The Pileup

Newsletter of the CDXA

The Carolina DX Association

W4VHF	Ted Goldthorpe	President
N4HN	Tom Wright	Vice-Pres.
K4SQR	Jim Miller	Sec.-Treas.
K4MD	Joe Simpkins	Cluster Mgr.
W3GQ	Paul Sturpe	Assoc. Cluster Mgr.
WB4BXW	Wayne Setzer	Webmaster
K8YC	John Scott	Editor

Holiday Party and Annual Meeting Awaits You!

Vice President Tom Wright has lined up a new venue for the 2004 version of the CDXA Holiday Party and Annual Meeting. The business part of the evening will ONLY consist of election of officers for 2005 and recognition of those who gave their best shot in See Whack (CWAC) so don't let the word "meeting" overshadow the word "PARTY" in reading this announcement!

Here are the details:

What:	CDXA Holiday Party and Annual Meeting
Where:	Kaffe' Fappe' 2839 Selwyn Avenue (just north of Colony Road) (2 Minutes from Park Road Shopping Center) Charlotte, NC (704) 372-1424
When:	Thursday, December 9, 2004 Social Hour at 6:30PM, Sit-down Dinner at 7:15PM
Menu:	Choice of steak, pork, chicken, or shrimp 'n pasta Includes salad, entrée, coffee/tea/soda, tip and tax
Cost:	$21.50 per person

A slate of officers for election will be proposed by the nominating committee (Jack Guion has agreed to serve as a committee of one), and nominations may be made from the floor.

RSVP to Tom Wright (n4hn@arrl.net) with the number in your group by December 7, 2004. Kaffe' Frappe' needs a head count in advance of the event for their arrangements. See you there!!

CDXA PacketCluster & Other Communication Systems		
W4DXA (11 mi. NE of Mooresville)	144.93 MHz (1200 bits/second)	441.00 MHz (9600 bits/second)
K4MD Charlotte, NC	144.91 MHz (1200 bits/second)	441.075 MHz (9600 bits/second)
K4MD (AR Cluster via Telnet)	k4md.tzo.com	
CDXA Repeater 147.18 MHz (+600)	W4DXA, Near Fort Mill, SC	
World Wide Web Homepage	www.cdxa.org	
Wednesday Luncheon (11:30 AM)	Shoney's, 355 Woodlawn Road, Charlotte, NC (704-525-4395)	

2005 Dues Needed from YOU!

The year 2004 has been a pretty good year. Your club supported the Rogriguez Island and Banaba Island DXpeditions and earned the opportunity to have our logotype on the QSL cards of those major DXpeditions. We also supported the Lord Howe Island DXpedition, albeit at a lesser level. We had a great response to our "jewel" globe as a raffle item at the Charlotte Hamfest, once again, and had a great turnout at the Rheinland Haus for the hamfest crowd. We renewed an effort in the ARRL Field Day for the first time in years, and although we found room for improvement, we did make a small mark in the effort. And, those attending won't soon forget the camaraderie and good food of this fall's Barbecue.

Best part—we're ready to do even better in 2005, but we need some seed money in the form of DUES to pay for the newsletter, keep the AR-Cluster running, support a few as yet unnamed DXpeditions, and meet a few other small expenses. How much, you say? Fifteen dollars ($15) if you don't avail yourself of the spotting network and thirty dollars ($30) if you use the spotting network via telnet or an RF link. Sending your money to Jim Miller will save him a lot of follow-up time. His address: Jim Miller
11600 Hilda Court
Charlotte, NC 28226

Nominations Are Open

Each year at the Annual Meeting/Holiday Party of the CDXA, we elect new officers for the coming year. The candidates for office will be presented at the Annual meeting by Jack Guion, W4JG, who has agreed to serve as the Nominating Committee this year.

If you would like to serve as an officer or if you would like to nominate another to serve please contact Jack with your nomination at (704) 365-3061 or via email at jguion@carolina.rr.com.

The Annual Meeting/Holiday Party will be held on Thursday, December 9, so please get your nominations to Jack no later than Monday, November 29. Details about the location and time of the meeting will be found on the Front Page of this issue of *The Pileup*.

Early CWAC Results

The first event of the CQWW radio contest season is now behind us. Many operators were surprised at the very good operating conditions on the weekend of October 30-31. Propagation was very good. Some very fine scores were being reported on the various reflectors, and some of our very own CDXAers remarked they had "personal best" scores despite being well into the downturn of the solar cycle.

As of this writing, twenty-three CDXA members have submitted scores. The total of scores of those submitting to date is 15,224,786, and that does not include a score of 4,818,752 submitted by Andre VanWyk of South Africa. Andre obviously earned a lapel pin and coffee mug for his effort, and we'll be pleased to send one off to him. Unfortunately, CQ contest organizers do not allow us to count Andre's score in the club total because only those members living within a 275 km radius of the "center" of the club may be counted. There is a proviso for including proportioned scores from DXpeditioners away from home, however, and we're looking forward to Joe (AA4NN) and Chuck (W4GMY) turning in a big DXpedition score for CQWW CW from their coming trip to Africa. We also have a query in to contest organizers to see if scores of DXpeditioners who are members but who do not live within the 275 km radius can be counted in club scoring.

The club had a goal to exceed 20,000,000 points in CWAC this year. That appears to be a very achievable goal with the early success in CQWW SSB. Now is not the time to "let down", however. We hope all will be in the hunt when CQWW CW comes around on November 27-28. See you in the PILEUPS!!

The Pileup
Official Newsletter of the Carolina DX Association

Published monthly 10 times per year, excluding the months of June and December.

The purpose of the association is to secure for the members the pleasures and benefits of the association of persons having a common interest in Amateur Radio.

Members of the CDXA shall adhere to "The Amateur's Code" as published from time to time in *The ARRL Handbook for Radio Amateurs*, and shall consist of those valid licensed amateur operators having an interest in promoting amateur radio. Long distance communications (DX) is of special interest to members of the association, but said interest is not a requirement of membership.

Dues are $30 per year for those using the DX Spotting Network maintained by the Association, $15 otherwise, payable each January. Dues are payable by check to the Secretary/Treasurer: Jim Miller, K4SQR
11600 Hilda Court
Charlotte, NC 28226

Address, telephone, and email address changes should be directed to the Secretary/Treasurer at the above address or via email at: k4sqr@juno.com.

"Outa This World" Award Goes to AA4ZZ

This fall Paul Trotter, AA4ZZ, was the first member of CDXA to win an award that you might say is "out of this world". How do we make this statement? The award is called the Extra-Terrestrial Century Club Award—ETCC for short. It is awarded by the SETI League. For those who don't know, the acronym SETI stands for Search for Extra-terrestrial Intelligence.

Here are the eligibility requirements for the award as taken from the SETI website at www.setileague.org:

> Eligibility: SETI enthusiasts documenting radio reception from beyond Earth of a suitable number of artificial satellites, manned or unmanned space probes, natural astrophysical phenomena, Earth transmissions bounced off the moon or another planet, or confirmed electromagnetic evidence of another civilization in space, are eligible to apply for ETCC Awards from The SETI League, Inc. The program is open to SETI League members and non-members alike, although interested parties are encouraged to join the nonprofit SETI League, Inc.
>
> Criteria: The initial ETCC Award is issued for the properly documented detection of five unique extra-terrestrial radio sources, as defined below. Endorsements are issued for the documented detection of a total of ten, fifteen, twenty five, fifty, and one hundred such unique sources.
>
> Categories: Detection of extra-terrestrial radio sources in the categories of Natural, Human, Moon-bounce, and Alien, in any combination thereof, as defined in the Rules and Regulations for the SETI League Extra-Terrestrial QSL program, will be accepted as qualifying for ETCC initial certificates and endorsements.

Paul qualified for his award using (1) an Aurora Borealis CW contact on 2 meters, (2) an Aurora Borealis CW contact on 222MHz, (3) a meteor contact on 2m, (4) a meteor contact on 222 MHz, and (5) an Earth-Moon-Earth (EME) contact with W5UN in Texas. (You've probably seen W5UN's EME array of 48, 18 element 2-meter antennas on the cover of QST several years ago.)

As a result of receiving this award, Paul is now fully qualified to enter "THE TWILIGHT ZONE".

Missing President Found

In last month's ***Pileup***, we honored our Past Presidents by listing all but one who had been President of CDXA since its founding back in 1981. The only year for which your editor could not identify the President was 1996. It had not been 10 minutes after the newsletter was passed out at Shoney's that Gary Dixon asked where Ken Winston's (WA4OBO) name was on the list. The missing President had been found, and it is Ken Winston.

So, Ken, a special "hats off" and thanks to you for serving CDXA as one of its Past Presidents and an apology for not identifying you along with your fellow Presidents.

Field Day Results on ARRL Website

The 2004 ARRL Field Day is now in the record books. Results can be found on the ARRL website by following the links for contest results.

North Carolina was number five (tied with Indiana) in the list of the Top 10 sections of the ARRL in participation in Field Day 2004 with 63 entries. Only Ohio (102 entries), Illinois (92 entries), and Michigan (81 entries) had more teams entered in this year's Field Day. There were 2,241 team entries in this year's Field Day from all sections. That number exceeds by 130 the number of entries in any of the years going back to 1995. Participants in this year's event numbered 33,002 exceeding all years since 1995 except for 1995 and 1997. In 2004, there was a grand total of 1,326,122 QSOs reported composed of 517,738 CW QSOs, 20,940 Digital QSOs, and 787,444 Phone QSOs.

And how did CDXA do in its 2E entry? We finished third with 6,096 points. Ahead of us were KQ2F with 6,858 points and K5GH with 6,550 points. There were 20 entries in the 2E class. We had a 700 point lead on our closest following competitor. Reasonable first effort? Yes. Can we do better? Yes. Wait'll next year!!

If you've not been to the ARRL website to see the Field Day results, I encourage you to do so. There are a number of writeups as sidebars to the main report by Dan Henderson that make for interesting reading. The "soapbox section" is quite large, and CDXA has filed a report this time around. A benefit of having contest results on the web is that much more space can be dedicated to pictures and reports of this great event.

—The Editor, K8YC

Cluster Upgrade at Young Mountain

By Paul Sturpe, W3GQ

The computer equipment at Young Mountain (W4DXA) was recently upgraded to run AR-Cluster software. Here are some of the things the new software provides for us:

1. Beaconing capability.
2. Redundant spot feeds.
3. Monthly updates to the Buckmaster database.
4. Windows-based, supported software.
5. Better troubleshooting tools for sysops.

Let's take a little more detailed look at each item.

1. Beaconing capability: The cluster software sends a "spot" to each connected station. With the old software, if no one was connected to a user port, then no spots were sent on that port. (Example: If users are connected on 2 meters but not 70 cm, then no spots are sent on 70 cm.) The "beaconing" feature of AR-Software puts out a spot to a phantom station (called DX) in addition to each station that is connected. Now you will see spots even if no one is connected. This is often important for distant users who cannot maintain a solid RF connection with W4DXA.
2. Redundant spot feeds: DX spots are collected from outside sources at K4MD, and sent to W3GQ's QTH via the internet. W3GQ then forwards the spots to W4DXA via a 70 cm radio link. A radio link must be used since we do not have internet access at W4DXA on Young Mountain. With the old software, when K4MD would "go down" due to loss of internet feeds or computer problems, W4DXA users would lose DX spotting. Now when this situation occurs, W4DXA automatically obtains the spots from W9ZRX or N3RA. This keeps the spots coming to you and you probably will not even notice changeover!
3. Monthly updates to the Buckmaster database: The club purchases Buckmaster software for the cluster. This software comes with monthly updates to keep the data current until the next CDROM is available. With the old software at W4DXA we could not incorporate monthly updates. AR-Cluster software gives us the ability to do so.
4. Windows-based, supported software: The old (DOS based) software at W4DXA has not been supported by the creator for a number of years. Therefore as bugs were detected in the software, there was no ability to correct them. Instead, we would have to find workaround solutions. The new AR-Cluster software is Windows-based and is updated frequently with new features as well as being "patched" for any problems discovered.
5. Better troubleshooting tools for sysops: Last, but certainly not least, the new software provides better troubleshooting tools for your sysops when problems do occur.

I would like to give recognition and thanks to the following folks who made this upgrade possible at minimal cost to the club (about $100.): Dave, W9ZRX, for providing his expertise in doing the initial setup of the software. Bob, N4PQX, for arranging donation of a computer capable of running the new software. An anonymous club member for his donation of a 10 GB hard drive. Joe, K4MD for his ongoing help and support. And of course, you, the membership for supporting the club financially through your membership dues.

(Editor's Comment: There are some slight differences in commands for AR-Cluster and PacketCluster. A synopsis of commands can be found in a User Manual accessible from the PacketCluster icon on the home page of the CDXA website.)

"I hate it when that happens…."

Last month your editor tried to catch up on all the contest results for several back issues of CQ and QST and give recognition to all CDXA members who had risen above the crowd. I usually focus on 4th area callsigns in doing my research, because most of our membership has a callsign with a "4" in it. Yet there are a few, like myself, who have different numerals in our callsigns, and sometimes I overlook those.

Brian Smithson, N8WRL, was my latest "victim" when I failed to notice that Brian was the top dog in the low power category for the Southeast Region in the 2004 ARRL International DX Phone Contest. There, on Page 104 of the October, 2004 issue of QST sits Brian at the top of the list for his category with 687,192 points. I guess I got so excited to find another CDXAer in a different category for the Southeast region that I blew right by Brian's name. So, Brian earned his "day in the sunshine", and we all offer our congratulations, Brian!!

Heard on "The Street"

By John Scott, K8YC

Those of you who are regular radio contest participants have experienced the organized chaos of the first few hours of the big contests like CQ Worldwide. All the "big gun" multi-multi stations of the world are rounding up as many multipliers as possible on the first evening. The "little pistols", a group which includes this author, must pick their way through the pileups using Search and Pounce techniques—at least in the early going.

It was no different in this year's CQWW SSB contest completed on October 30-31. In all that chaos, it is remarkable of how many members of CDXA I heard calling in the same pileups. Think about that! We have 6 bands in the HF contests, each of which has about 200 kilohertz of bandwidth that can be tuned along the continuum. Admittedly, there are prime stopping points in the continuum where the needed DX is hanging out, and some bands are noticeably better than others based on time of day. Perhaps we're all just savvy operators working the "right" band at the same time. Based on the scores reported in the first half of this year's See Whack (Contest Within A Contest), it appears as though many did know where the hunting was good.

Here's a list of the members of CDXA that I heard one or more times during the contest weekend (in alphabetic order by callsign):

AA4SC	Rick Porter
AA4V	Steve Reichlyn
IH9P	Fabrizio Vedovelli (IN3ZNR)
K4DXA	Ken Boyd
N1GC	Gary Colborne
N4HN	Tom Wright
N4PQX	Bob Burton
N4UH	Henry Elwell
N8WRL	Brian Smithson
W3OA	Dick Williams
W3ZL	Cliff Wagoner
W4UFO	Nobby Mills
W4ZV	Bill Tippett

I actually had a contact with AA4V who was "running" at the time on late Sunday afternoon. I stopped Steve just long enough for a quick hello so he wouldn't lose his run frequency. Perhaps my "success" at spotting members is because I languish in the Pileups too long. When I finally get my 3 towers and stacked monobanders, I'm hoping to hear fewer of you!!!!

Heathkit: Rise and Fall of a Ham Radio Icon

By: Ronald R. Thomas, W8QYR

(The article which follows was prepared by Ronald R. Thomas and published in the November, 2004 issue of **World Radio**. *It is reprinted here with permission of both the author and the publisher.)*

Heathkit was the generic name for electronic kits once offered by the Heath Company. The company started in the electronics business by selling surplus electronics parts after World War II. Then it began to offer electronic test equipment in kit form at very reasonable prices.

Those kits were a tremendous success, which motivated the Heath Company in the 1950s to enter the Ham Radio market. To understand Heath's successful entries into that market it is necessary to understand the nature of ham radio in the 1950s.

The Rise of Heathkit

The 1950s were a relatively prosperous time for most, but certainly not all, Americans. There was money for hobbies, like ham radio. Also, the creation of the Novice Class license in 1952 made it much easier for people to become amateur radio operators, and many people got a Novice license.

Those newly licensed operators needed a receiver and transmitter. Receivers were fairly complex devices and many hams bought one from companies like Hallicrafters or National Radio. A transmitter, particularly one for continuous wave (CW) operation was by comparison a much simpler device. However commercially built CW transmitters tended to be fairly expensive, which motivated many hams to build their own transmitters.

Unfortunately building even a simple transmitter was a fairly complex task. The first step was to find a schematic diagram for a transmitter in a ham radio magazine or handbook. Usually, there would also be a photo or two of the transmitter and a parts list. The next step was to find the parts. Some cities might have a store that sold new parts. A few cities might even have surplus parts stores. Also, a local hamfest could be a source of parts. When all else failed, a ham would order the parts from a mail order company like Allied Radio.

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When all of the parts had been obtained, work could begin on figuring out how to lay them out on a metal chassis. Usually, a ham would cover the chassis with paper and mark the layout for tube sockets, transformers, switches, dials, and other components. Next, holes had to be drilled for those major components, and then they were mounted in place. The final step was to solder the resistors, capacitors, and other components and the wires connecting major components.

Building even a small three-tube ham transmitter could be a major undertaking, particularly for a new Novice operator. Also, a homebuilt transmitter had little, if any, resale value. The Heath Co. was aware of the potential sales opportunities for a low cost ham transmitter and in 1952 offered its AT-1 transmitter.

Heath's decision to offer the AT-1 involved minimal financial risk. There was little developmental cost, since Heath simply did the same thing that a ham would do to create a transmitter. Heath engineers located a schematic diagram and created a bill of parts, many of which were readily available in Heath's extensive stock of surplus parts.

The company had metal working and painting facilities used for its existing test equipment business. Those facilities could punch the necessary holes in a metal chassis and the mounting cabinet for each transmitter. Each cabinet was then painted and had the necessary markings for the switches and other front panel components.

If all Heath had done were to put those parts in a box, along with a schematic diagram, hams would have bought the AT-1. Heath, however, added its magic ingredient—an instruction manual that contained detailed assembly information. The manual had step-by-step assembly instructions and pictorial wiring diagrams. Heath had experience in writing those manuals for its test equipment. Heath knew what the Novice class ham operator needed to successfully build the AT-1.

Priced at $29.50, the AT-1 was a success. One of the reasons that Heath could reasonably price the AT-1 was the fact that hams supplied the labor. Even a simple transmitter, like the AT-1, required a number of hours of assembly time. Commercially built transmitters were more expensive, in large part, because of the cost to pay people to perform the assembly work.

In those days, the Novice license was good for only one year, and the Heath Co. knew that many of those operators would be moving up to a General class license. They would need a more powerful transmitter that could also be used for AM phone operation. Heath's answer to that need was the DX-100 transmitter. Heath used the same methodology to develop it that had been used for the AT-1. However, the DX-100 could deliver 125 watts on AM phone, using high level class B modulation, and 140 watts on CW. It also had a VFO, and was a large stable transmitter. Priced at $189.50 it was a success and put Heathkit on the road to becoming a ham radio icon. The DX-100 certainly required more assembly time and work than the AT-1. However, the DX-100 chassis was large and assembly work was fairly straight-forward and easily accomplished by the average ham.

The 1960s and 1970s were the glory days for the Heath Co. They continued to offer new ham radio equipment on an ongoing basis. The HW-100 transceiver was another tremendous success. It was rare to find a ham who did not own at least one piece of Heathkit gear. Hams loved building a Heathkit. There was the thrill of opening the box, laying out parts, reading through the instruction manual, and starting construction work. Most hams would work every evening and weekend until they had finished the construction work.

Hams loved talking on the air about their latest heathkit. Hams were a tremendous source of free publicity for the Heath Co. which made significant profit from the sale of Heathkit ham equipment.

Over the years several different corporations owned the Heath Co. For the engineers who were designing Heathkit ham equipment it was a labor of love, but for the owners of the Heath Co. the issue was to make a profit. Unfortunately, this eventually became more and more difficult and eventually it became impossible.

The Fall of Heathkit

A number of factors lead to the eventual downfall of the Heath Co. and the demise of the Heathkit. Surplus parts became hard to find, and Heath had to use more expensive new parts in its ham equipment. The move to single sideband, transistors, and transceivers increased development costs and leadtime for new ham equipment. Also, many more components were needed in equipment

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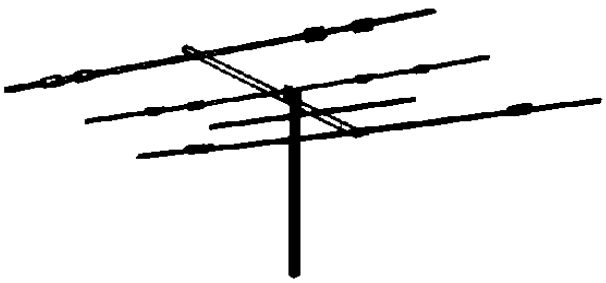
like transceivers, with the associated possibility of failure. In addition, some of the equipment became increasingly difficult for hams to build, align, and troubleshoot. Furthermore, hams who started in the 1950s building Heathkits might be wearing bifocals in the 1970s and 1980s. Building some of the more complex Heathkits was becoming increasingly difficult.

Arguably, one of the least understood factors that lead to the demise of Heathkit was the printed circuit board Those boards were widely used in Heathkits. The kit builder soldered resistors, capacitors, transistors, and other components onto the boards. However, printed circuit boards, unlike the old metal chassis, leant themselves to automated assembly. Machines could be used to mount and solder components onto printed circuit boards. This dramatically reduced the labor costs associated with building electronic equipment, including ham equipment. Heath's competitors, particularly those in Japan, were well aware of the new economics of ham radio equipment.

Japanese companies gradually began to offer commercially built ham equipment that was competitively priced with Heathkit equipment. As much as they might have loved Heathkits, hams eventually began to migrate away from Heathkits to the price-competitive, commercially built Japanese ham equipment. By the 1980s, the Heath Company's then current corporate owner was well aware of the competitive difficulties and eventually the Heath Co. exited the ham radio market.

The demise of the Heath Co. and its Heathkits was a sad affair. The drama played itself out, over a period of several years, on the ham radio bands where hams would talk about Heath's problems. When the end finally arrived, it was like watching the passing of a loved one.



CWAC—Stage Two

Here's a reminder for those who've not been reading the Pileup for the past few months. Enter the upcoming CQWW CW contest, send your score to CQ with CDXA listed as your club affiliation, notify W3GQ of your summary information (sturpe@charter.net), and (1) win a CDXA lapel pin with 100 QSOs, (2) add a CDXA mug with 500 QSOs, and (3) earn an acrylic plaque to go with your pin and mug if you have 1000 QSOs or over. Simple enough? We're shooting for more than 20,000,000 points as a club this year. Lend a hand, please.

The Magic of 1/4 l and 1/2 l Stubs

Did you ever have a problem with interstation interference from multiple transmitters? Yes, you can purchase some pretty fancy filters and lighten your pocketbook in the process of solving the problem. But, there are less expensive alternatives if you know how to measure, how to solder, and have some coaxial cable lying around. The "magic" is in the use of 1/4 wavelength or 1/2 wavelength stubs and the foresight shown in giving the amateur radio bands a harmonic relationship. These relationships enable a single tuned stub to block interferring transmitters from multiple bands. I'll not try to do justice to this topic here, but there is a great article in the November, 2004 issue of QST by Ward Silver (Hands-on Radio, page 61). Ward provides some neat graphics to inform how stubs do their work. He also provides a table of stub types and the bands they filter. This is must reading for all. *—The Editor, K8YC*

BPL Update

Much has been much written about BPL since the FCC's Report and Order (R&O) was published on October 14, 2004. The R&O provided acknowledgement of the interference potential of BPL to licensed services, and Amateur Radio in particular, but little was done to tighten the Part 15 requirements on BPL in the R&O. A small victory was that BPL devices will have to undergo greater certification procedures than originally proposed. Unfortunately, hams will have to *react* to interference from BPL rather than being protected from it. ARRL President Jim Haynie recently sent a letter to Secretary of Commerce Donald L. Evans, copy to President Bush, expressing his dismay at NTIA's backpeddling on the BPL issue. (Details on the ARRL website.)

The Back Page

Come one, come all to the **CDXA Holiday Party and Annual Meeting** on December 9, where the emphasis will be on having a good time! Officers will be elected and CWAC winners will be honored. Details are on Page 1 of this issue. Please RSVP to Tom Wright, N4HN, with the number in your group by December 7, 2004.

The **Contest Within A Contest** is far from over because CQWW CW awaits you. You can still earn a lapel pin for as few as 100 total QSOs reported in either or both contests. Five hundred QSOs earns you a CDXA coffee mug. Go for it, get 1000 QSOs, and earn a neat acrylic plaque. Some great scores were reported following CQWW SSB. It is clear propagation still provides some exciting contesting. Contest summary is on Page 2 of this issue. Page 7 outlines CWAC submission requirements.

Nominations for Officers for 2005 are being taken by Jack Guion. See Page 2, inside.

It is time for you to pay your **2005 Dues**. See Page 2 for details. Prompt payment will be greatly appreciated by our treasurer.

Ever own or build a **Heathkit**? The history of the rise and fall of Heathkit, courtesy of *World Radio* magazine and author Ronald Thomas, W8QYR, is inside on Page 5.

Upcoming **Contests**: Is there anything else? CQWW CW is on November 27-28. Dust off your keyer! If you survive CQWW, try ARRL 160m contest on December 3-5 and ARRL 10m contest on December 11-12!

No **PILEUP** next month as the editor get his semi-annual hiatus from writing.

Jim Miller, K4SQR
11600 Hilda Court
Charlotte, NC 28226

k4sqr@juno.com

First Class Mail

See something wrong with your address label? Notify K4SQR at once, please.