November 1997

The Pileup

Carolina DX Association

Newsletter of the CDXA W4DXA

AA4R Bill Parris President
W4WN Cliff Wagoner Vice-President
K4MQG Gary Dixon Sec.-Treasur
K4ZA Don Daso Editor

CDXA PacketCluster system

N4ZC Stanley, NC		144.930 & 441.000
digis on Young Mountain		DXUYNG 441.00
(type <C DXZ> after connecting to DXYNG)		144.950
digi in Greensboro (type <C DXZ> after connecting to DXYNG)		144.950
digi on Beamer Knob (type <C DXZ> after connecting to DXBMR)		144.93
K4MD Charlotte, NC	144.910 & 441.075	(1200/9600 baud)
digi near Wingate		DXWIN 144.91

PRESIDENTIAL PONDERINGS

It's hard to believe that 1997 is almost behind us. Time obviously goes by faster as we get older.

Plans have now been set for the annual CDXA Christmas Party, where the one major business activity of the entire year takes place—the election of officers. I've certainly been honored to serve as President this year, and have been blessed to have such diligent and competent individuals working in critical leadership positions. I'd like to thank the two other elected officers, Vice-President and special events chairman Cliff Wagoner, W4WN, and Secretary-Treasurer Gary Dixon, K4MQG, for their efforts on behalf of the club. We also need to express our appreciation to the "non-elected" individuals who provide functions and services that continue to make CDXA a strong and viable organization—Don Daso, K4ZA, editor of *The Pileup*, along with Roger Burt, N4ZC, and Joe Simpkins, K4MD, our PacketCluster SYSOPs.

For 1998, the following slate of officers is being offered for your consideration: as President, Joe Simpkins, K4MD; as Vice President, Cliff Wagoner, W4WN; and as Secretary-Treasurer, Gary Dixon, K4MQG. We appreciate these individuals stepping forward and agreeing to serve if elected. Additional nominations will be entertained at the Christmas Party/Election on December 17, at the Branding Iron Restaurant in Rock Hill. Please plan to attend and enjoy this evening of camaraderie.

1997 was a good year for many of us, and CDXA certainly had some good accomplishments and memorable activities. I particularly remember our club booth at the Charlotte Hamfest, the DX hospitality evening at Valentino's, the each-and-every Wednesday luncheons at Shoneys, the receipt of our club call—W4DXA, the swell BBQ at K4BVQ's QTH, the tremendous score at N4ZC's station during October's CQWW, *The Pileup* appearing on a regular basis, our reliable packet network, and the continuing operation of a QSL Bureau that represents the "best of the best." We have good reason to be proud of these accomplishments, for they all represent the efforts of individuals in this club who "made, and continue to make, it happen." We all need to recognize these individuals, and be proud of their efforts.

But as you constantly read in *The Pileup*, there are many more things the club (and individuals) could be doing, and they all require individual effort. Preparing articles for the newsletter, working on a club web page, bringing guests to our meetings, participating in contests (either as individuals or a team), helping others with antenna or technical projects, checking up on those who are ill, selling raffle tickets, setting up demonstration stations, helping at the hamfest, working on the packet system, arranging programs, manning a club booth, operating at Discovery Place, talking at other radio club meetings, sorting QSL cards, soliciting new members for CDXA.... The list goes on Each and every one of us can contribute to this club and its activities. I hope, in 1998, that each of you will consider expanding your individual contributions to the CDXA. And thanks again for allowing me to serve as your President in 1997!

73 and good DX de AA4R

EDITORIAL

This will be, we hope, the last issue of *The Pileup* mailed to the complete membership of the CDXA. We hope many of you will begin to read the newsletter on the World Wide Web. We have a "dummy" page for your review; here's the URL to use:
http://www.mindspring.com/~antman/cdxa/index.htm

We need and want your reactions. It's been another labor of love—this time with help from Anthony Proctor, who is our web guide at Corporate Media Services. The CDXA page currently resides on or within Anthony's own homepage. Depending on club reactions, the page will wither and die, or expand and move.

Those of you who know something of the Internet and its workings are urged (nay, told flat out) to let me know that from now on you'll be reading these pages electronically. We hope at least 30-40 members can read the newsletter this way; the savings will be significant. Our regular publishing schedule continues—the newsletter goes to press as close to the 10th of the month as humanly possible. The current issue will remain active on the homepage for that month. Then it will go into the archives, also there on the homepage.

Please, take some time to react to the site. Tell me things you have seen elsewhere on the Web (perhaps on other club's homepages) you'd like for us to include, or things you'd like us to change. Be critical (also be rational, the site is still under construction, after all) and yet be specific and honest. Again, none of this makes any difference unless the membership shows an interest. The CDXA deserves to be a bigger and better club. We should be more like some of our other radio brethren. We hope this is a step in that direction.

A special note: the last two issues of this newsletter were printed incorrectly by our printer. The article on fasteners runs here in its entirety. I regret the error. ***–K4ZA***

CHRISTMAS DINNER

CDXA Annual Christmas Dinner will be at The Branding Iron in Rock Hill (3040 Cherry Road) on Wednesday December 17, 1997. Reception (cash bar) at 6:00 & dinner ($12.50 plus tax & tip) at 7:00. Dinner choices are prime rib or grilled chicken.
Please RSVP with dinner choice to W4WN, Cliff Wagoner via packet, or telephone (704-598-5373), or e-mail (pmqd44a@prodigy.com).

SOME MORE WORDS ABOUT FASTENERS, etc.

Efforts in rebuilding & modifying antennas at N4ZC have reminded me I promised a few more words on this topic earlier this year. Herewith, some thoughts on:

HOSE CLAMPS

Hams who build any type of hf beam antenna will inevitably have to answer the question of "how to fasten" aluminum tubing together. Beam tubing joints, which can telescope together quite nicely, must be made solid, both mechanically & electrically. I recommend only top-quality worm-gear-type hose clamps with through slots. Clamps with "formed" slots are worthless. Stainless steel is the only way to go—for both the clamp & the screw mechanism. (Ideal & Trident are both quality brand names.) Look for hex-head type of screws—which can be turned either with a screwdriver or a 5/16-inch nutdriver. I usually try to put the screw itself directly over the slot in the larger tubing before tightening. And, I usually do not try to over-tighten these clamps. (I have broken them on occasion. One of these days, I promise I'm going to buy a **torque wrench....) Aircraft manuals specify 15-inch lbs. of torque for hose clamps. And that's** for a pressurized system. Something less than that will work fine for holding elements together. Obviously, I believe the mechanical joint is the fundamental building block. Electrical continuity can be obtained by driving a stainless steel sheet metal screw through the mechanical connection.

CORROSION

Sometimes, when you take apart one of those nifty aluminum antenna joints, you'll discover some fine white powder at the connection. Since it takes a lot of energy to extract aluminum ore from the earth, then create that swell tubing we take for granted, it's easy to see how, in the long run, this metal will return to its natural, corroded state—as it "releases" all the energy we've put into it. In the air, aluminum oxidizes easily, forming aluminum oxide, that white power you encounter. Another type of corrosion hams encounter frequently is bi-metallic corrosion. This occurs when two metals with the right properties connect, & an electrolyte is present. It's a chemical process (which is sometimes hard for folks to grasp, since we're talking metals, but that's what it is—just like a battery). Simply put, electrons flow from one metal (called the anode) across the joint to the second metal (called the cathode). Hydrogen gas forms at the surface of the cathodic metal junction. Positive ions left in the anodic metal then oxidize. In bi-metallic joints, the more anodic metal always corrodes away. The electrolyte can be some kind of salt—anything which makes the joint conductive. Acid rain, even dew or salts deposited from your hands, are sufficient to start the process. I've included a chart of galvanic metal activity, which shows the electro-potential of these metals or alloys. They are listed by decreasing potential—from most anodic to most cathodic. Generally, it's best to choose those that are close together on the chart for trouble-free results. For instance, you can see that a junction of aluminum & zinc would be good, while a joint of aluminum & copper would be bad. (Now you know why those gold-plated edge connectors on one of your plug-in computer cards corroded so easily in the tin-plated motherboard socket.)

SOME MORE WORDS ABOUT FASTENERS, etc.
continued

Remember that electrical connection means mating surfaces will have microscopic bumps & points where these metals meet. The joint impedance is proportional to the number of such points. Lots of points with little getting in the way means a good joint. For aluminum, I've found it's best to clean joints with steel wool, emery cloth, wet/dry sandpaper, or even a small wire brush if necessary. (ScotchBright scouring pads work well, too.) Do not contaminate the clean surface with your fingers after cleaning. Joint pressure is important because oxides start to form immediately after cleaning—the pressure must be great enough to "break" through this layer. As the metals flex, a phenomenon called "fretting corrosion" occurs, whereby the clean metal part of the open connection oxidizes & builds up. This is why antennas (which worked just fine when you put them up) sometimes seemingly fail all by themselves up in the air. Joint compounds help seal these connections, & inhibit electrolytic activity. They are available from electrical supply houses, hardware stores, some home improvement warehouses (like The Home Depot), even a couple of antenna manufacturers ship them. These compounds will not, alas, last forever. They dry out; they harden & crack. Over time & through temperature variations, they will simply flow away from joints. Some sort of finish or overcoat is also a good idea. Choose something that will flex & resists ultraviolet light.

SCOTCH 130

For the past three years, I've been using this product at Roger's antenna farm. It's a "linerless rubber tape" product which the electrical industry uses to seal high voltage connections. "Linerless" means there is no adhesive on this tape. It will NOT stick to connections. Indeed, as you peel it off the roll, it hangs limply in your fingers, & you're not sure it's going to be any use whatsoever. It does, however, stick to itself, because you roll it on with the "sticky" side out or up. It should be wound around connectors—starting from the bottom up like roof shingles—under tension. It stretches & molds itself easily around connectors, like PL-259s. It must be protected from the elements (we use Scotch electrical tape), but it works. It will take a few moments of effort to get a knifeblade through the covered connector after a couple of years, but once you get an end loose, you can peel the whole mess away, & be surprised with a new-looking connector. It's somewhat expensive (I buy mine at Home Depot), but the ability to protect a connector & have it reusable is invaluable.

SCOTCH LIQUID ELECTRICAL TAPE

Another quality Scotch product, although one I've only used for about a year. If you have the time to wait for it to set up, & the ability to brush it on to the connector (for instance, if you're not hanging upside down & backward 120 feet in the air), it works perfectly to seal the 130-tape-covered connector. It's also a good choice for covering normally exposed antenna electrical connections—such as the feedpoint. It solves the perennial mistake many hams make in using normal sealants or caulk. (If the sealer you use emits a vinegar-like smell, it's quietly dissolving your connections inside its silicon base. That vinegar smell is acetic acid, which doesn't do metal any good.) Try this liquid electrical tape for such joints. **—K4ZA**

DX Advisory Committee News

The DXCC 2000 Committee's Interim Report and recommendations will be presented to the ARRL Board of Directors in January, 1998. Parts of this report are outlined below. If accepted, these recommendations will go into effect in 1998, but will not be applied retroactively. Countries could be withdrawn from the list in the future using the deletion criteria . New countries could also come about using the new criteria, so it appears that DXers could have some interesting and exciting changes in the near future.

(A): DXCC COUNTRIES LIST CRITERIA

Point 1, Government
For a country to be on the DXCC list, by reason of Government, it must meet one of the three listed requirements:
1. Be a Member State of the United Nations
2. Be a member of the International Amateur Radio Union
3. Have an official ITU-assigned callsign allotment

Point 2, Separation by Water
1. The 225 mile requirement is replaced with 350 kilometers
2. The 500 mile requirement is replaced with 800 kilometers
3. Paragraph 2(d) is changed so that "minimum-size" is defined:
Must consist of two points separated by not less than 100 meters of connected land above the high tide mark, as demonstrated on a chart of sufficient scale. For the purpose of this award any island less than this size shall not be considered in the application of the water separation rules.

Note: Measurements will be conducted in kilometers and rounded off as close to the existing distance as practical. Eg.: 800 KM = 497.2 Miles or 2.8 mile reduction; 350 KM = 217.52 miles or 7.48 mile reduction; 100 KM = 62.15 miles or 12.85 mile reduction. The 10,000 square foot area was replaced with the 100 meter straight line. This will make it easier to determine minimum size.

Point 3, Separation by another DXCC Country
1. The 75 mile requirement is replaced with 100 kilometers

Point 4, Ineligible Areas
1. No changes proposed

(B): DXCC AWARD STRUCTURE
The new DXCC structure can be divided into two major categories: The Mode Award and The Band Award. More on this next month.

(C): DXAC Studies Three Countries For Deletion or Withdrawal
1. Southern Sudan (ST0) for possible deletion
2. Kure Island (KH7K) for possible deletion or withdrawal
3. Fernando de Noronha (PY0F) for possible deletion or withdrawal

The DXAC's recommendations will also be delivered to the Membership Service Committee in January, 1998.

--K4MQG
DXAC representative
Roanoke Division

TIDBITS, OR FASCINATING FACTS

Internet Trivia

The origin of the term, "hot dip galvanizing," has absolutely nothing to do with protecting metal from corrosion. The name comes from Italian physiologist, Luigi Galvani, who identified the effects of electrical current on the nervous system of dead frogs (you may recall this from 8th-grade biology class). In the early years of electrical studies, zinc was the most widely-used metal in producing galvanic electricity. In 1837, French scientist Sorel patented a process for dipping steel in molten zinc, and provided the name "galvanizing" in honor of Galvani, who died in 1798.

Al Kahn, K4FW, founder and chairman of the board of Ten-Tec, was one of the two founders of the Electro-Voice Corporation in the 20's. E-V was named by none other than Knute Rockne ("The Gipper"). Al had set up a microphone and speaker system on the practice football fields of Notre Dame in 1927, for Rockne to use in directing the Irish practices. Rockne called the set-up his "electric voice." The name stuck.

Al was also instrumental in the founding of Heathkit following World War II. Heath was located some 25 miles away from the E-V factories in Michigan, and Al provided a traincar full of war surplus electronic parts that evolved into Heath's first electronic kit project—an oscilloscope. The rest, of course, was history....

In 1965, Al came to Tennessee to open two Electro-Voice plants, one in Sevierville, (home of Ten-Tec) and one in Newport, some 20 miles away. To this day, the Sevierville E-V plant is located directly across the street from Ten-Tec. Al always had an interest in manufacturing amateur radio gear. He's also always been a fanatical CW op (he's on 40 CW each day, an interesting twist to a microphone manufacturer's story), and in 1968 sold his interest in Electro-Voice, bought 15 acres of land across the street, put up our building, where he and co-founder (and still president) Jack Burchfield, K4JU (a former E-V employee) began doing tool and die work and building QRP ham gear. Twenty-nine years later, Ten-Tec remains 100% owned by current and former employees and their families.

FOR SALE

Wilson DB-43, 10/15M duo-band beam antenna. 4 elements on 15M & 3 elements on 10M, on an 18-foot boom, using 2 feedlines. Pick up in Charlotte area. $175.

Mosley PRO-67-C, 7 bands 40-10M, including all WARC bands. 3 elements each on 40-12M, 4 elements on 10M. All with one feedline. 3-inch diameter, 24-foot boom. This antenna is still in original shipping crate—never opened. Currently selling for $1587, including freight. Pick up in Charlotte area. $950.

Contact Bill, AA4R
704-892-4081
or via packet at N4ZC

THE BACK PAGE

I've been debating including the following for several months. I've held back (because it's not really my kind of humor), but I've heard two comments the newsletter's stuffy & boring, so here goes nothing, as Mel Brooks probably thought on at least one occasion....

A BRIEF HISTORY OF THE WORLD IN HAM RADIO TERMS

4 Billion BC - Earth is a swirling ball of gaseous flames. Propagation is extremely poor
1 Billion BC - First dry land appears. It is divided up into grid squares
500 Million BC - Second patch of dry land appears. First DX-pedition (invented by a guy named "Gus"), credit disallowed because of questionable licensing agreement
400 Million BC - Flowering plants and grasses evolve. TELREX invents first beam antenna, but sales are slow because of lack of suitable structures
300 Million BC - First tree appears and is immediately cut down, stripped of branches, placed in a concrete base and re-named a telephone pole. TELREX sells first beam antenna
200 Million BC - Second beam sold by TELREX. Installer falls from top of pole. First safety belt sold
100 Million BC - First mountain appears. Repeater invented
50 Million BC - It is decided by WARC that "seek you" is too cumbersome to send on CW, so abbreviation "CQ" is adopted
4 Million BC - Humans replace swine-like creatures as dominant species. The name "Ham Operator" hangs on, however
3 Million BC - Dugout canoe invented. Maritime Mobile Net formed on 14.313 MHz
2 Million BC to 800 AD - Nothing much happens for a long time—life "as we know it" comes into existence
900 AD - Chinese invent gunpowder. BY1AA is first "big gun" DXer
1790 AD - Ben Franklin invents long wire receiving antenna. Ground switch invented
1961 AD - Second repeater erected. First repeater group refuses to change frequency. First repeater coordinator appointed
1997 AD - Amateur Radio humor sinks to a new low

Been dreaming about antennas, sunspots, DX, or some combination of the above? Consider the contest scores submitted by KT3Y—using ONLY wire antennas.

Dear Don:
Here's the current station configuration: two IC-765 fully inter-switched with AL-1200/AL-82 amps. Antennas:

160: loaded delta loop, top at 90 ft, bottom about 6ft high
80: NW/SE dipole, phased dipoles NE/SW
40: 3L wire beam, N/S E/W dipoles
20: 5L wire beams EU and JA, stacked dipoles N/S, E/W
15: 5L wire beam EU, 3 lazy Hs
10: 3 lazy Hs

I use the lazy Hs on 15/10. All antennas mounted between trees. Average height about 70 feet. I use three two-wire beverages for receiving in six directions on the low bands. The phased dipoles for 80 are new and worked well in the WPX and WAE, so I'm hopeful that my 80m scores will improve. All antennas fed with ladder line to ground mounted tuners in mail boxes. I've used both link coupled and L network designs with a coiled current input coax choke. Their efficiencies are equivalent, but the L network designs are easier to build, do not require a metal mail box and appear to have better bandpass characteristics.

73 Phil KT3Y

An important point to remember is that Phil is a superb operator, and that he has choices—solutions to make, even using only wires. Don't let circumstances dictate YOUR operating skills & abilities!

Are you computer savvy?
Active on the Internet?
Surfing the WWW?
Wondering when CDXA would limp into the 90s?
Well, brother, your wait is over.
Try visiting the trial homepage we're working on, at:

http://www.mindspring.com/~antman/cdxa/index.htm

We're looking for YOUR reaction!

Don Deso K4ZA
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FIRST CLASS MAIL

See something wrong on your address label? Notify K4ZA at once!