.

—*Marissa Fessenden*

The following article is by Dan Romanchik. He writes a monthly column that appears in over 300 amateur radio club newsletters.

Is Amateur Radio Too Focused on EmComm?

By Dan Romanchik, KB6NU

On the HamRadioHelpGroup, a Yahoo Group mailing list for anyone looking for help with anything related to amateur radio, one ham asked "Over lunch today I read the September issue of QST, which is heavily EmComm oriented. The articles were interesting, but the op-ed piece on page 98 seemed a little over the top to me...Has this focus of this intensity always been a part of ham radio and I just wasn't expecting it? How has it evolved over the years?"

To answer the question, another replied by posting Section 97.1, namely the principles behind the amateur radio service:

Sec. 97.1 Basis and purpose.

The rules and regulations in this part are designed to provide an amateur radio service having a fundamental purpose as expressed in the following principles:

(a) Recognition and enhancement of the value of the amateur service to the public as a voluntary noncommercial communication service, particularly with respect to providing emergency communications.

(b) Continuation and extension of the amateur's proven ability to contribute to the advancement of the radio art.

(c) Encouragement and improvement of the amateur service through rules which provide for advancing skills in both the communication and technical phases of the art.

(d) Expansion of the existing reservoir within the amateur radio service of trained operators, technicians, and electronics experts.

(e) Continuation and extension of the amateur's unique ability to enhance international goodwill.

He went on to say, "I think that 97.1(a) addresses your question."

I like that reply a lot. First, it shows that providing emergency and public-service communications has been a part of amateur radio since its beginnings.

Some hams are extremely focused on this, and I applaud them. In my opinion, the piece referred to in the latest QST was not over the top.

I think, however, that some hams do sometimes go overboard on emcomm,

and act as if it's the only reason that ham radio exists. It's not. As you can see, the rules describe five different "purposes" for amateur radio. Emcomm might be the first, but it's only one of five. We need to keep in mind the other four as well. I personally like (e), and would like to see amateur radio actually do more to promote international good will.

What do you think?

When he's not pondering the place of emergency communications in amateur radio, Dan, KB6NU, writes books about ham radio. He is currently feverishly trying to finish the No-Nonsense Extra Class License Guide. You can read excerpts from this upcoming book on his website, <http://www.kb6nu.com/>. You can e-mail him with comments, questions, compliments, or brickbats at cwgeek@kb6nu.com.

So far the Hill Country has missed any precipitation from the 2012 hurricane season. The National Weather Service recently put out a prediction that a more normal storm pattern would probably begin about September 10. Here's a website to keep tabs on hurricane activity. <http://www.nhc.noaa.gov/?atlc>

What Every Ham Should Know

This is the first of a series of a series of articles aimed at the ham that is just starting his amateur radio career. As always when you are listening to me, some of this is my personal opinion. If you talk to others, they may have different opinions. If you have questions, I will be happy to answer them. You can ask me in person at a club meeting or send me an e-mail at k5ks@arri.net. If anyone has additional ideas, I suspect our Static editor will be happy to include them in the next issue.

This month's topic is finding a station location for your new radio station. What are the basic requirements? Electric power, a way to get your antenna transmission line to the radio, space for your radio and its accessories, a place where noise from your operation won't be disruptive to those around you, and somewhere to store things like a logbook, world atlas, mode/frequency table for your license class, etc.

Let's talk about electricity first. Your transceiver (yes, it's probably a transceiver, abbreviated XCVR) will probably have a separate power supply which converts the AC power, typically 120 VAC, to 12-14 VDC for your XCVR. The typical modern transceiver (~100 W) requires 25 A at 12-14 VDC. This is roughly 350 W from the AC power line. While it's not essential, many hams like to have a computer at their operating position. Computers take a lot of electricity. Small desktops require 250

W while large desktops may have 500 W or more power supplies. Even laptops require 200 w or so. If you plan on using a computer, make sure you include its power requirements. Other accessories you may have that require electricity are a clock, light, an audio filter (if your XCVR doesn't have a built in one), and an electronic keyer (if not a part of your XCVR and you want to run CW).

Bottom line, you should have a dedicated 10-15 A circuit for your station. This means that the only outlets on that particular breaker or fuse are the ones you're using for your station. If you want to run a high power amplifier, you will probably need a 240 VAC 10-15 A circuit for the amplifier.

Let's take a look at the antenna transmission line. Where ever you put your station, you will need an antenna. Depending on where you live, the antenna may be an elaborate array on a tower, a wire antenna in your attic, a wire run between a couple trees in your yard or perhaps a ground-mounted vertical. There are numerous possibilities limited only by your imagination and what you're willing to spend. No matter what you use for an antenna, it will have a transmission line between its feed-point and your XCVR. This could be a parallel wire transmission line, often called "twin lead" or "ladder line" depending on what it looks like, it could be a coaxial cable or even a single wire. You will also need some kind of ground wire.

You will want to make the transmission line as short as possible. You will also want to avoid running the transmission line all over the inside of your house. You will probably also want to avoid having the transmission line running across your floor. When you look at all these desires, you will probably come to the conclusion that your station location should be on an outside wall, probably with a conveniently located window to bring the transmission line into the house. In the interests of keeping the transmission line short, it would be nice if the station location is near where you want to put your antenna. In a future month we'll look at choosing a location for your antenna.

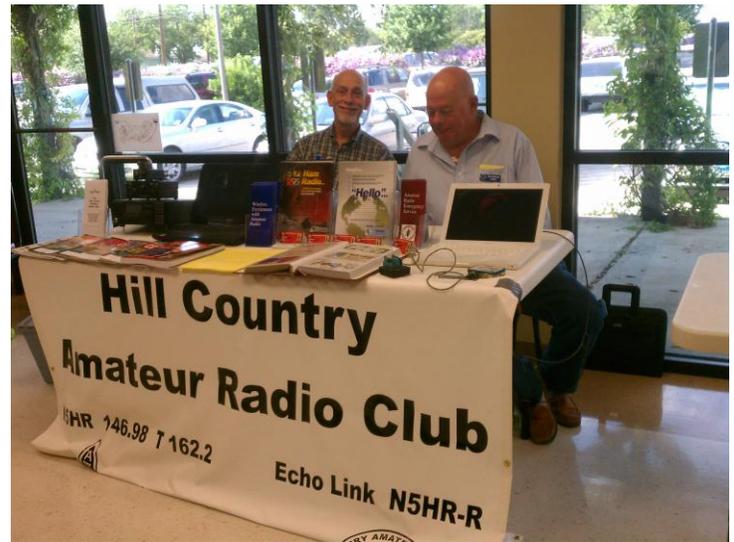
You will need some space for your equipment and other things you will want to have handy. Probably the minimum size is a table/desk about 2' X 3'. This will give you room for your XCVR, its power supply, speaker, clock, etc. Sometimes, you can put the power supply and speaker on a shelf under the desk/table. You have to be careful that the power supply has adequate ventilation if you choose to put it on a shelf. It will run hot! You may want to have enough room to have a cup of coffee or an adult beverage (known as a cold 807!!) at your operating position. Other things you might like to have handy are your computer/display, an atlas (US or world depending on where you're working), a handbook, current

QST (for when propagation “CONDX” aren’t very good), logbook (yes, many hams still keep a log even though not a legal requirement), operating aids such as a table of authorized frequencies, etc. Years ago when equipment was bigger a door on a couple saw horses was a typical hams operating table. It is still good if you have the room and need the space.

Believe it or not, many non-hams find the noise of ham operation unpleasant. If possible you should find a station location where the noise won’t disturb other family members. Some of the noise sources you can’t do anything about such as the fan in many rigs and the clicking relays which are also still in many modern rigs. Other noise sources you can reduce or eliminate. For example, you can use a headset/earphones instead of a speaker and you can use CW or one of the digital modes where you don’t speak (you wouldn’t believe how loud people speak into their microphones in the “heat of battle”!).

Well, that’s it for this first article. In succeeding issues, we’ll cover antennas, transmission lines, grounds, operating practices, etc. ‘Til then, have fun.

73, Kerry, K5KS



Here are Dale Gaudier and Don Murray at the Dietert center manning the table for Club Ed sign up for the Technician class