



A A R C Bulletin

Newsletter of the Albemarle Amateur Radio Club, WA4TFZ



August - September 1993

NOTES FROM THE PRESIDENT'S DESK

Can you imagine a world without Amateur Radio? Have you taken time to reflect lately on how you came into the hobby? Perhaps you heard about the hobby on a local radio station, read an article in a newspaper or first learned about Amateur Radio from a friend or loved one.

For each of us the hobby holds a sort of magic. Most of us have or that the magic changes over time, but the sense of it is always here. Perhaps it started as the strange glow from the lights of a dial or the filaments of a tube and the magic of a voice from far away. In time it became the mastering of theory and code; a realization that with effort or an investment of time, something that, at first, may have seemed complex or impossible was achievable.

Along with our love of the hobby, most of us seem to share a love of learning and a strong desire to figure out how things work. I am convinced that the license structure reinforces that and those who are willing to work through that structure are rewarded not only with the new privileges they earn, but with a lifelong lesson that most anything can be

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AUGUST MEETING

The AARC will enjoy a field trip to Sperry Marine Inc. Sperry will be showing off their EARF (Electromagnetic Applied Research Facility) chamber and other facilities and products. All are invited.

The meeting will be at the regular time, 7:30, Tuesday, 10 August. It is recommended that you try to get there a little early.

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- ✓ WA4TFZ PBBS makes drastic change.
- ✓ AARC Awards now available.
- ✓ DX Cluster now in area.
- ✓ MICROPHONES by W2PVY.
- ✓ EXAM Schedule.
- ✓ AARC for sale list.

VEEP's CORNER

Well, this is my 3rd installment of the VEEP's Corner. So far this has been a busy and exciting year. The Special Event has been put to bed and we just finished a successful Field Day. Special thanks to Pete Taylor - KC4UCK, and Joe Fritz - KD4RWX for all their work. Good job, fellas.

With summer in full swing, we have a few things upcoming to prepare for... In August, instead of our regular meeting at NRAO, we will be getting a tour of some of the interesting facilities at Sperry. Our thanks to Will Seay - KJ4XZ for arranging the tour. In September, we have our annual picnic and we will also start our next round of Novice/Tech classes at CATEC.

We will also need to appoint a Nominations Committee in September for the October election of officers for 1994. If you are interested in participating, please let Bob - KM4DU, or myself know. Also, please be considering who you would like on the Executive Board for 1994.

By the time you read this, our 220 repeater should be an operational reality and both the .76 and .925 machines will be getting major facelifts with expanded capabilities including 911 access.

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accomplished if you are willing to make the investment of time and effort. If more people in our society shared in these values and this belief, our world would be a much better place in which to live.

The ARRL stationery refers to Amateur Radio as a National Resource. Those of us who enjoy the hobby should think of it as a renewable resource. By this I mean it is our responsibility to recruit others to the hobby. In the course of the past few years the club has made a concerted effort to share the hobby with young people.

I hope this commitment continues through future administrations. Most people live in a world without amateur radio. What a pity.

* 73, Bob KM4DU

VEEP.s CORNER - Continued from
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For all you paper chasers out there, get on the ball and be the first on your block to have a genuine AARC Operational Award. These look very sharp. Contact KD4RWX, NORDQ, or myself for more details. Also, we need to start thinking about Elmer Award recipients, Ham of the Year, etc. These do not have to be in to the Awards Committee until October, but no time like the present to get started. Well, that's about all I have for now. Take care and 73.

* Bill - KC4TQF

Virginia Digital Group

An organization designed to serve the amateur radio digital community was formed this Spring. It has been named the Virginia Digital Group (VDG). VDG will assume the task of coordinating and promoting all digital activity in the State including the various forms of packet; PBBSs, Nodes, TCP/IP, and DXCLUSTER. VDG will assist the Southeast Repeater Association is digital frequency assignment in Virginia; assist in the formation of high speed, high frequency backbones for digital activity; publish a newsletter to keep VDG members informed; and general promotion of digital communications.

The first edition of the VDG Newsletter is being prepared and will be given wide distribution in an effort to recruit new members to VDG. Most of the regular users of WA4TFZ PBBS will receive a copy. Future issues of the Newsletter will be limited to VDG members. So watch for your copy, sign up for VDG membership and help support digital activity in Virginia!

* Roy W4OTF

SHOE / BY JEFF MACNELLY



August Meeting - Continued from
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Sperry is located on Rt 29, across the street from Chi Chi's restaurant. We will use the side entrance for the meeting. To get to the side entrance, turn onto Hydraulic Road from Rt 29; go past the 7-11; go past Blockbuster; go past the Sperry ball field, and then turn right into the Sperry side entrance. When you reach the parking lot, turn right into the lot and find a parking place close to the other (closest to Rt 29) end of the lot. The building will be on your left with the entrance near the end of the parking lot. There will be many Hams and some ordinary people to greet you there. Talk-in will be on 146.76. Hope to see you there.

* KJ4XZ - Will

WA4TFZ PBBS

The WA4TFZ PBBS made a somewhat drastic change in policy effective July 22. At that time the bulletin load was lightened by not carrying bulletins of the type @ALLUS, @USBBS, @WW, etc. Bulletins of the type @ARL, @ARRL, @AMSAT, @MD-CBBS, etc. will be continued. Essentially, this is an effort to

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name TFZ an "amateur radio only" PBBS. A large portion of the bulletins eliminated contain material not related to amateur radio; such as political commentary, recipes, sick humor, etc. Other bulletins were for "sale" and "want" items, mostly located on the West Coast and of little interest to local amateurs. There were, however, a few good bulletins of technical interest; but the "trash" far outweighed the "good stuff."

A recent development led to the justification for TFZ to take action to eliminate the less desirable type bulletins. Claude, N4YRZ, moved his PBBS to Reddish Knob at an elevation of 4250 feet. Many stations in this area can connect to YRZBBS:N4YRZ direct on 145.03 MHz and those who can't can go through MA-CHO:WA4TFZ-1. Therefore, those who want to read the bulletins no longer carried on TFZ can connect to N4YRZ on 145.03 MHz or to KQ4OK in Waynesboro on 145.05 MHz direct or through ENOB.

This action results in two benefits. First, it reduces the traffic flow on the already overburdened 446.5 MHz backbone which was used to receive the bulletins from N4YRZ and KQ4OK and second, it reduces the bulletin load on TFZ so that bulletin life can be extended from the former three-day life period to 14 days. This gives those who check in to TFZ less than ten more time to read the bulletins before they expire.

This does not preclude users of TFZ from originating bulletins to ALL@ALLUS, etc. to seek tech-

nical information, etc. They will be sent out and replies will be addressed to the originator. It would probably be a better practice, however, to send these out to ALL@VANET or ALL@MD-CBBS first to see if a satisfactory response can be gained before involving the whole country.

* Roy W4OTF

AARC AWARDS

The Awards Committee has issued some changes to the basic rules pertaining to earning the awards and how the contacts may be used. The same 4 awards are starting us off, but here are the changes....

- All contacts must be direct, but may be used for multiple awards where applicable.
- Contacts must be made within a 50 mile radius of your home station unless specified otherwise.
- You must have log entries and/or QSL cards for the contacts. These may be randomly checked by the Awards Committee.
- There will be a \$1.00 fee per application to help offset the cost of materials and printing. Please note that this fee is per application, not per award. If you earned 3 awards and applied for all 3 at one time using 1 application, the fee would only be \$1.00.
- Please note a change in the accepted border states. They are now listed as AL, AZ, CA, DE, FL, GA, ID, LA, ME, MD, MA, MI, MN, MS, MT, NH, NJ,

NM, NY, NC, ND, OH, OR, PA, RI, SC, TX, VT, VA, AND WA. (This info is per the National Geographic Society).

- For those who have already earned Worked All States, if you attach a copy of the certificate, we will count those contacts for the AARC's Worked Lotsa States, Big Ten, and Border States awards.
- Awards applications may be turned in to Bill - KC4TQF, Joe - KD4RWX, or Pat - N0RDQ.

By the time you read this, we will have already processed several applications, so please feel free to join in the fun. That's all folks.....73

* Bill - KC4TQF

KC4YLX DX CLUSTER UP AND RUNNING!

The Charlottesville area now has a full-featured DX Spotting Node that is connected to the many other nodes scattered across the East Coast. The node will provide DX spots, as well as many databases, that will be of use to not only DXers, but the general user as well. These databases include Buckmaster Callbook, IOTA (Islands On The Air), Ham Radio Equipment Dealers and DX QSL Manager lists, to mention but a few. Messages may be sent to other users of the Cluster in real time (Talk Mode) as well as being sent to their home node for reading at their convenience. In order to take advantage of the vast amounts of information and DX

MICROPHONES, MICROPHONES, MICROPHONES!

* Joe Giovannelli, W2PVP

spots, simply connect and the system will guide you through the use of it. I anticipate the user port to be changed from 145.61 to 145.09 in the near future. I will post a message on both WA4TFZ (CHO) and the Node. There will also be a node similar to MACHO, except on 145.09, that will assist users that cannot connect direct. If you are unable to connect direct, please leave me a message on CHO. After the change is made to 145.09, the Node callsign will be KC4YLX-1 and it will have an alias of DXTROY. After connecting to DXTROY, you then connect to the DX Cluster by connecting to KC4YLX. If you have questions or would like further information on how to use the Cluster, or wish to support the Cluster, please let me know. 73 es GUD DX'ing!

* Ed - KC4YLX

Each Wednesday evening following the sales portion of our "Swapfest/Technical Session" I try to discuss matters which are of interest to amateur radio enthusiasts. Recently I discussed the operation of various types of microphones commonly used in amateur radio equipment. This is a paraphrase of that discussion. Because of the length of this paper, I will split it into as many smaller sections as are needed, so that I can cover this matter in sufficient detail. Of course, I hope that it is not too detailed for some.

Unless you are a died-in-the-wool CW operator, you have used microphones. Have you ever considered what's inside those small boxes and how they work.

Well, what's inside the box will be determined by the kind of mike you have. You didn't know there were different kinds? Read on.

The Crystal or Ceramic Microphone.--Years ago the most commonly used variety of microphone was the crystal or the ceramic mike. They were relatively inexpensive to produce and provided considerable output at the high impedances found at the grids of the input preamplifiers of AM transmitters.

The crystal mike employs a Piezo-electric element made from Rochelle salts. It is grown in such a way as to form a crystalline structure, so it has been called a "crystal mike." This crystal has the interesting property that, when twisted, it produces a voltage across opposite faces. Thus, if we think of a thin slab of material with foil on each side, we have the crystal assembly. When it is twisted, a voltage is present between the two foils. It is so mounted that it is free to be

twisted. The twisting force is applied by means of a diaphragm mounted so as to apply pressure at one corner of the crystal. The diaphragm is cone-shaped. Typically it is perhaps 1 1/2 to 2 inches in diameter. It collect sound waves and vibrates in accordance with both the frequency and the amplitude of these waves. This vibration is translated by the crystal into audio frequency voltage.

The ceramic mike operates in a similar way, but employs a barium titanate ceramic element.

Both types require very high load resistors, in the order of 1 megohm or so. If such a microphone was to be used for high fidelity applications, it would require about 5 megohms. This high grid resistor is needed so that bass produced by the mike won't be lost across the crystal element via voltage division action. These mike elements act like capacitors.



Frank felt that a 25 minute dissertation on canning okra was appropriate repeater traffic during the rush hour snow storm.

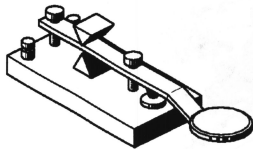
It is interesting to note that this kind of mike can operate in reverse. If a voltage is impressed across the crystal, it will twist in accordance with that voltage and will cause the diaphragm to move, thereby acting like a loudspeaker or headphone. In fact, headphones and small loudspeakers have been made using such crystal or ceramic elements.

The ceramic element is easily destroyed if too much moisture gets to it. Further, it will crumble to nothing if DC is applied to it.

Next time we'll consider the dynamic mike, and, space permitting, we will also talk about the condenser, or capacitor, microphone.

End of Part 1

Editor's Note: This article will be continued in the next issue...



WANT/SALE ITEMS

WANTED: KEYS, PADDLES 7/14/93 PAT, NORDQ, is looking for old keys or paddles. If you have some you wish to part with call Pat at 978-4117.

For Sale: 1/4 guy cable 7/14/93 WA4IUN, John, has for sale 400ft of 1/4 inch galvanized steel guy wire for 15 cents a foot. I told him he should put up a bigger tower but he prefers to sell his surplus. Call him at 296-9016 if interested.

For Sale: 4 KW generator 7/14/93 Sam, N4WJQ, has for sale a pulley driven 4000w generator w/o engine. It has 115 and 230 VAC output. If interested, call 973-6384.

FOR SALE: 2m and 440 HT's 7/27/93 I have an Alinco DJ100T 2 meter handheld. It is in excellent condition, capable of CTCSS tone encoding, 144-148 receive and xmit. With battery and charger. \$150 I also have a ICOM IC04AT (just like a 02AT but 450Mhz). Also in excellent condition with batt and charger also capable of CTCSS encoding. Asking \$200. Both of these units claim to be 5 Watts when operated from 13.8V and about 500mw at low power. Both of them produce about 3 watts on the batteries that are included. Sam N4WJQ 973-6384

WANTED: SWR Bridge 7/28/93 AA4CN wants a SWR bridge which works at 2 meters. If you can help him please call 703-456-8405 (toll free from C'ville - - don't ask!).

SCHEDULE of EXAMINATIONS

Aug 14 Massanutten ARA - Harrisonburg, VA (ARRL VEC) Contact: Marshal Cooper, N4ZKH 703/856-8012 (6-9pm)

Aug 14 Mount Vernon ARC - Alexandria, VA (Laurel VEC) Contact: Frank Mackey, N4GUS 703/155-1510

Aug 14 Richmond, VA - (ARRL VEC) Contact: Rick Cook, AB4U 804/798-5048 Pre-registration requested

Aug 28 Fredericksburg VE Team - Fredericksburg, VA (W5YI VEC) Contact Kelly Shaw, AC4MB 703/891-5581 or Carolyn Cavanagh, AC4SK 703/373-7076

Sep 11 Williamsburg Area ARC - Williamsburg, VA (ARRL VEC) Contact Andrew Swanson, WJ4X 104/253-2811

Sep 11 Richmond, VA (W5YI VEC) Contact: Dow Pierce 804/232-8128 Pre-registration requested

Sep 11 Mount Vernon ARC - Alexandria, VA (Laurel VEC) Contact: Frank Mackey, N4GUS 703/155-1510

Sep 25 WCARS - Roanoke, VA Contact Fred 104/203/366-6266

* August '93 AUTOCALL



AARC

WA4TFZ

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The Albemarle Amateur Radio Club is a public service organization advocating amateur radio and service through regional and world radio communications.

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I AM A NEW MEMBER OF YOUR RADIO CLUB

I see you at my meetings but you never say "hello".... You're busy all the time you're there, with those you already know.

I sit amongst the members and yet I'm a lonesome guy.... The new ones are as strange as I, but you old members pass me by.

But, darn it, you folks asked us in and talk of fellowship.... You could just step across the room, but you've never made the trip.

Why can't you nod and say "hello", or stop and shake my hand? Then go and sit amongst your friends, now that I'd understand.

I'll be at your net meeting, perhaps a nicer time to spend. Do you think you could introduce yourself? I want to be your friend.

➤ Anonymous

* From the North Shore Repeater Association Newsletter and originally found in the ARRL NE Division Convention Boxborough '92 Program.