

Nacogdoches Amateur Radio Club

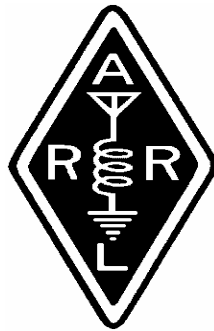
Pres: Andy Delgado - KE5EXX

VP: Lon Glaze - AE5BN

Sec/Treas: Army Curtis - AE5P

MISSION STATEMENT

The Mission of the Nacogdoches Amateur Radio Club is to support and promote Amateur Radio by public service, offering training to unlicensed interested parties and licensed amateurs, mutual support of other amateurs, engaging events that promote amateur radio to the general public and other amateur radio operators, and continuing fellowship by regularly scheduled organized meetings and events.



JULY MINUTES

The July meeting of the Nacogdoches Amateur Radio Club (NARC) was held as scheduled on July 2nd. Twenty-eight members and five guests were present. **President Andy, KE5EXX**, opened the meeting at 7:00 p.m. in the Parish Hall of Christ Episcopal Church. Each person present introduced himself. Minutes of the previous meeting were approved as published. Treasurer's report was read.

Kent - KD5SHM reported on the Disaster Preparedness Fair held at

the LDS Church here in Nacogdoches.

Rusty - KD5GEN and Fay - K5FAY helped provide communications for the Neches River Run. Over 300 persons participated this year.

HamCom at Plano was attended by Jerry - K5JLW and Barbara - K5BAS.

The ARRL June VHF Contest saw N5AIU / AE5BN, AE5P / W5TV, KE5CLQ / KE5CLR and KE5EXX / KE5GAQ all participating as rovers, while K5QE and crew held down the fort at the K5QE contest station. Excellent results were reported by all.

Jerry - K5JLW reported on the Lufkin Hamfest.

Field Day was held in the mobile EOC trailer located at the Expo Center, and good fun was had by all.

The CQ VHF contest will be held on July 19-20. This will be 6 and 2 meters only.

Motion made and seconded for the club to purchase another Kantronics KPC-3+ TNC for the last Orange Box. Approved. KD5SHM will buy it.

Discussion on a WebCam for the top of the Fredonia Hotel. Andy and Kent will explore what is required.

Recommended that a letter of thanks be sent to the City and County for allowing us to use the mobile EOC trailer for Field Day.

Meeting was adjourned at 7:56 p.m.

Program

Robert - KD5FEE presented a program on APRS.

NEW MEMBERS AND CALLSIGNS

Please welcome David Bryant, W0THN and Baleigh Danger, KE5VKZ. Also, note that Scott, KE5TCS is now KB5SH.

PRESIDENTIAL POSTULATIONS

Andrew and I arrived at Marshall's contest station Saturday afternoon. Marshall gave me a brief explanation on how EME aka moonbounce works. We relieved the other ops on 6m and 2m while they went for dinner, they relieved us as we went to dinner. (You gotta try the smoked turkey at the BBQ joint just down the street!) When 9:30 local time arrived, we were ready to dig in.

I've never had a chance to play in any of the HF digital modes like PSK or RTTY. This was all new to me. I was sitting at the 6m station working the occasional contact while Marshall explained to Andrew the finer details

of 2m JT65 communication.

I answered a few more calls and kept my eye on the 2 EME ops. Andrew was really getting the hang of this. (What do you expect, he wants to be an Astronaut, so anything having to do with the moon captivates him.) They are looking at contacts all over the computer screen. I'm amazed as I see them log contacts from all over Europe - on 2 METERS!

So 6m is finally slowing down.... We turn the antenna NE and spin the dial to take us up to 50.260 and setup to work some meteor scatter. This is interesting. Marshall hasn't spent too much time doing this so he leaves me to figure it out. I hear the distinctive sound of a digital transmission being bounced off of meteors. I start looking at the software to see who is talking. This is AMAZING! I finally work someone.

So I nod off to sleep at about 12:30 while Andrew and Marshall are still going

strong. I wake up at about 1:30 and watch some more. Finally at about 2 a.m. they decide to call it a night as well. Andrew and I sleep on the comfy chairs in the shack while Marshall heads home.

I'm back up at 5:30 and hear some serious activity opening up on 6m. I get on and find a spot to start calling CQ. The next time I look up it is 6:30 and I have worked 89 contacts in the last hr. I was excited. Andrew woke up and started working on 2m until we were relieved at about 7:30.

We went home and fell asleep.

If you are a night owl, or are in the least bit interested in working EME or Meteor Scatter, get with Marshall. I'm sure he wouldn't mind the extra help during contests. While you are there make sure you go to the BBQ joint just up the road from the K5QE Contest Station and get yourself some of that amazing smoked turkey. You may find that

you like EME so much that you want to setup a much smaller EME station in your own back yard.

The next major contest for HF is the North American QSO Party. The details are:

SSB: 1800Z August 16 to 0600Z August 17, 2008 (Third full weekend in August)

The next major contest for VHF is 2008 ARRL September VHF QSO Party. The details are:

September 13 - 15, 2008; Begins 1800 UTC Saturday and ends 0300 UTC Monday (The second full weekend of September).

See you this Wednesday!

73 de KE5EXX

email: ke5exx@arrl.net



HAMMING IT UP

I didn't talk any about Field Day last month since I didn't want my column to be late.

We started off with breakfast at IHOP before heading over to start the antenna raising. I think we learned a little about how not to raise an antenna. We had a good turnout. I had a good time and hope everyone else had a good time too. Bad weather threatened us a little Saturday night but for the most part cooperated. It was still pretty warm during the day but cooled off some at night. Operating from the trailer was a nice change. It would have made it much easier if stormy weather had forced us to shutdown and seal up.

I had to have some minor surgery done on the 16th. Everything has been going pretty good with my recovery. I had to take it easy for about a week. I ended up watching lots of TV and movies. No matter how many channels you have it is still hard to find something good to watch.

I did watch the Bruce Willis film "Live Free or Die Hard". I noticed some radio glitches in different places in this movie. At one point he is calling for help on a police radio and the frequency display reads 144.300 MHz. Hey, isn't that right in the 2m amateur band? The other time he goes into a hacker's house and looks at his radio. He says something about CB being a little low tech for this guy and the guy says something about that working after nothing else will. The guy has 66.6 MHz. wrote on a note attached to the radio. Willis later uses this frequency from a CB in a big truck to communicate with the hacker. Wait a minute, 66.6 MHz. is not a CB frequency. I think I may be too big of a geek or I just pay way too much attention to this stuff.

73 de AE5BN Lon

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**W5BL Named
Instructor of Year**
by Frank Krizan, KR1ZAN

The American Radio Relay League (ARRL) has announced that Doug Loughmiller, W5BL, of McKinney, TX, is the recipient of the 2008 Herb S. Brier Instructor of the Year Award. The announcement came during the League's Second Board Meeting of 2008, July 18-19, at Windsor, CT.

Doug is well known by the Nacogdoches Amateur Radio Club. He has been a licensed radio amateur for thirty-six years, twenty-seven as an Amateur Extra class licensee. In addition to being licensed in the USA he has also been licensed in the Cayman Islands and the United Kingdom. He has held a number of call signs through the years including: WN9KPC, WB9KPC, WB5NGB, KO5I, ZF2IP, G0SYX and W5DAL.

Believing that it is a privilege to hold an Amateur Radio license, Loughmiller believes in giving something back to

both the hobby and to his community. In this spirit, through the years he has taken an active role in the leadership of Amateur Radio organizations both at the local and national level and shares his knowledge of the hobby by conducting amateur radio licensing classes.

With over 200 presentations about Amateur Radio and Amateur Satellites to his credit, Loughmiller has been a frequent spokesman for the hobby. Loughmiller is a Published Author in QST having written numerous articles about various aspects of the Amateur Satellite program. He is an ARRL Life Member, an AMSAT-NA Life Member, a Life Member of the Central States VHF Society, a member of the Fannin County Amateur Radio Club, the North Texas Microwave Society and the Lone Star DX association.

"I am deeply honored to have been chosen as this year's recipient of the Herb S. Brier Instructor

of the year" Loughmiller said. "My Elmer, Bob Caskey, W9DNQ (SK) was one of the finest amateur radio instructors I ever had the privilege to work with and I hope this is viewed as a testament to Bob's legacy as much as anything else." "I really enjoy bringing people into the hobby and it is nice to be recognized at this level for doing something I truly love to do."

VE TESTING

Our next VE testing is scheduled for Wednesday, August 20th at 7:00 p.m. in the Parish Hall of Christ Episcopal Church. Applicants should bring a picture ID, the original and a copy of their current Amateur license, the original of any CSCE's and \$14 to cover the cost of the exam(s). Correct change is always very much appreciated.

73 de AE5P

email: ae5p@arrl.net

CLUB NETS

Remember to join us each week for the 2-meter nets sponsored by NARC. Each MONDAY is the NARC ARES/RACES net, at 8:00 p.m. on the club's 146.84 repeater (PL 141.3). Second, on THURSDAY evenings at 8:00 p.m. is the Deep East Texas Skywarn Net on the 147.32 repeater (PL 141.3). Please join us for one or both.

NEXT MEETING

The next meeting will be on Wednesday August 6th at 7:00 p.m. in the Parish Hall of Christ Episcopal Church. The church is at the corner of Starr and Mound Streets in Nacogdoches. If you have items for show and tell, please bring them. Hope to see y'all there.

Basic Electronics Part Twenty Nine By Thomas Atchison

Now let's return to the series circuit that contains a resistor, R, a capacitor,

C, and an alternating current, Fig 1.

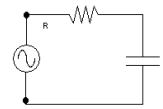


Fig. 1

The total opposition to current in a circuit is called the impedance. Impedance is denoted by Z . The relationship connecting the impedance to the current and the total voltage is

$$V_T = IZ.$$

Here the current is in amperes and the impedance is in ohms.

Referring back to Basic Electronics, Part 28, we measured the current in the circuit at 100 mA, the resistance was 500 ohms, and the capacitive reactance was 75 ohms. We calculated the total voltage as $V_T = 50.6$ volts.

This means that

$$50.6 = (100 \times 10^{-3}) (Z).$$

Solving for Z we get

$$Z = \frac{50.6}{100 \times 10^{-3}}$$

or

$$Z = 506 \Omega.$$

Notice that this is NOT the sum of the resistance and the capacitive reactance.

To understand why this is the case we must return to the vector diagrams of Part 28. Recall that the voltage across the resistor is in phase with the current through the resistor; however, the voltage across the capacitor lags the current through the capacitor by 90 degrees. We represent the current and voltage with a vector diagram (Fig. 2).

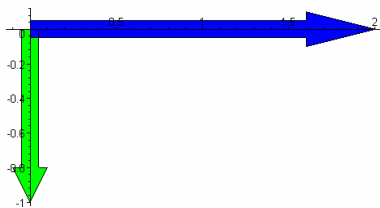


Fig. 2

Here the blue vector represents the voltage across the resistor and the green vector represents the voltage across the capacitor. If we alter the plot so we have a right triangle to allow us to use the Pythagorean relationship again, we have Fig. 3.

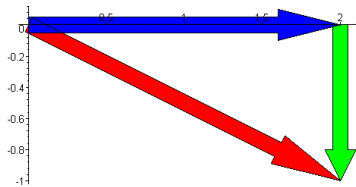


Fig. 3

Here the blue vector is still the voltage across the resistor, 50 volts, and the green vector is the voltage across the capacitor, 7.5 volts. The red vector is the resultant vector and it represents the sum of the two voltages using the phase difference. Since the voltage across the resistor is IR and the voltage across the capacitor is IX_C then the total voltage is

$$V_T = \sqrt{(IR)^2 + (IX_C)^2}$$

But $V_T = IZ$, therefore,

$$\begin{aligned} IZ &= \sqrt{(IR)^2 + (IX_C)^2} \\ &= I\sqrt{R^2 + X_C^2}. \end{aligned}$$

Dividing out the common current, I , we get

$$Z = \sqrt{R^2 + X_C^2}.$$

Since $R = 500 \Omega$ and $X_C = 75 \Omega$, then

$$\begin{aligned} Z &= \sqrt{500^2 + 75^2} \\ &= \sqrt{255625} \\ &= 506 \Omega. \end{aligned}$$

This is a result that is similar to the result we obtained in Part 27 when we were dealing with a series circuit involving an inductor.

In the next part we will consider what happens when we have a series circuit involving a resistor, a capacitor, and an inductor.

A LETTER HOME

Well, okay, maybe it's an e-mail home. Anyway, the following is an e-mail from

Shari Wilson, KD5ROW, daughter of Larry, KC5JCK, and a long time member of NARC, to her grandfather. Shari is a cadet at the Air Force Academy in Colorado Springs, and is on summer break. I'll let her tell the rest of the story.

Hey Grandpa!

Sorry I haven't e-mailed yet! We've been busy getting training and such done. We arrived into Fairbanks and got settled into Eielson at about 3 in the morning. We all slept till about 1230 and then went to a couple of briefings at about 1:30. After the briefings, we walked out to the flightline where the Thunderbirds were doing their practice show! It was a really nice day so they go to do all the maneuvers for a full show. We were lucky to see that because the next day, during the actual air show, the weather was kinda nasty so the Thunderbirds didn't do their high altitude maneuvers. On the day of

the airshow, we got some Egress and Hanging Harness training taken care of so that we could get incentive rides. Most of us also got our medical clearances but there were a couple of people who aren't approved to fly, like one football player who exceeds the weight limit of the ejection seat. We then spent the rest of the day watching the Thunderbirds and looking at the F-22 that had flown up from Elmendorf. On Wednesday the wing spent the day hosting a field day where all the different groups participate in activities ranging from 10K runs to tug-o-war. All the cadets got dispersed and participated in different events. I was put in the tug-o-war and was attached to the Communications squadron.

On Thursday things started to get interesting. We finally got sent to our individual jobs. I'm attached to the 18th Aggressor Squadron along with one other cadet who will also be a pilot. Almost

as soon as I arrived they asked if I wanted a ride in an F-16 and if I had my altitude chamber card (which allows us to go above 18,000 ft). The other guy didn't have his card and I did so they let me fly that day. They fitted my helmet, tested my mask, and suited me in the G-suit and I was ready to go. The profile for the flight was basically dogfighting between two pilots. So we went up in a two ship formation to military air space and the pilots switched back and forth between being the aggressor and the defender. I just sat in the back during this part and worked on staying conscious as we pulled up to 8 Gs. I never came real close to passing out but there were a couple of times that I started to grey out. When that happened, I just pushed harder and everything would come back. The dogfighting was really neat but I was focused on doing the G strain maneuver and was ignorant on how to

dogfight in an F-16 so I didn't always understand what was going on. Anyway, after the dogfighting was over, the plane I was in had some extra fuel so we needed to burn it off. My pilot took us into a valley at about 900 AGL and we went "looking for wildlife." We didn't see anything but it sure was a lot of fun flying that close to the ground and pulling all those G's trying to squeeze between the hills! After about a minute he popped a little bit above the hills and then pulled straight up. We went from about 1,000 ft to 22,000 ft in a matter of 30 seconds or so. It was pretty impressive! Once we reached the top I got to fly the plane. I did some aileron rolls and then went into a left 5 G turn. As we were doing the aileron rolls the other pilot called up and said "Man, you're sure putting her through it on her first flight!" and my pilot called back up and was like "That's Ivan Bravo that's flying!" indicating that I had the

plane. The other pilot thought that was "excellent." :-)

When we pulled into the 5 G turn, my pilot started doing the G strain maneuver so I let up a bit. Later he told me that he was expecting me to go into a 9 G turn and that he wanted to be ready for when I passed out. Hehehehehe! I was satisfied with the 8 Gs we pulled earlier. My mask was getting sucked off my face when that happened anyway. Anyway, after that we went back to Eielson and the pilot did some pattern work before we landed and went back to the hanger.

After I got back to the squadron, another pilot pulled me and the other cadet back into the F-16 simulator. It's got a whole cockpit setup and a huge screen in front of it. You can do anything in that thing from simulating an emergency to fighting another plane. It's pretty sweet! I'm gonna spend a lot of time in there this week

because it's a ton of fun and so that if I get another F-16 flight, I'll have an idea what's going on. Too bad I can't buy a full cockpit like that to train for the T-6 before I go to pilot training!

Anyway, this weekend I wanted to go down to the airshow in Elmendorf. Everyone was going to be there. All kind of planes would be there and I'd get to see another Thunderbird show. But, the weather got bad and there were only 3 other cadets going so the expenses went up pretty drastically from when a bunch of cadets were going but dropped out. We were going to rent a car and split the cost of that and gas as well as a hotel room. So, instead we've gone into Fairbanks a couple of times to eat and have gone to the movie theater. I think next weekend we're going to try to go to Denali but we've had a lot of trouble with transportation. They've given us some government

vehicles but there are a ton of restrictions on where you can go with it. I'm hoping I can catch a ride with one of the fighter pilots up here down to Denali or somewhere interesting since it will be 4th of July weekend. We'll see!

Well, tell Grandma that my french toast is getting better every time I make it! I've made that and a shrimp pasta on my skillet. It was worth it for me to buy that thing. I'll talk to you later!

Love,
Shari



Many thanks to Larry for passing on the e-mail, and thanks to Shari for giving us permission to use it in the newsletter.

de AE5P

Software for an Emergency Communications Go Bag

Much has been said about Go Bags, aka Jump Kits, Bug-Out Bags, etc. for Emergency

Communications and Kit parts lists abound and vary widely however little has been said about Go-Bags for computer operations and support of Emergency Communications stations. Laptop computers have become ubiquitous and use of laptops in EmComm a given. Winlink has been adopted by many Emergency

Communications groups for local purposes as well as long range communications and by the ARRL for ARES necessitating the inclusion of computers and TNCs at most EmComm stations. Operation and support requirements for computers in EmComm service goes well beyond the WinLink software, word processor, and printer to entail networking software, anti-virus/anti-malware

software, firewall and defensive software, as well utility software which should be cross-platform compatible and system independent such as Open Office. There are currently no supported logging programs that I know of which reflect the National Traffic System Forms or ICS 213 General Message Forms to facilitate computer logging of those message formats, perhaps there soon will be and maybe with the capability to export a file suitable for packet and import packet transmissions to text files in the ICS 213 and NTS Message format.

EmComm service providers should be prepared to respond quickly and decisively to a wide range of possible system faults and failures. Computer related problems can range from application problems requiring application reconfiguration and/or reload to system corruption requiring system reload and reconfiguration to drive failure requiring drive

replacement and reload and reconfiguration of the entire systems and all the components and applications. Murphy's Law faults and failures can result from a wide variety of sources and conditions from power surges, improper/accidental shutdown, coffee spills, "helpful" reconfiguration by unauthorized persons, improper use by unauthorized (or authorized) persons, attack by malware, to network attack by wireless or wired connections, the possibilities are many and the probability high. EmComm providers should be prepared to not only restore the system to a fully operation state in a timely manner but also restore the communications records up to the point of failure. Do not rely on "System Restore" or "Snapshot" utilities to recover from a catastrophic system failure and especially not to recover lost data.

An experienced computer technician can "rebuild" a system in a very short

time if the hard drive does not need to be "wiped" and then reloaded which could take several hours if all needed software was "at hand." Restoring the EmComm "traffic records" would be short and simple if a frequently performed backup of critical files were performed to a non-volatile external storage media such as a CD or DVD. Keep in mind that a disk "wipe" might be required if the failure resulted from an "attack" on the computer. Some EmComm areas might be considered inherently "safe" such as Emergency Operations Centers but other more public arenas such as hospitals and Shelters should be considered "hostile" environments for computers connected to wired internet or having wireless connection capabilities such as "Wi-Fi" or Bluetooth. In your next Emergency Simulation include a bored 15 year-old computer genius evacuee with a disk full of malicious software and

nothing to do for hours but pick at your system.

The computer "Go-Bag" should include all software to wipe and reload a system and all critical applications as well as the install codes to install and/or activate the software. Beware of using any software that requires an internet connection to "active" since the internet may not be available during an emergency. A "short list" for the Go-Bag software should include the operating system install disk (or image disk), drivers for the computer and all peripherals, cross-platform compatible word processing software, a .pdf file reader, anti-virus and anti-malware software, a reliable third-party firewall, backup software and media, the EmComm software, a disk wipe utility, all software licenses, install and/or activation codes, and any other specialty applications appropriate to the intended service provided. Items such as spare hard drives, extension cords, surge

protectors, and spare cabling and peripherals is advisable. Each person's computer Jump-Kit will be individually customized beyond the essentials according to their skills, abilities and interests. The best way to find your needs is to "completely rebuild" your own system a few times, tedious, but revealing.

EmComm service providers should consider a situation in which a system failure occurs at a remote location and conditions prevent a trained and experienced computer technician or support person from traveling to the site to conduct the repair. Each EmComm site should include enough resources on-site to provide the capability of talking an operator through the rebuild on a simplex frequency if needed. Since some necessary software ages quickly, requires near daily updates such as anti-virus software, it will be necessary to periodically update the "rebuild kit" for each EmComm site or

for the "Go-Bag." If failure results from an attack or "malware" simply rebuilding the system is not sufficient, the system must be made safe against whatever weakness made it vulnerable in the first place. Non-volatile storage media such as CD and DVDs are relatively inexpensive and "write once" devices possibly "safer" than rewritable devices such as external USB drives.

Beyond EmComm service you might become an evacuee some day and having your critical computing needs ready to "grab and go" is as wise as having any other form of "bug out bag." This is the digital age and you can carry heaps of information in very small spaces. Software and utilities that are not necessarily EmComm related but could prove valuable during an emergency might include the ARRL Repeater Plus Repeater Directory and Trip Planning software (with maps and hopefully someday APRS capability,) NexRad radar viewers,

Satellite prediction software, Astronomy software (for sunrise and sunset times), Tide Tables, time zone clocks, unit conversion utilities, APRS, and HAM Voice over IP software. Much of that software is free on the internet and so are many valuable references such as First Aid manuals, Survival Manuals, math tables and formulas, whatever you can imagine you might need you can store in only a few Gigabytes of flash drive or DVDs. A few hours spent on the internet downloading free .pdf files and saving web pages for offline reference later, perhaps never, but which might one day provide just that little piece of information that prevents or mitigates catastrophe is a wise investment and it can all be kept on a few DVDs or flash drives and be immediately available whenever you can access a computer, even if you have to reload one yourself.

de Robert Judy
KD5FEE