March 1999

The Pileup

Newsletter of the CDXA

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Carolina DX Association

CDXA PacketCluster & other communications systems			
W4DXA Young Mountain	144.93 (1200 baud) & 441.00	(1200/9600 baud)	
K4MD Charlotte, NC	144.91 (1200 baud) & 441.075	(1200/9600 baud)	
digi-peater near Wingate, NC		DXWIN	144.91
repeater 147.18 (+600) near Fort Mill, SC			
homepage <www.cdxa.org>			

PRESIDENTIAL PONDERINGS

It's almost time for the Charlotte Hamfest and you'll probably get this *Pileup* just before the big Charlotte event. This year, we should have a much larger representation of the club in our slide show, so come by and see what other members are running. And don't forget to purchase some raffle tickets for the Brockstone Tool Set—our prize this year. For those who don't know me, I'm looking forward to meeting you.

On the DX front, I'm sure most of you probably worked the E44DX expedition. If not, there are several JAs now in E4-land as well as several HAs signing E44/HA1AG. Palestine may be a new one now, but when the polls are taken, I'll bet E4 will be way down the list of "most-wanted countries."

Don't forget the contests upcoming. Please work your fellow CDXA members, when appropriate. AA4S was very surprised when I worked him in the 160M contest last night, running about 50 watts into my 75M inverted-V. Submit your scores to Cliff, W4WN, for a possible club score, as well as inclusion in the next *Pileup*.

ARRL International DX Contest (phone) March 6-7
CQWW WPX Contest (phone) March 27-28

I hope to see all of you at the Charlotte Hamfest, as well as CDXA's Saturday Night Reception at the Steak & Ale on Woodlawn Road near I-77.

73 Bob N4PQX

HAMFEST EDITION

Welcome to the Carolina DX Association's booth. If you've picked up this copy of our club newsletter for the first time, you'll find the CDXA is, of course, primarily focused on HF operating—chasing foreign countries on both modes, collecting QSLs and awards, contesting, and building some mighty fine stations.

Take a moment to look at the slide show running here, where you can see what some of our members are running. If you have any interest at all in HF operation, the CDXA can probably help you. Full details are available from members manning this booth, or you can get all the particulars at our site on the World Wide Web, too. <cdxa.org>
We have a version available here in the booth, for your enjoyment.

EDITORIAL

Since some articles in this month's issue deal with our oldest mode of operating, CW, I thought a few words on the subject might work well as an editorial: *Why I Like CW*

It's partly because it's our oldest mode. It's partly because I struggled with it while I was a Novice. (I remembering receiving some QSLs which said something like "U Got A Gud Fist"on them and being especially proud.) It's partly because it's easy, now. But I mostly like CW because I discovered way back there in my Novice days that not everyone was good at it, or could do it, or liked it or even wanted to do it. Immediately, CW became special to me. It was obvious, on reflection, that anyone could pick up a microphone, but that not everyone could easily "get" those little beeps emanating from the rig. I vowed I would learn or teach myself how to do so. I persevered, but college, jobs, the usual stuff of life, got in the way. It wasn't until many years later, when I became a "traffic handler" on various nets, which lead directly into contesting, that I learned the true "art" of CW.

Ultimately, it was a collection of little things that made the difference. By then, I knew enough about life, and had studied art some in college—enough so I knew it was truly that. CW is also a language—a group of sounds conveying information across space, across cultures, across all sorts of artificial barriers...oh the poetry of it hooked me but good. I found the high speed boys up above 7025, those keyboard wizards who do nothing under 40 WPM. I found myself living in New York, active on NYS, EAN, 2RN, and I found myself really enjoying the CD Parties. (The CD Parties were QSO parties, sponsored by ARRL, for their Communications Department appointees. I was an Official Relay Station—a harbinger to radio's colorful past.) In a few short hours, you could have a terrific time. I learned how to "operate" in those contests: How to run the radio, but more importantly, how to "tune in" to what those little beeps really meant. They could tell you a lot—more than simply *ORS, NY* might imply.

Some of the people I worked in those CD Parties are still around, still contesting, like K1ZZ, or W2GD, or K3ZO. Some, like W4KFC, are now Silent Keys. I remember them all, however. I remember the rush I got from the 10-second rat-a-tat-tat exchange of KH6IJ when I first worked Nose in a DX contest. The guy was really flying and I could copy it. I sat there, just listening. I wanted to be able to do what he was doing, because again, it quickly became obvious, not everyone could.

Marconi believed something about wireless and proved to the world that he was right, using that same continuous wave we know and love on the ham bands. It seems our ham bands will be the last bastion of that CW. So, dust off the straight key, or the bug, the keyer, or even your keyboard. Keep the tradition alive. The only way to see the art is to use it, to let it work its magic. **–K4ZA**

Last month's anagram: Here come dots? The Morse Code

Ever think about, or wonder, where some of our CW pro-signs came from?

AR, the end-of-message signal, comes from the American Morse letters FN, meaning 'finish'
SK, from the American Morse 30, meaning half-past the hour, the end of an operator's shift
ES, for 'and' is from an American Morse symbol for '&', used extensively earlier in written English
And when old-timers send a long dash for 'zero, they are actually sending the correct American Morse symbol. History casts a long shadow. Check out http://www.morsum.demon.co.uk/ for details

TIPS & SUGGESTIONS FOR THE ANTENNA FARMER

Building an antenna farm can run into big dollars pretty quickly. Hams, however, are nothing if not frugal. So, this month, in anticipation of spring, some money-saving ideas for those tire-kicking cheapskates among us. Let's take the tower first—as it's usually the biggest item in the budget.

Many of us buy our towers retail. But, if you pay attention—keeping your eyes and ears peeled—you can often find some "deals" in out-of-the-way places or situations. Broadcast towers needing removal, old pre-cable-TV antenna towers (keep your eyes peeled as you drive around; AE4PB recently acquired some Rohn 25 this way), or old business locations can be a source of tower. There are pros and cons concerning "used" tower sections. Many believe it's false economy. Regardless, you MUST either know what you're doing—meaning you know enough to make informed decisions on your own—or have someone who is, helping you inspect the tower. Be safe, above all else!

Once you have the tower, you might think "the worst part is over," but the required hardware can easily equal the cost of the tower itself. The guy wire, the insulators, the anchors, and so forth, can also be scrounged by an ever-diligent ham. Cable companies use EHS (extra high strength) guy cable, and what they consider a "short end" will be useful to hams, who want to use short, non-resonant lengths. Such cable can sometimes be had just for the asking. Most of this CATV guy cable will be ¼-inch, minimum. It's difficult using cable clamps (crosby clips), with this heavy guy cable. I recommend you buy new "guy grip" splices and ends. They work amazingly well (once you put on a "preformed guy grip," you'll never want to use a crosby clip again). In terms of safety, you should never use crosby clips in places where they cannot be inspected and tightened periodically—an impossible requirement for most tower installations. Nicopress sleeves—small cylinders of aluminum or copper—which slide over the guy cables to be joined and crimped in place with a large, bolt-cutter-like tool, deserve mention. Each sleeve can be crimped at three places along its length. Manufacturers claim each crimp point has the holding power of a cable clamp. Use two, and be safe. Large hardware stores, some marine supply outlets, and fastener stores can carry the sleeves. It's not a bad idea to ask if they will rent the crimping tool.

Anchors are often the most-ignored part of a tower installation, since they're underground, and out of sight. Most hams use concrete anchors for their towers. In many circumstances, they're the only possible choice. But if your soil is right (dense enough), you can use earth anchors, saving yourself considerable money. Please realize we are not talking about glorified tent anchors here, rather serious heavy-gauge or large-diameter, screw-in earth anchors. Power distribution companies (such as Graybar) often carry 72-inch anchors with a 10-inch disk. It takes some muscle to screw them in, but compared to the possible $100 expense for a cubic yard of concrete anchor (typical with most ham towers, at today's prices); they can save you money. Don't forget to factor in the time (and expense) spent digging a hole that size, versus screwing in an anchor.

A few words about concrete: It can quickly run into money. Hams, attempting to save, often take the SAK-CRETE approach—the premixed bag of sand/cement. After 20-30 bags in the typical base you've managed to dig for yourself, you'll realize you could have saved time and money by renting a portable mixer and buying the cement and sand separately—most of the time. If you have the time to do the base work yourself, I believe you'll save in the long run, especially if you plan to install more than one tower. A portable mixer could even be a good club investment, along with a gin pole, transit, and other often-used tower tools.

Most "serious" hams are aware of the advantages (technical as well as monetary) of using the often-free CATV hardline. We've covered it several times in previous issues—including how to make your own connectors. With loss figures good into the UHF range, high power handling capabilities, and its availability, it's a ham "no brainer" option. The only difficulty is its 75-ohm impedance, which isn't really a problem. Most ham antennas are, of course, 50 ohms. Most transmitters will accept the 75-ohm load just fine. If the hardline just happens to be an odd-multiple of a quarter wavelength, however, then the 50-ohm load impedance is transformed into a 100 ohms, which many modern rigs won't tolerate. You get the idea how impedance differences can cause problems.

TIPS & SUGGESTIONS FOR THE ANTENNA FARMER. *continued*

One solution is the "asynchronous transformer," made from short lengths of 50 and 75 ohm coax, and which will cover a single band. We've mentioned using these in previous issues, as well. (See figure 1) Tribander-users are often out of luck, unless they can use their 75-ohm cable as a tuned feedline. Meaning, choose a length of cable to equal about an electrical half wavelength on 10, 15, and 20M. Meaning that whatever impedance is present at the load end of the cable will appear at the source end. Then, 50-ohm cable jumpers can be run at the antenna and transmitter ends. This "magic length" will be determined by the velocity factor of the cable you use, but it should work out to be about a multiple of 56 feet. Another solution is the "unun," a transformer designed to match an "unbalanced-to-unbalanced" ratio. Simple to homebrew, broadband, they will handle the full legal limit.

	regular RG8/11 *(.66 vf)*	foam RG8/11 *(.79 vf)*
80M	176 inches	211 inches
40M	89	106
20M	45	54
15M	30	36
10M	22	27

(50-ohm pieces are same dimensions)

Figure 1.

Another high dollar expense will be the control cable to run up the tower to your rotator—especially if the run is long and you have to use heavier gauge wire. The retail price, around 40-cents/foot, mounts up quickly. There is a cheaper way. Most hams are using the HAM series of rotators from Telex/HyGain, with an 8-wire circuit: brake, motor LEFT, motor RIGHT, ground, two for indicator, and two for the motor's starting capacitor. Mounting the capacitor AT THE ROTATOR eliminates two wires, right away. (The cap's not hard to weatherproof, but I buy a commercial-grade cap from some place like Graingers.) For the long runs, I use 14-gauge Romex cable. Two runs cost less than the "heavy duty" rotator cable, and the conductor size is even larger. If you use three-wire-plus-ground Romex, you can use doorbell wire for the indicator circuit (where conductor size can be small) and save even more. (If you're running a prop pitch, Romex is the only way to go, too.)

What this article should tell you is that the typical home warehouse products, intended for general consumer use, are less expensive than the ham radio products we often buy. So, be creative. Walk around a Home Depot's electrical supply aisles sometime with your "thinking cap" on, surveying what's available. Make friends with the "yard boss" at your local CATV facility. Be willing to cart off their short ends of hardline and guy cable. Stockpile them for your own use later or share within your local ham club. (It's amazing to encounter VHF types who still haven't discovered the advantages of hardline. Visit your local radio club and share some of these stories. Then, enlist their help on your tower projects.)

The intent of this article is to jump start your thinking in problem-solving and money-saving ways. Again, hams are nothing if not frugal—often embarrassingly cheap, in fact. *(Just try selling something at a hamfest, sometime, to see for yourself.)* But, regardless of that, if you've saved money, or solved a perennial antenna and/or tower problem, share it with us via *The Pileup*.

--K4ZA

(K3ZO is a callsign we've all heard in pileups and contests over the years. I enjoyed the privilege of living in Fred's home the first year I moved to Maryland, then in the house next door for the following four years. I learned a lot just "hanging around," chasing DX with Fred, and working on stuff for him. Being there, it was a pleasure to see him inducted into CQ's Contest Hall of Fame. His post-contest analysis is always fascinating reading. Herewith, edited-to-fit our space, is Fred's take on this year's ARRL test.)

THE 1999 ARRL INTERNATIONAL CW DX CONTEST

In planning for this contest, I felt some basic changes had to be made in my routine. The main motivator for such changes is the return to this area of K0DQ, who's retired from the Navy, been showing up at PVRC meetings, looking to get back into contesting in a big way. When he used to operate from W3GRF's, Scott regularly took me to the cleaners. Now, after doing an exploratory effort from K1DQV's station in the CQWW CW, he's been checking out the mountaintop QTH of W4RX. While other locals KE3Q and K3MM have been trouncing me regularly when they do SOAB, they aren't frequent entrants in this category—so my basic complacency was not challenged. Now, it has been.

I can't use antenna problems as an excuse any more, either. KC1XX and his associate Andrew have analyzed all of my chronic problems and fixed them. They did an ice-storm-damage repair visit just a couple of weeks before this contest. W3MC installed a EWE antenna for receiving on 160 a few months ago, so now I can hear okay on that band.

The power company's RFI man, K3RFI, has been working on my line noise problems. He's reduced the noise by two or three S-units, but that still leaves me with an S9 noise level on 10 meters when beaming Asia. Beaming Europe, I can lower it to S7 or so by pointing the antenna to 75 degrees. The noise is somewhat less of a bother on 15, and not much of a factor on 20. On 40 and 80 I'm not bothered by line noise at all, and on 160 the EWE picks it up, but it's not a serious impediment to receiving on that band. The power company had hoped to work on the noise Thursday and Friday before the contest, but had to postpone the work for another week after Wednesday's rain because they were worried about their truck getting stuck. It's happened before! So, the new plan is to do the work this week instead. Meanwhile, a part of my plan had to be to work around my noise problems insofar as possible. This meant basically no Asian runs, and running Europe on the lowest band where high rates were possible at a given moment.

I'd also been able to see some combined-rate studies of several leading single op stations from the 1998 CQWW CW contest, and realized that in the late afternoon I was leaving 20 meters much too early to go searching for mults on 15 and 10. And W4AN had made some good points in his analysis of the CQWW CW, which created a little intellectual ferment in my mind.

So, with my new plan in mind, 40 meters (with the 3-el Telrex at 94 feet on Europe) was the only option to start the contest with. I should say here I don't like the typical starting scene of today's major contests—where people feel the need to fire up half an hour before the start to hold a run frequency. I've never played this game, in part because I need to save all the energy I can for the contest itself. Besides, half of the guys who do this will be S&Ping within 20 minutes of the start of the contest because their rate meters had trouble getting off of zero since they started the contest by running. When will the fans of the "when-it's-over-it's-over" version of contesting add "when-it-starts-it-starts" to their repertoire? I'll be in their corner if and when they do.

I arrived in the shack at 2330 GMT. I turned on the PacketCluster to check WWV numbers and quickly turned it off and shoved the dumb terminal out of the way for the duration. Then I went to WWV and set the computer's clock. Then I configured TR-LOG, first checking to make sure earlier contest files had been properly dealt with before removing them from the active directory. Then I checked my trusty MFJ Grandmaster to see it was programmed properly. That left me with about 10 minutes to analyze 40 meters before the contest started.

I immediately noticed that those W1s and W2s and even a few W3s who had already reserved their run frequencies were coming in about 90 dB over 9, and there was also some QRN on the band from distant thunderstorms. So I decided to begin the contest by S&Ping since the quantity of loud signals on the band would raise the noise floor to the point where about half of the Europeans calling me if I ran would be difficult to drag through the crud. At the beginning of a contest S&Ping works, since everybody is new. Indeed, at the 15-minute mark, I had 33 stations in the log, which is a respectable way to get off the mark. At some point around 25 minutes after the start, I noticed the W2s were now on backscatter and so I found a place to run and ended up with 123 stations logged in the first hour of the contest, which is a decent first-hour rate. Had I started off trying to run stations, my results wouldn't have been that good.

I'd been somewhat dismayed by the WWV numbers for the two days prior to the contest, so it was with some surprise that during the first two hours of the contest several UA9s called in with reasonable signals. I thought to myself that at least the polar paths were open despite the week's radio storm, so I began to think this might turn out to be a decent contest after all. By 0303, I had put 296 stations in the log and the rate had dropped off enough to where I thought my first look at 80 was called for. Since I don't do two radios, I hadn't looked at 80 until then and I wasn't pleased with what I heard. The QRN from distant thunderstorms was very high, and a large component of that noise was emanating from at or near the heading for Europe, making it impossible for the F/B ratio on my 3-el KLM to cut down on the noise level. The EWE and my European half-sloper weren't any better at noise reduction. So, I S&Ped the 40-odd stations I could read—which, happily, included JY9QJ. After making a 10-minute sweep of 20 meters beaming south, I was back on 40 at 0407, convinced that 40 would have to play even more than its usual prominent role in my first-night efforts this year.

At 0524, with 454 stations logged, I decided to take another look at 80. Things were no better than before. I tried running and was getting plenty of calls, but it took too long to drag them through so after logging four stations that way, I went back to S&P. After a quick QSY to 160 where I worked the only two stations I could hear, P40W and HC8N, I was back on 40 at 0611. My heart goes out to the 80/160 meter ops at the multi-stations. After enduring the conditions that first evening, they all deserve the ham radio equivalent of the Purple Heart.

ARRL CW DX Contest, *continued*

The rate on 40 wasn't that great either, since most Europeans were still in bed, so at 0636 I was back on 80. Things were quieter to the west, so I logged two KH6s. Then, 160 was good for five more QSOs with G0IVZ making it through. (Jan must have a good antenna.)

I was back on 40 at 0700 and the European sunrise opening was in full swing. This is my favorite time on 40 meters. Even an occasional QRP signal will hit S-9. The Scandinavians were loud, which is a good sign and even a few JAs were calling in amidst the Europeans. This year, rather than leave a hot 40 meter band for my programmed three hours of sleep at 0800, I'd run the European sunrise opening to its end before turning in. At 0827, I had 640 QSOs in the log, the last one being KH2/N2NL at 1017. I then swept 40 and 80 for mults before heading to 20 at 1104. I'd determined, by careful monitoring of the bands for three weeks before the contest, than even on good days 20 wasn't opening to Europe at my QTH until 1100, so it wouldn't do me any good to show up there before then.

Hour one on 20 was good for 144 QSOs and then it was time to look at 15. At 1207 I hit 15 and my first hour there was 162. Pointing the 8-el Telrex at 155 feet to a heading of 60 degrees brought the line noise down (which peaks at 15 degrees) to a tolerable S5 or so. At 1325, with 1009 QSOs, I decided to go to 10. My 4-el W6PU dual-driven quad on a 33 foot boom at 78 feet has always been a killer on that band on transmit, but it has a very broad front lobe and the line noise is worse on 10 meters, peaking at 20 dB over 9. Even bearing 75 degrees, the noise was still peaking S9. I felt a bit like an alligator on that band as I could hear a number of stations calling who it was useless to even try copying. I apologize to them all. Nevertheless, I managed to drag 120 stations through the noise that first hour so I felt I was holding my own on 10. But the minute the rate dropped off a bit I was back on 15 at 1545 with 1259 stations in the log. Fifteen hung in there for quite a while; at 1814 I QSYed to 20 with 1540 stations in the log. I stayed there until 2100, when with 1839 stations in the log; I left to go S&Ping for multipliers on 10 and 15.

A pause here to describe my S&P *modus operandi*. Even though I'm S&Ping expressly for multipliers, I call every new station I hear, multiplier or not. If I call twice with no results, I move on. If the station I didn't get is a mult, I'll note the frequency and try again after I make my first pass through the band, low-to-high. If I find a station who doesn't ID after I've heard him make 2 QSOs, I move on without calling him. Occasionally I'll vary this pattern depending on conditions, but this is the basic pattern I strive to follow. The idea is to keep moving---keep moving, always. Whether a mult is a KP4 or a JT1, they're each equal value in the contest. And in a contest, the serious contester is contesting, not DXing.

I thought I might break the 2000-QSO mark in the first 24 hours, a first-ever for me in the ARRL CW DX Contest from the USA, but I didn't quite make it. At 0001, I'd logged 1984 QSOs. At this point I think it's worth commenting on the differences between the ARRL and CQWW contests from the point of view of a North American operator. In the ARRL, we're the only game in town so the runs are more productive at the beginning than during the CQWW. Also, NA stations with lesser setups will have an easier time running stations during the ARRL than the CQWW. But there aren't as many DX stations participating in the ARRL as in the CQWW, so the well runs dry quicker. DX contest scores, however, have been increasing year by year; I've concluded we have the Europeans to thank for that. For whatever reason, the growth of ham radio in Europe has been greater than it has been over here in the last few years. I don't know why, but they're doing something right over there. Perhaps it's that the VHF bands are much more crowded with CW and SSB signals on an ordinary day over there than they are over here, and as a result European no-code operators receive a broader introduction to what HF is like than do our "shack-on-a-belt ops" here.

Anyhow, since 80 had accounted for so few QSOs the first night I was determined to give it a big push the second night. When I hit the band at 0001, I was pleasantly surprised to hear no QRN at all. The band was very quiet. Unfortunately with the MUF so high at this point in the sunspot cycle, the signal absorption was also high and so those few Europeans on the band were weaker than usual. Plus the skip zone was shorter than it's been in recent years, so all the W1s were LOUD. So, at 0030, I decided to take a nap. I was back on the bands at 0140, sweeping 20 for mults before going back to 80. At 0230 I found 80 in better shape signal-wise though still not ideal. I could run, but had trouble with some weaker callers; I think I was suffering with front-end overload, but I needed every bit of gain to copy the weaker signals.

At 0415 I decided to look at 160 and it's a good thing I did as events later would show that I hit the best opening to Europe right on the head. May I take time to single out the operators at RK3AWL for special mention here? Whoever was operating 160 was doing a great job of pulling calls through on a very propagationally-challenged path. You did a great job on all the bands!

After jumping between 80 and 160 I finally hit 40 at 0618 for the European sunrise opening and once again found conditions outstanding. I had the feeling I was hearing better on 40 than any other band at any other time. I stayed there until 0900 when I retired with 2405 QSOs in the log. Some anonymous soul even asked if it wasn't time for me to go to bed! At 1101 I was back. After picking up a few more mults on 80 and 40, I went directly to 15 at 1125. My band-by-band totals showed 20 in the lead at that point (except for 40), so I thought I would get right to 15 while it was still easy to find a run frequency. I wasn't disappointed as 124 QSOs went into the log the first hour, not bad for the second day. However, I went to 10 at 1244, determined to stay there as long as I could despite the noise since my totals were considerably below those on 20 and 15. And 10 meters was really wide open! RK9AWC was as loud as anybody who called me on 10 during the whole contest. But the line noise was still a big problem. I left the band at 1611 having added 326 QSOs to the log, but having missed many others who were down in the noise.

I ended up with 3337 QSOs, no better than 5th USA at this reading with more scores still remaining to be posted. But I believe I'm on the right strategy road as the highest totals reported so far are only 400,000 points ahead of me; last year I was almost 900,000 down from the leader.

--K3ZO

The Back Page

WEB WANDERINGS

http://www.dx-central.com
A new DX-oriented website with some interesting search capabilities.
http://home.sprynet.com/sprynet/wd4ngb/call.htm
Try this URL for all your call sign look up needs.
http://paradox2010.com/ham/cluster.htm
An interesting site of telnet cluster addresses.
http://www.bama.sbc.edu
Just in case any of you out there are looking for "boat anchor" schematics.

A few months ago, the DX Reflector ran hot and heavy with discussions on Packet and lists. As usual, I deleted most everything immediately. However, I thought WC1M's commentary was particularly well said. I've been saving it to use in some special *Pileup*. It seems especially appropriate here, with its historical perspective.

Sometimes I miss the "good old days," before PacketCluster, when to work DX you had to tune around and find it. That was particularly challenging here in rural western NH because there weren't enough local DXers to have an effective 2M-spotting network. I used to spend many happy hours in front of my radio, listening, listening, listening. It was hard work but fun, and the listening was great training for succeeding in pileups (contrary to popular belief, you work more countries by listening than by transmitting). There's nothing like the thrill of stumbling across a rare DX station just starting to call CQ. That happened to me many times, perhaps the most memorable of which was a BY station back when China was still #1 on the most-wanted list. That almost never happens today if you depend exclusively on the cluster for DX spots.

On the other hand, the pace of my life today is such that if tuning around were still necessary, I wouldn't be working any DX at all. Family and work obligations mean I don't have that much time to spend on ham radio. It's hard enough to get time to work the really rare stuff that I still need, spend an occasional weekend working a big contest, and build a project or two. I feel lucky that I was able to learn to tune and listen back when I had the time to do it. I'm also grateful to the PacketCluster for keeping me in the game and helping me to work dozens of rare DX stations. Yeah, it's a boost when they tell you where the DX is listening or where they just worked a station, but I still get a good mental workout determining just where and when to call and finding ways to succeed in spite of the worsening QRM problem... It's probably true that the advantage of the cluster is offset by the disadvantage of the increased competition and QRM.

The cluster and lists are compromises some of us have to live with... There's something to be said for the camaraderie of a group effort. Some people like to travel alone, others like company. Each person must define his or her own criteria for success... and should not judge the criteria others set for themselves.

--WC1M

HISTORY PROVIDES FUN, HILARITY, AND HUMBLING EXPERIENCES

In 1913, Lee de Forest, inventor of the audion tube, to whom we owe some small debt of gratitude, was brought to trial on charges of fraud. He'd used the mail to sell the public stock in his Radio Telephone Company. Considered a worthless enterprise, the District Attorney charged: *De Forest has said in many newspapers and over his signature that it would be possible to transmit human voices across the Atlantic before many years. Based on these absurd and deliberately misleading statements, the misguided public...has been persuaded to purchase stock in his company...*

De Forest was acquitted, but the judge advised him "to get a common garden variety of job and stick to it." Today, of course, no one remembers the judge or the District Attorney! (*History of Radio*. New York, American Historical Society, 1938, p. 110) Interestingly enough, W. W. Dean, President of the Dean Telephone Company, had already told Lee de Forest in 1907: *You could put in this room [his office], de Forest, all the radiotelephone apparatus the country will ever need!* (*Father of Radio, the Autobiography of Lee de Forest*. Chicago, Wilcox & Follett Co., 1950. p. 232)

1999 ARRL INTERNATIONAL CW DX CONTEST

	160	80	40	20	15	10	totals	score
K5ZD	44/29	218/54	732/70	815/77	1044/89	825/85	3669/404	4.446M
K1DG	29/22	207/56	746/83	810/85	840/92	797/89	3429/427	4.392
KQ2M	31/24	255/56	798/80	648/86	795/90	868/89	3395/425	4.326
W4AN	34/27	208/55	827/77	659/82	847/87	903/80	3478/408	4.257
N2NT	44/29	168/51	921/82	682/83	858/80	813/81	3486/406	4.243
K3ZO	33/24	245/63	837/79	801/82	761/81	660/70	3337/399	3.981
K0DQ	39/28	148/54	675/74	842/80	885/86	756/74	3345/396	3.972
K1ZZ	46/29	141/51	522/69	815/92	766/81	949/86	3239/408	3.964
N2LT	33/22	149/46	678/81	726/83	817/88	875/78	3278/398	3.912
W1WEF	27/21	171/53	736/79	731/84	898/82	673/71	3236/390	3.786
N2IC/0	31/22	141/52	688/66	515/84	927/86	750/81	3052/391	3.576
N4AF	19/13	196/56	619/69	751/83	837/81	681/75	3106/377	3.466
W9RE	31/20	119/48	603/68	499/79	932/85	679/77	2863/377	3.236
K1RM	34/24	86/49	260/73	765/80	741/91	752/88	3205/170	3.205
N6IG	12/10	101/34	827/77	405/70	948/88	567/75	2860/354	3.037

It's been a while since we've seen top scores this close. While the East Coast dominates, it's not only encouraging to see good scores from N2IC & W9RE, it's proof conditions have truly improved. Compare your numbers to these guys—some of the top ops!

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