

N F A R L

squeich tales



March 1989

NORTH FULTON AMATEUR RADIO LEAGUE

EDITOR LEW CASON N4HRA

WITH DEEPEST SYMPATHY

The Officers and Members extend their heart felt sympathy to our Treasurer, past President and friend, Harold Nyland, WA4PZY, and his family for the sudden passing of his wife, Gene.

From Member of the North Fulton Amateur Radio League and family's

MINUTES OF THE FEBRUARY, MEETING

The meeting was called to order at 1933 local time. Our next regular meeting will be held on August 10th... [The meeting date was an editorial error.]

JANUARY MINUTES The minutes were approved as published by voice vote.

TECHNICAL COMMITTEE REPORT 145.47/R by N4CLA

We now have access to building where the buzzing noise lives so that we can find the source. In the past, the noise would vanish before the building tenants could arrive on the scene.

The Sweet Mountain repeater site has been purchased by and out of state firm. As leases run out, this firm is making new deals. This will affect us in maybe ten years. The new firm is expected to charge a per radio and per antenna fee.

[A member volunteered that he had an entre to MCI Communications and that they have a tower on Sweet Mtn. that we might gain access to.]

147.06/R by WB4PYL

We found a software bug that would cause the features to hang but the controller continued audio repeater functions. KD4NC has found the most software defects to date. Everyone is encouraged to help locate any other lurking problems.

FUTURE MEETING PROGRAMS

MARCH -- (Firm) WD4KDB will tell us how to raise a tower

APRIL -- (Pending) A presentation about Georgia State Emergency response teams

MAY -- a home brew contest

JUNE -- contesting in general; Field Day in specific

JULY -- what is a fox hunt

HOME BREW CONTEST

Jack, WA4FIB, presented an overview. [More details see page 3.]

OLD BUSINESS

At the August meeting, we agreed to sustain the WB4PYL repeater controller on 147.06 through year end. Dan is willing to extend this situation indefinitely. Cliff, N4LPU, moved, "we leave the controller in place until Dan has it exactly like he wants it". THE MOTION WAS APPROVED BY VOICE VOTE.

Continued page 2 NEW BUSINESS

NEW BUSINESS

1. Severe Weather Awareness Week is 20-24 February. A tornado drill will be held on Wednesday, 22 February.
2. The Kennahoochee Hamfest is scheduled for 8 April. [Cheers when it was noted that this does not interfere with a GRAPES meeting.]
3. There are NO PLANS to install the WB4PYL controller on Sweat Mountain due to the hostile RF environment. [This point was raised to clarify earlier statement that were felt to be misleading.]
4. On Wednesday, 22 February, the National Weather Service wants to know: where are you, when did you hear, and how did you hear the tornado alert.
5. The N. Fulton ARES group is always looking for volunteer Net Control Stations for the Monday night and Saturday morning net. Congratulations to Karen Casten for a JOB WELL DONE on her first turn as NCS.
6. The N. Fulton Regional Hospital has approved the purchase and installation of 2 meter radio equipment. As soon as purchasing administrative problems are resolved, we will schedule an installation party.
7. Someone raised the issue of a club sponsored Novice Class for the Roswell area. The issue was discussed briefly and tabled until next month.
8. We would like to arrange joint meetings between NFARL and the Boy Scouts with the goal to bring interested scouts into amateur radio. We will extend invitations to several troops so that they might attend the May meeting to view the home brew contest.

ANNOUNCEMENTS

1. Please send any information about the current state of the Constitution and By-Laws so that we may get these documents up to date.
2. Please bring any old copies of Squelch Tales so that we may build an archive.
3. Please advise Lew, N4HRA, about your wishes for newsletter contents. [A letter to the editor will be

published.]

4. Ron Gilmer, N9DER, was admitted to the N. Fulton Regional Hospital. We wish him well.

PROGRAM

Dan Gustafson, WB4PYL The 147.06/R PC based repeater controller.
K14MQ, Dan, Secretary

TREASURER'S REPORT

Savings Balance	\$2,076.47
Income	\$ 220.00
Expenses Jul-Dec Phone.....	\$324.49
SERA Dues.....	\$30.00
Postmaster	\$103.00
Checking Balance.....	\$610.84

WA4PZY, Harold, Treasurer

PRESIDENT'S COMMENTS

"We've been seeing various types of things in the club lately -- things that have upset people for one reason or another. I don't mind listening to these -- my phone lines have been active lately, and my comments basically are: Go ahead and tell me about it if you have comments or suggestions or whatever but one of the things I would request is let's realize that we have a lot of varied people on the machine -- both machines -- people who are in to all kinds of stuff. Whether is emergencies, traffic handling, packet radio, towers -- every facet you can imagine -- antennas, we even have a few lawyers that hang around still and like to talk about that [brief interruption] -- but lets try to have consideration for everybody and please share.

"We have some awfully great resources at our fingertips and it just takes grabbing the button and talking. Have some consideration. If -- as an example, when you need to make a phone patch, an autopatch on the machine, you turn on the radio,
Continued page 3

you haven't heard anything for five seconds, you grab it and 'this is W4XXX on the autopatch...' you may have just broken into a QSO. Drop your call sign in. If you don't hear anything in half a minute, you can assume very safely that there is nobody there. Go ahead and make your autopatch. If there is someone there, they'll come back to you.

"We need to work together on things like that and have a lot of friendship and camaraderie. If someone makes a snide comment, just let it go off. If we all follow that and maybe not be quick to accuse people of stuff, then I think we'd all enjoy things a little bit more.

"Now there are times that someone does something that is just so ridiculous, so blatant, that we need to do something about it. When that happens, then yell loudly and we'll take care of it. Thank you."
Jack Brindle, (WA4F1B)

Vice President's Corner

CALL FOR PROGRAM SUGGESTIONS

As your new Vice President, it is my job to line up programs for up coming NFARL meetings. Unfortunately, I really don't know that many folks in this area to ask. Please let me know if you have any suggestions for programs you would like to see, know any speakers we could ask or would like to volunteer yourself.

NOVICE CLASS Some members have suggested we sponsor a novice class and I think its a GREAT idea. We will need about six volunteers to teach the class for one evening and to backup on another evening. The classes will cover Morse code and Novice Theory, with emphasis on the code. We think it will take about six sessions of about two hours each. If you would like to be involved in class, or have suggestions, please make plans to attend the next meeting.
We have a great plans for this year, but to make

them work we need your support. Come to the meetings, get involved and offer your suggestions. As our new president said in the January meeting, "Lets have fun this year!" 73's Jim KG6TW

HOMEBREW CONTEST

All members are encouraged to participate in a club sponsored HOMEBREW CONTEST. The only requirements for entry are:

- * You built some part of the project yourself.
 - * You bring your entry to the May meeting.
- Categories include (but are not limited to):
- * From scratch - no kit used, your design.
 - * From scratch - design from handbook, magazine.
 - * From a kit - Heathkit or other.
 - * Repackage - Kit or other commercial electronics and your packaging.
 - * Humorous project - Something you built for fun.
 - * Modification to existing commercial circuit. *
- Antennas.
- * Emergency/public service use.

Entries will be judged on appearance, quality of construction, performance and anything else the judges find important to the spirit of ham radio. Participants will be given a few minutes to describe and/or demonstrate the operation of the project. Plan to dust off your favorite homebrew project, tune it up and bring it to the May meeting. We will have two or more local celebrity judges from outside the club, along with some special visitors. Winners will be displayed at the Atlanta Hamfest in the North Fulton booth.

Questions? Comments? 442-1541 73 Jim

The Amateur Radio Emergency Service

The ARES Nets operating in the Atlanta area are as follows:

North Metro: 145.47 MHz; Monday at 9:00 PM and Saturday at 10:00 AM.

Continued on page 4

DeKalb: 146.76 MHz; Monday at 8:00 PM. (time & freq. may change)

Gwinnett: 147.075 MHz; Tuesday at 9:00 PM.

Clayton: 145.17 MHz; Monday at 8:00 PM.

Forsyth: 147.15 MHz; Sunday at 8:00 PM.

Bartow: 145.27 MHz; Wednesday at 9:00 PM.

Statewide ARES Coordination Net: 3975 kHz; Sunday at 6:00 PM.

All interested hams are invited to check into any or all of these nets. Membership in the ARRL, the repeater club or ARES is not required to participate in any of these nets. Metro Atlanta District ARES BBS: 434-8523 ARES Conference, File Area 60. Gwinnett ARES BBS: 925-5487 (Scientific Atlanta ARC BBS) Conf. & File Area 1.

ARES NEWS 1989 SET SCORE

The Georgia Section score for the 1988 Simulated Emergency Test was 6,325, according to Jack Sanders, NC4E, the Section Emergency Coordinator for Georgia. This is true despite there being fewer EC's around the state reporting SET participation. This compares with a score of 4,700 for 1987 and only 1,000 for 1986. Jack noted that even though there were fewer participants in the 1988 event, those fewer participants were far more active in the SET.

WORK IN PROGRESS ON PBBS AT WEATHER SERVICE

A Zenith XT compatible computer has been contributed by Gary Coffman, KE4ZY, for use at the Weather Service office as a packet bulletin board system. Al Kuntzler, WA4MIZ, has contributed some boards for use with the system. A hard drive will also be added to the system. The machine will take the place of the old N4NYY-5 PBBS and will have that same designation.

Jack Brindle, WA4FIB, who is working with the Weather Service on the project, says that the software will be able to handle both standard AX.25

and TCP/IP protocols. The software is to be configured so that incoming messages will be printed out when received. Jack will demonstrate the completed machine and its software to Weather Service personnel. This project will entail some work in modifying software. If you have capabilities in this area and would like to help put this PBBS on, contact Jack Brindle.

NEW NET CONDUCTS TRAINING IN TRAFFIC HANDLING

The Georgia Single Sideband Association is conducting a weekly training net on traffic handling immediately following the ARES Net on Sunday afternoon on 3975 kHz. Jim Foust, WB4LBM, in Decatur is doing the training. Among the topics being covered are the formal message, the international phonetic alphabet, the National Traffic System, the CW network, net control stations, alternate net control stations and the Amateur Radio Emergency Service. The net, which began on February 5, will run each week for several weeks until the subject matter is covered. Several amateurs are tape recording the net, which Jim is encouraging. If you are unfamiliar with the traffic handling aspect of amateur radio, by all means check into or listen to the Georgia Single Sideband Training Net immediately after the 5:00 PM Statewide ARES Coordination Net on Sundays on 3975 kHz. Rick Black, WA4MPW
EC Newsletter Liason
ARES Metro Atlanta District

FOR SALE

KENWOOD TR-2600A 144 MHz FM transceiver. Extra battery and charger unit. Used only a few hours and in original carton \$225.00
Also four years of QST, 1978,79,80,81 make offer
Call Ken Waldrop (WA4WYD) 992 2291

Gamma Match

What is a Gamma Match? How does it work? These two questions will be answered in this article.

The gamma match is an unbalance version of the "T" matching system, and as such is useful in matching unbalance feedlines (such as coaxial cable) to a balanced antenna. Remember that matching the feedline to the antenna is required to maximize the power radiation by the antenna. Without a proper match, a portion of the power entering the feedline may not be radiated; it may be used up creating heat and could even damage the your coax.

The gamma match circuit is actually a series tuned circuit feeding power to the radiating element at the tap point. So, the gamma match performs the balanced to unbalanced matching function (it might, therefore, be considered a form of "balun" since "balun" came from "balance to unbalance". However, "balun" has come to be thought of as a very different kind of matching device). The gamma match is popular because it lends itself to "plumber's delight" type of construction, ie all metal parts are electrically and mechanically connected. With a gamma match a multielement antenna boom may be clamped directly to the radiating element. Figure 1 shows an example of a gamma match using coaxial feedline. "L" is the length of the radiating element and "A" is the length of the gamma rod.

The inherent reactance of the gamma matching section is inductive so, matching can be accomplished by either shorting the radiating element appropriately or applying a corresponding capacitance as shown in figure 2. Over the years, "rules of thumb" have evolved for matching 52 ohm coaxial cable to multielement antenna made of aluminum; they are as follows: 1) Length of gamma rod, $A = 0.04$ to 0.05 wavelength 2) Diameter of gamma rod = $1/3$ to $1/2$ the driven element dia. 3) Spacing, gamma rod to radiator = 0.007 wavelength

4) The capacitance, $C = 7$ pf per meter of wavelength

The adjustable matching capacitor can be an air variable type or it can be constructed of two different sizes of tubing, separated by a plastic tube as shown in figure 3.

If an air variable capacitor is selected, the plate spacing will be determined by the amount of power intended to be delivered to the matching circuit. For 100 to 200 watts, receiving type air capacitors will work. For higher power levels, larger spacing between the capacitor plates is needed. A third alternative is using the capacitance of an open ended piece of coaxial cable cut to the proper length.

Coaxial cable has a specific amount of capacitance per foot. The proper amount of capacitance to match the coax to the antenna can be determined by using an air variable capacitor, matching and then measuring the capacitance to which the air variable capacitor has been set. Calculate the length of coax by that capacitance value and cut the coax.

The capacitance shown in coax tables is typical and will vary, slightly, from cable to cable. Insert the coax where the air variable capacitor was removed and check for a match (minimum reflected power). Trim the coax as needed. Then seal everything up so moisture can not get into your coax.

If you select the aluminum tubes, separated by a plastic tube capacitor (as shown in figure 3). The outer aluminum tube size is set by the fact that it is the gamma rod. Its size needs about $1/3$ the diameter of the radiating element of the antenna (as indicated in item #2, above). This means the inner aluminum tube must be quite small in diameter and a solid aluminum rod might be more practical. In any event you can trim the rod until you reach the capacitance you need. If anyone

Continued on back of page

knows how to calculate the dimensions for this capacitor, please let me know. This capacitor is adjusted by sliding the center rod in or out.

The gamma match is most often used on beam or yagi antennas, however, there is no reason that such an arrangement couldn't be used on other antenna types, such as vertical antennas. as a matter of fact, i've built a home-brew version of Cushcraft R3 antenna using a modified gamma match at the base. In this case the gamma the gamma match was made circular around the radiating element, because the antenna is vertical and this type of gamma match has the addition advantage of isolating the coax cable from the antenna radiation field. Such isolation tends to keep field induced currents off the coax shield's outer surface, which could upset the antenna's radiation pattern.

You may come up with other unique uses for the gamma match in your own antenna construction projects. With the information provided herein, you can put the gamma match to good use. Good Luck and let me know how it works out. Morris K4KEF

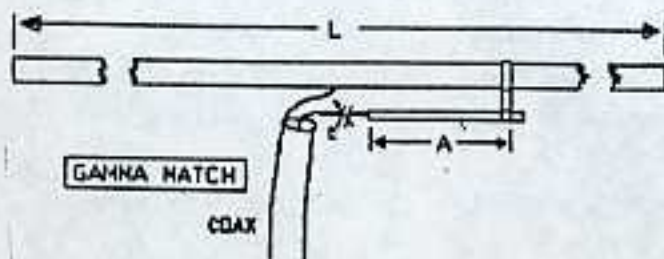


FIGURE 2

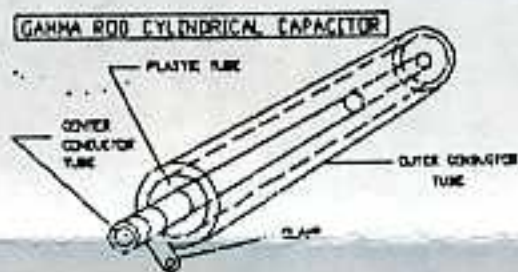


FIGURE 3

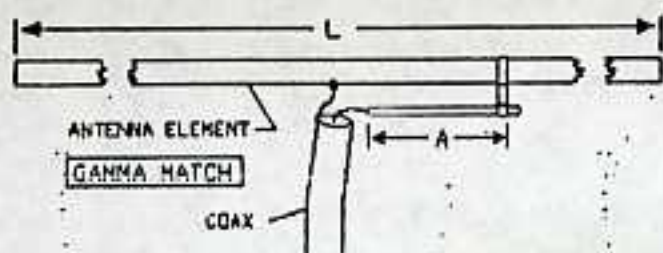


FIGURE 1

Are my ears deceiving me?

I guess that being an EC can be a real problem. At best, I had hoped that hams would know prowords and how to use them. I've been a part of several events and listened in to quite a few and I'm always amazed at how amateurish amateurs can be.

First let's look at "ROGER." It means, "I HAVE RECEIVED YOUR LAST TRANSMISSION SATISFACTORILY." I've heard people reply, "ROGER, I was unable to copy you." Even worse, "ROGER, ROGER." Does this mean, "I HAVE RECEIVED YOUR LAST TRANSMISSION SATISFACTORILY, ROGER." And on one occasion I actually heard someone say, "ROGER, ROGER, ROGER." I can't begin to figure this one out.

Next word, "OUT." This means, "THIS IS THE END OF MY TRANSMISSION TO YOU AND NO ANSWER IS REQUIRED OR EXPECTED." Maybe "OUT" be should be, "DON'T KEY THE MIKE AGAIN. WE'RE FINISHED."

Next word, "CLEAR." This word is used as a part of repeater courtesy and says, "I'M THROUGH. ANYONE NEEDING THE REPEATER, GO AHEAD."

The word "BREAK" is the same as SOS or MAYDAY. This doesn't mean that you should acknowledge the station and say junk like, "Hey, it's old so-and-so. Boy, It's been a long time since we've heard from him." Or even worse, just keep the ragchew going. Quit talking and start listening.

The worst proword I've heard on amateur radio is "NEGATORY." Pardon me while I gag on an 11-meter antenna. Also, the opposite of this is "10-4." What if you're not sure and just suppose something's right? The correct word is "SUPPOSITORY."

Whatever happened to "TACTICAL CALL SIGNS?" "NET CONTROL", "FIRST AID", and "FINISH LINE" are okay to use. As a matter of fact, once a tactical call sign is established, you can eliminate a whole bunch of paperwork and mindwork. "NET CONTROL" is always "NET CONTROL" no matter who is in the hotseat. Go RTFM (read the friendly manual) about using tactical call signs. Even better... go read October 1988 QST.

'Nuff said about us. On to the non-hams.

We've volunteered our time and may have taken time off from our job to help and what happens? The organizers aren't organized. There is always a key person that cannot be found. Why does this happen? Did the organizers forget to mark this person as a key person? Has this person wandered away from a nerve center? Or does this person not want to be found? Aggravation is non-fatal and the effects are short-lived.

Maybe what we need to do is sit down and better define what hams can do, what hams should do, and what we expect organizers to have done before we agree to help. Putting all of this together in advance will make our jobs easier and definitely more pleasant.

Sincerely,

Alan, N4QXH

From The Editor

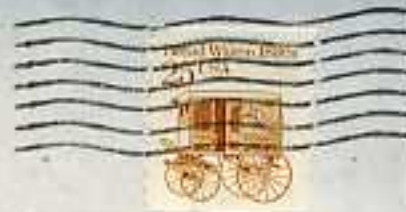
As you can tell the Newsletter look a little different now. I was loaned a program to try, and see if I like it. As you can tell it does a nice job and will make my work on the newsletter a little easier. There is very little cut and paste only the pictures that I can not get scanned to use as a overlay. Please send all items for the newsletter in 80 charter lines, this will work with the new software. DO NOT forget the cut off date of the 27th of the month for the newsletter. Send via one of the following:

1. WA4VMY PBBS
2. LARC BBS (493 LARC)
3. US MAIL TO:
Lew Cason (N4HRA)
749 Barnsmill Trace
Marietta, Ga. 30062.

ps the meeting date is correct.
73's Lew N4HRA

MEETING NOTICE

The next meeting of the North Fulton Amateur Radio League will be held on Wednesday March 8 th, at 7:30 PM at St. David's Church on Old Roswell Rd. Directions are as follows: From Highway 9 and Holcomb Bridge road take Holcomb Bridge East toward Ga. 400. Take a left at the first traffic light which will be Old Roswell Road. The church will be 3/4 of a mile on your right. Talk in on 145.47 or 147.06. The Speaker will be Steve WD4KDB who will be telling us about HAM TOWERS



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