Volume 21, Number 5 May, 2012

The Greensboro Amateur Radio Association

Feed Line

Providing Amateur Radio news for the Triad

Brian Wilson, NX4U, Editor www.w4gso.org info@w4gso.org

For GARA, from Guilford ARES

By Jim Waynick, N4JLW

Randolph County ARES EC, Eric Scott, is requesting our assistance in locating an intermittent source of interference. The interference is coming across the output frequency 154.415 MHZ of Randolph's primary fire repeater. No-input frequency or pl tone is needed, since the source of interference is strictly coming across the output and not the repeater input. The interference is very strong, occurs intermittently, seems to be active for less than an hour and then goes away.

At this time Eric Scott is requesting the following:

1. Call Eric at 336-953-3880 and let him know that you are monitoring from home and or you will make yourself available to go help in Randolph County when and if Eric calls for an actual "hunt."

2. Monitor the frequency from home. Note the time, duration and make careful notes of all facts you obtain. Send those facts to Eric at: erik.l.scott@gmail.com

3. When needed for an actual hunt, the Level Cross/Asheboro UHF repeater 442.825 +5.0mhz offset 82.5hz pl, will be the amateur radio frequency for contacts.

4. Look back at the skills needed for "fox-hunting".

Our "fox-hunts" for fun and practice may pay off.

Museum Ships Weekend 2012

June 2 2012 0000Z June 3 2012 2359Z . Activating IOTA NA-143 (Pelican Is.) Brazos Valley ARC, KK5W will be operating from radio rooms of WWII Submarine USS Cavalla and Destroyer Escort USS Stewart from Seawolf Park on Pelican Is. in Galveston, Texas. We will be operating on 10-40 meters (SSB and CW). Be a part of living history as we commemorate the actions of these ships and crews. More information at http://www.bvarc.org/index.php?page=ms Special Event QSL with SASE via KK5W (QRZ.com).

NEXT MEETING
Monday, May 28

The next meeting of the Greensboro Amateur Radio Association will be Monday, May 28th, at Captain Bill's Seafood & Steakhouse, 6108 West Market Street, Greensboro, NC 27409, between Guilford College Road and Swing Road. This month's meeting will be a video presentation: "A tour of ARRL's station W1AW."

GARA Meeting Minutes

Regular Meeting Minutes April 23, 2011

The Greensboro Amateur Radio Association held its monthly meeting on April 23, 2012, at Captain Bill's Seafood Restaurant located at 6108 West Market Street in Greensboro. GARA president Donna Ferguson, KD4WIK, called the meeting to order at 7:20 PM.

Officer reports

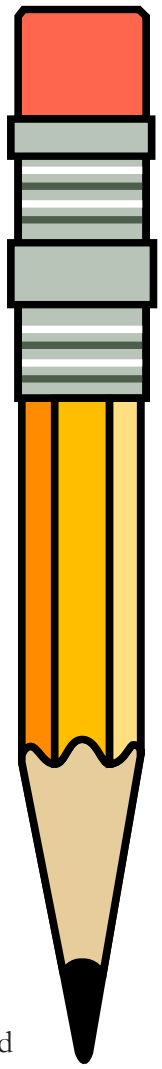
Todd Smith, AK4TS, said that we need to carpool with some of our older members who don't drive at night but would like to come to the meetings. Todd also spoke about the picnic coming up soon.

David, AJ4TF, told us what had happened at the repeater site recently that caused our repeaters to go down for several hours. It was a storm induced power failure and a backup generator that did not start. The 145.15 machine came back up fine but the D-STAR gateway did not, which ended up being a router problem. David said that all is working well now and he plans to replace the UPS batteries this summer.

Greg, KG4UQV, nothing to report.

Donna said that Al Allred, K4ZKQ, was unable to make it to the meeting had sent his report which she then gave. "Memberships have come suddenly ahead of expectations thus actual income is ahead of forecast. Other than the timing of the second payment for insurance total expenses would have been less than forecast." This should catch up next month. Books are balanced and everything looks good.

Roy Smith, N4BYU, said that he read an article which said if the lights on the tower are not working we could be held accountable by the FAA even though we do not own the tower, so if anyone notices that the tower lights are out please call David or himself and report it.



Roy also mentioned that he recently had gastric bypass surgery and has already lost 25 pounds.

The tower work for Bill Mullins, KI4IFI, has been completed, and he reports that it is working good but still has a few bugs to work out. He wants to thank GARA and everyone who came out to help.

Terrell Brown, K4TLB, spoke about the Guilford Amateur Society and encouraged us to visit their meetings and use their 145.25 repeater.

Donna recognized the people who volunteered for the N4G station and the Belews Lake Triathlon and gave them certificates of appreciation. David and Chan White, KJ4ADX, received special thanks for coordinating those events.

Gather Frye, KD4CTY, gave an excellent program on jump kits and showcased his well thought out example.

The meeting ended at 8:15pm.

Respectfully submitted by Greg Spencer, KG4UQV, GARA Secretary.

The Greensboro Amateur Radio Association

President Donna Ferguson, KD4WIK
Vice-President Todd Smith, AK4TS
Treasurer Craig Bondy, N8STA
Secretary Greg Spencer, KG4UQV
Financial Al Allred, K4ZKQ
Engineering Chair David Macchiarolo, AJ4TF
Operations Roy Smith, N4BYU
Member-at-Large Fred Lomax, KK4BAW
Member-at-Large Gaither Frye, KD4CTY
Appointed Position:
Webmaster & Newsletter Editor
Brian Wilson, NX4U

Board Meeting Minutes May 14, 2012

The GARA board of directors held their May meeting on May 14, 2012, at the Kathleen Clay Edwards branch of the Greensboro Public Library. Donna Ferguson, KD4WIK, called the meeting to order at 7:13pm. Those in attendance were; Donna Ferguson, KD4WIK; David Macchiarolo, AJ4TF; Craig Bondy, N8STA; Roy Smith, N4BYU; and Greg Spencer, KG4UQV.

Reports from officers

Al Allred, K4ZKQ, was unable to make it to the meeting so Craig read the financial report that Al had prepared. He stated that membership is ahead of income and expenses are ahead of income, as well. Al also reported that GARA has 91 paid members at this time.

Craig gave the treasury report and said that he paid the insurance early, which is the cause of the expenses being ahead of forecast. Craig also said that picnic income is ahead of expectations.

David gave the engineering report. David spoke of the repeater repairs that were done recently. David also said that he has received the D-STAR hardware agreement from Arch, KT4AT. After some discussion, Roy made a motion to accept the agreement, Craig seconded and the motion passed, unanimously. Roy made a suggestion to email all board members who were not present and get their vote on it. Arch is transferring the D-STAR hardware to GARA at no cost to the club.

Roy brought up a discussion that had come up recently about using the W4GSO call sign for the field day GOTA station. Roy said that as repeater trustee he did not see a problem with it and after some discussion Roy made a motion to allow ARES to use the club call sign for the GOTA station, David seconded and the motion carried.

Greg gave an update on Field Day, stating that he has forwarded the proof of insurance certificate, as well as, a new permit application to the park service. Everything is looking good, and it should be a good Field Day.

Donna asked for approval of the minutes. Craig made a motion to accept the minutes, David seconded and the motion carried.

Roy said we have an honorary member who has not been active on the radio or at any meetings for well over a year and Roy was asking if we should keep them on the membership roster. This was tabled until the next meeting.

Old business

David said that he has received eight requests for N4G certificates, and we decided to look into designing a certificate that could be used next year also.

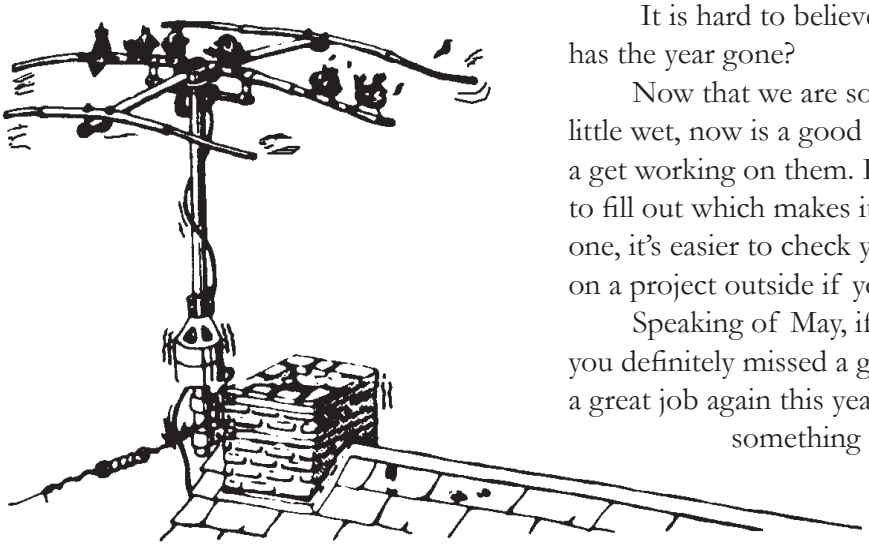
Craig said that the Post Office has located two more keys for the club mailbox, which he purchased. Craig recommended giving one to Donna for the President to keep, and then the President will decide who gets the third one. In addition, the signature card needs to be updated. Roy made a motion for the President to have a key, David seconded and the motion carried.

Roy made a motion to adjourn and David seconded. The meeting ended at 8:20pm.

Respectfully submitted by Greg Spencer, KG4UQV, GARA Secretary.

From the President's Shack

From Donna Ferguson, KD4WIK



It is hard to believe that we are already in May. Where has the year gone?

Now that we are solidly into warm weather, although a little wet, now is a good time pull out those antennae projects a get working on them. Even though the trees are starting to fill out which makes it difficult to shoot an antennae into one, it's easier to check your connectors and wires and work on a project outside if you are not shivering cold.

Speaking of May, if you weren't at the annual picnic, you definitely missed a good one. Bob and Judy Mays did a great job again this year and everyone had fun. We did something a little different this year. We had a drawing this year for those that attended, and we had gifts for both guys and gals. For the guys, we gave away $5.00 gift certificates to McDonalds, Starbucks and Stamey's. For the gals, we had some all-natural, scented soaps made by a non-profit group in Garner, NC. We also gave away an antique-styled dish full of starbursts, a small backpack made by Team RealTree and donated by Gaither, and a $25.00 gift certificate to Ruby Tuesdays donated by Roy.

We also had a HF station set up this year, and Weldon monitored it for us. Overall, I think everyone had a great time.

I would also like to thank everyone that has helped so far this year with the Technical Forum. As most of you know, Gaither is only available every other Sunday to help run the forum. In his absence, other club members have stepped up and helped. I truly appreciate everyone who has stepped up. The Technical Forum is a great way for hams to converse and learn from each other, and I feel that this is very important for all hams. There are many hams in GARA that have a lot of experience and that experience is what us newer hams need to be able to draw from when we get stuck. For those that have been checking in and sharing your experiences, thank you for sharing your knowledge.

If anyone is interested in helping with the Technical Forum, please let me know. All help with keeping it going is greatly appreciated.

See you at the May meeting.

73 to All!

Donna, KD4WIK

This Month's Meeting: A Tour of W1AW

This month's presentations will be a video presentation of a tour of W1AW, the Hiram Percy Maxim Station at ARRL Headquarters. On February 12, W1AW Station Manager Joe Carcia, NJ1Q, led Geoff Fox, K1GF, on a tour of the famed station. Al Petrunti, KA1TCH, of the New Day Group followed Carcia as he led Fox and viewers through the station, recording it for viewers to watch.

Engineering Update for April, 2012

From David Macchiarolo, AJ4TF

I have lots of activity to report this month.

VHF Repeater:

As reported in last month's column, a power failure occurred at the beginning of April that took the repeater off the air for several hours. We did bring everything back on line, however, shortly after the trip to the site on April 14th, it was noticed that the voice messages normally heard on the 145.15 repeater were not playing. To preface this, let me give you a brief summary on how the repeater works.

The 145.15 VHF repeater controller is a Link Communications RLC2 controller + digital voice recorder (DVR). The controller/DVR is powered by an Astron RM-35 13.8V linear power supply which is powered by a 425 watt UPS. (The RM-35, although reliable, is overkill for the controller, which only uses a few watts). Additionally, there is a small 12V, 2 Ah lead-acid battery that holds up the 16 MB of memory on the DVR, which, unfortunately, is volatile. Cheap non-volatile memory did not exist 20 years ago when this product was designed. The RLC2 controller processor has a small lithium battery-backed memory (DS1225) to retain its programming information, and a smaller one (DS1220) to retain the autopatch dialing information. These are guaranteed to hold their contents for 10 years without power. http://www.maxim-ic.com/datasheet/index.mvp/id/2646 These small static RAM modules are only called upon when the controller is not powered (similar to the battery-backed so-called "CMOS" storage on your PC).

The digital voice recorder (DVR) is used to store the voice messages that play at programmed intervals ("Welcome to the W4GSO repeater..."), as well as providing space for users to record messages that can be played over the air. When we were at the site on April 14th , we checked to make sure the DVR was running and that we could communicate with it, and it was. What I didn't do was to make sure there was actually something recorded on it, and there wasn't!

The DVR contains 16MB of memory, but, like I said, at the time it was designed, cheap non volatile storage was not available, so they used dynamic RAM, in fact, it uses the old SIMM memory modules that were used in PCs in the 1990s. Yes, today, you can buy 1000 times that much flash memory for a few dollars, but that wasn't the case 20 years ago. The down side of dynamic RAM is that when you remove the power, poof, it's erased.

As I mentioned, the DVR has a small lead-acid backup battery in it (in fact, it is a camcorder battery). However, these don't last forever, and the battery (as we now know) was dead.

The repeater controller program is designed to continue to operate even if the voice messages don't play, it continues to ID in CW, which meets the FCC requirements.

So, on May 12th, we made another trip to the site. While there, we replaced the UPS battery that holds up the repeater controller power supply... although it measured good, it about 3 years old. Small lead-acid

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Engineering (continued from page 5)

batteries that are continuously float charged are typically good for about 3-4 years before they start losing the ability to hold a charge.

We replaced DVR backup battery on the repeater controller. The battery that was removed was definitely bad, it was only reading 10 volts DC (which explains why it didn't hold up the memory when the power failed). We then reloaded the DVR voice tracks from GARA's engineering laptop.

Finally, we tested the new backup battery by shutting the power off for about 30 seconds. When restored, the DVR voice tracks were still there. Phew!

So, when you key the repeater up after it has been sitting idle for a while, enjoy listening to either "Bill" or "Jane" welcoming you to the W4GSO repeater!

D-Star Repeater:

I have added an automatic status reporting feature to the W4GSO D-Star gateway computer. Every night it will collect several items of performance status about the gateway and send an email to a dedicated Gmail account, which I have set up to auto-forward to me.

Here is an example of the status items it reports:

[W4GSO D-STAR GATEWAY SYSTEM STATUS REPORT]
[System Uptime]
[Last database sync]
[Users pending admin approval]
[System status - memory usage]
[System status - disk usage]
[System status - sensors]
VCore: +1.34 V (min = +0.00 V, max = +1.74 V)
+12V: +11.67 V (min = +10.82 V, max = +13.20 V)
3VCC: +3.31 V (min = +3.14 V, max = +3.47 V)
+5V: +4.56 V (min = +4.51 V, max = +5.50 V)
Sys Temp: +29 C (high = +60 C, hyst = +55 C) [thermistor]
CPU Temp: +37.5 C (high = +75.0 C, hyst = +70.0 C) [CPU diode]
[Gateway process status]
[dplus process status]
Last heard list:
user (N4BYU) rpt (W4GSO B) type RF msg (GREENSBORO, NC)

By getting these reports daily, we can monitor the system and catch any problems before they become bigger problems.

As always, if you have any questions or concerns about your club repeaters, either VHF or D-Star, please contact me at aj4tf@arrl.net

73, David AJ4TF

Congratulations! You Passed!

Every month on the second Saturday, except in March when it is the third Saturday, W4VEC holds a testing session for those who live in the area. This provides an opportunity for individuals to be able to test for their amateur radio license or upgrade. Thanks to Glenda Nicholson, AG4NC, and a group of volunteers, each month there are new or upgraded hams in our area.

In May, we had four (4) individuals who passed their test(s) and earned either their Technician, General or Extra class license.

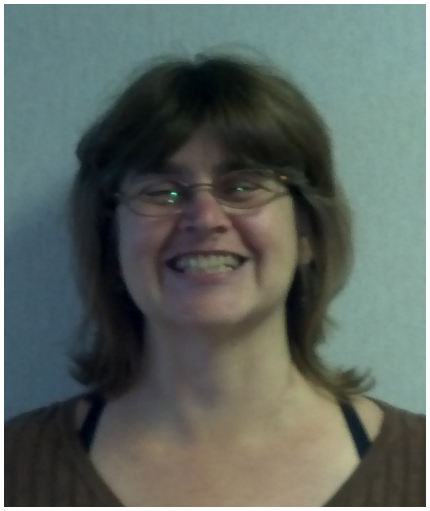
Next month's testing session will be on June 9th at #3 Centerview Dr, Hickory Building, Greensboro, NC 27407 at 9:00am. While walk-ins are welcome contacting the lead VE is preferred. Please contact Glenda Nicholson at (336) 674-3810 or by email at ag4nc@bellsouth.net

All Photos Courtesy of David Macchiarolo, AJ4TF

James B Jessee - KK4JFF - New Tech

William C Ray - KK4JFG - New Tech

John J Lawson III - KK4FQT - Upgrade to General



Janice E Steinberger - KJ4UYR - Upgrade to Extra

Annual Doggett BBQ

September 29, 2012, Save the date for the annual Doggett Picnic.

The Doggett's have being hosting a picnic for many years and started inviting the local Hams. I spoke with John and he gave me the date. The time is usually 6pm. You need a chair and appetite. Some of the best BBQ around.

The Doggett family includes the following hams: Clark, KG4HOM; Jane, KG4ZQK(Wife); John, AJ4DV(son); Mary, KJ4ZQL(Daughter); and Lexie, KI4QNC(Granddaughter)

If you have never attended, you don't want to miss this event. Go ahead and mark your calendars and plan to attend. Even though this is several months away, calendars have a way of filling up. This is a great time of food and fun.

Photo Courtesy of Tom Forrest, N4GVK

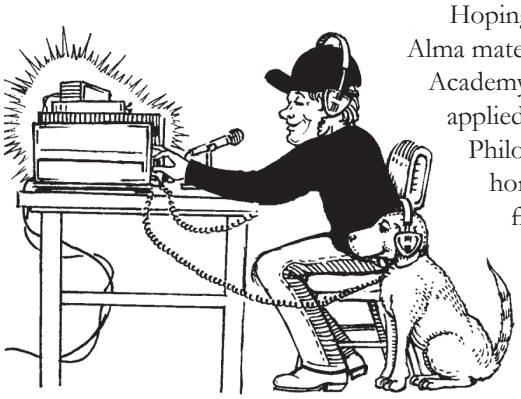
Morse Code and the Man Behind It

By Tom Bertolino, KB1P

During my quest to learn Morse code I began to wonder what logic was used to assign the dits and dahs to letters and numbers. As my ears started to recognize the code patterns, and I started to learn the characters, I began to wonder about other code related things. Who was Samuel Morse? Where did he come from? What was his background? What made him develop the telegraph and the code that went with it? Finally my curiosity got to me; I started to research Morse code and the man behind it, Samuel Morse. What I found surprised me.

My first surprise was that Samuel F B Morse was from Massachusetts. Wow! Old Sam was from Charlestown, Massachusetts and lived only a few miles from where I grow up. My second surprise was that he was an accomplished artist, who studied at the Royal Academe in London and who has several paintings in art museums around the country. What also surprised me was Morse did not invent the telegraph. (The first telegraph was invented in Germany by Wilhelm Weber and Carl Gauß.) Another surprise was Morse was bitterly anti-Catholic and anti-migration, and strongly supporting slavery.

Morse was born in Charlestown on April 27, 1791, (just 8 years after the end of the Revolutionary War), and died on April 2, 1872. (The year President Grant was elected). Samuel's father, Jedidiah, was a Calvinist pastor in Charlestown, MA and is considered the "Father of American Geography". Morse's father was strong supporter of the federalist movement in early America and a staunch Calvinist. His moral values and strong political beliefs influenced Samuel throughout his life.



Hoping Samuel will follow in his footsteps, Jedidiah wanted him to attend Yale, his Alma mater. To help prepare his son for Yale, the senior Morse sent Samuel to Phillips Academy in Andover, MA. His decision paid off when young Samuel, at age 14, applied to Yale, and was accepted. While attending Yale Samuel studied Religious Philosophy, Mathematics, and Science of Horse (the training and breeding of horses), he also attended lectures on electricity by Benjamin Sillian (one of the first professors of science in America). He graduated Yale in 1810 with Phi Beta Kappa Honors. After graduating from Yale Morse went against his father's wishes and pursued his interest in painting.

In 1811 Morse convinced his father to send him to England's Royal Academe of Art in London to study painting. He was an American

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Morse (continued from page 8)

in England during the War of 1812. It was during this time Samuel earned a reputation as a defender of American rights and became a strong anti-federalist. Morse left England in 1815, and headed back home. After a short stay in Connecticut as portrait artist, he moved to Charleston, South Carolina in hopes of furthering career as an artist. This is where Morse came into his own as an artist.

To further his career as an artist, Morse toured Europe during the 1830's. It was during a return voyage to the states in 1832 that Morse meets Charles Thomas Jackson, who was an expert in electromagnetism. It was while Morse was witnessing some of Jackson's experiments with an electromagnet that Morse started to developed his concept of a single wire (ground return) telegraph.

It was shortly after this in 1833, that Americans William Cooke and Charles Wheatstone learned about the multiple wire telegraph invented by Germans Weber and Gauß and they decided to launch a commercial version of the telegraph in the United States. Cooke and Wheatstone soon began a series of experiments the results of which improved on the German's telegraph, and they received a US patent for their multiple wire electrical telegraph in 1837. That same year they built a 13 mile telegraph line for the Great Western Railway.

At about the same time Morse began experimenting with his single wire telegraph system. With the help of Leonard Gale and Alfred Vail, Morse improved his single wire system to the point where it was performing better than Weber's and Wheatstone's multiple wire system. Despite the fact that Morse had a better product he could not get funding for his telegraph system. Finally after demonstrating his single wire system to Congress in 1843, Morse received a Congressional appropriation of $30,000 for construction of an experimental 38-mile telegraph line between Washington, D.C., and Baltimore, Maryland. On May 24, 1844 Morse officially opened the line when he sent his now famous message "What hath God wrought" from Mount Clare Station, Baltimore to the Capital Building in Washington. The experiment was a success. Morse's single wire telegraph system soon over took, and replaced Weber's and Wheatstone's multiple wire telegraph system.

Now to answer the question that started me on this information quest, how were the dits and dahs assigned letters and numbers? The Morse code system as we know it evolved from a basic system designed by Morse. His first code was based on numbers and a special dictionary that assigned words to those numbers. If you wanted to use this code you would send a series of numbers to the receiving station. The receiving station would copy the numbers sent. Then someone would have to go to the special dictionary look up the number then copy the assigned word. Wait I am not through, it gets better. The way the numbers were sent was unique. The receiving station printed on a ticker tape roll of paper a series V's. Yes V's. The amount and how the V's were sent represented numbers. So for example VVVVVV represented the number 6, and VV VVV the number 23. Obviously, this system had its limitations.

After experimenting with different ways of sending numbers with long and short electrical pulses, Morse [or Vail, depending upon who is writing about it] came up with the idea getting rid of the special dictionary and replacing it with a system that used a series of short and long pulses assigned to each letter and number. The concept was; the most used letters would get the shortest sending time. Vail was given the task of assigning combinations of short and long pulses to each letter and number. To determine which letters got which pluses, Vail used local newspapers to determine the frequency that each letter was used. After compiling his data he assigned the most used letters the shortest send times. The resulting code standardized the way massages were sent in the States and lead to the adoption of the American Morse Code as a standard in this country.

Morse code began to evolve as soon as it was created. In 1848 Friedrich Clemens Gerke, created the Continental Code used in Europe. It was Gerke's code (which changed nearly half of Vail's alphabet and all the numerals) that was used as a model to create the code we use today. After some minor changes to Gerke's code, the International Telegraphy Congress of 1865 adopted it as the standard code. Thus, the code we use today, International Morse Code, was born in 1865.

(So, if I tweaked your curiosity, and you want to compare; Morse's American Morse Code to Gerke's Continental Code, and the code we use today, you can go to this link http://en.wikipedia.org/wiki/File:Morse_comparison.svg.)

Now that I answered my questions about Samuel Finley Breese Morse, and the code that is named after him, all I have to do is meet my personal goal of mastering Morse code.

Area Happenings

FOURTH MONDAY – at 6:30pm, the Greensboro Amateur Radio Association have their regular monthly meeting at Captain Bill's Seafood & Steakhouse, 6108 West Market St., Greensboro, NC 27409. Please plan to gather at 6:30pm for dinner. The meeting is scheduled to start at 7:15pm

CLUB NETS:

SUNDAYS – at 7:30pm, the **Technical Forum** on the 145.150;

- at 9pm, the **GARA News and Information Net.** This net features *NewsLine* and is on the 145.150, W4GSO repeater. Roy Smith, N4BYU is always looking for net controls. Contact him if you would like to help.

TUESDAYS – at 8:30pm **The Triad SkyWarn Net** meets on the 147.225, K4ITL repeater, no tone required.

TUESDAYS – at 9pm, the **D-STAR Net** meets on 442.8625 (W4GSO B and Reflector 17C)

WEDNESDAYS – at 8:30pm, **The Guilford Amateur Society Rag Chew Net** holds their weekly net on the 145.250, W4GG repeater with an 88.5 Hz. tone. Jim Hightower, W4JLH is the net control.

THURSDAYS – at 9pm, The **Guilford County ARES Net** meets on the 145.150 repeater (100 Hz. tone).

OTHER ACTIVITIES :

FIRST MONDAY – The Guilford County A.R.E.S. monthly meeting is held at 1002 Meadowood St. off W. Wendover Ave, in the EMS building, beginning at 7pm.

THIRD MONDAY – at 6:15pm **The Guilford Amateur Society** holds their monthly meeting at Tex & Shirley's Restaurant in Friendly Shopping Center. Eat at 6:15pm and the business meeting begins at 7pm.

THURSDAY – at 11:15am, Greensboro Hams get together for lunch. Thursday lunch group is meeting at the K&W Cafeteria, 300 Forum VI Mall at Friendly Shopping Center. Talk-in is on the 145. 150, W4GSO repeater with a 100 Hz. tone.

EVERY FRIDAY – at 8pm (approximately) Greensboro Hams get together for coffee at Starbucks at Edney Ridge Rd.

The W4VEC Testing Schedule

June to Dec 2012

June 9,2012
July 14, 2012
August 11, 2012
September 8, 2012
October 13, 2012
November 10, 2012
December 8, 2012

Location: #3 Centerview Dr, Hickory Building, Greensboro, NC 27407
Time: 9:00am
Contact: Glenda Nicholson
Phone: (336) 674-3810
E-mail: ag4nc@bellsouth.net

GARA REPEATERS

145.150 MHz - offset, 100 Hz. tone **442.8625 MHz. + offset, Digital D-Star**

Greensboro Amateur Radio Association
P.O. Box 7054
Greensboro, NC 27417
www.w4gso.org

FIRST CLASS MAIL

The Official Publication of GARA