September 1999

The Pileup

Newsletter of the CDXA W4DXA

Carolina DX Association

N4PQX	Bob Burton	President
W4WNT	Bill Turner	Vice-President
K4MQG	Gary Dixon	Sec.-Treasurer
K4ZA	Don Daso	Editor

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

PACKETCLUSTER NEWS

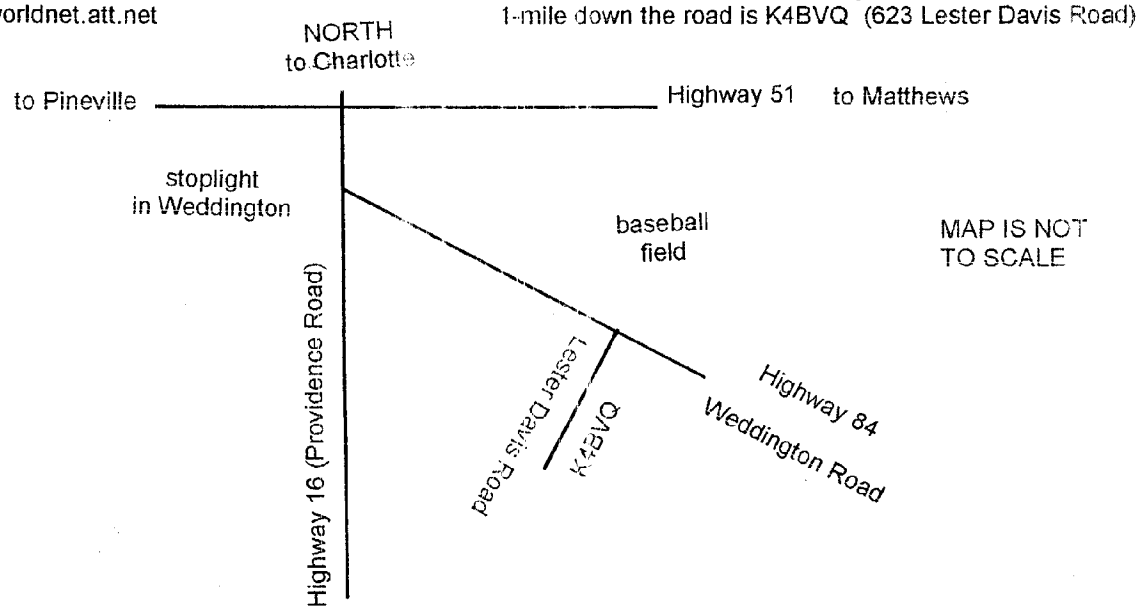
DXBP2 has moved frequency to 144.93 MHz
(Digi-peater near Galax, VA has shifted frequency; connect to DXBP2 & then W4DXA)

BVQ BBQ

The annual Carolina DX Association BBQ at K4BVQ's home is scheduled for Saturday, October 16, 1999. Festivities get under way at 5:00 PM (serving 5:30-6:00). Cost is $14.00, per person, payable on arrival or in advance (includes meal, drinks, table rentals, & clean-up)

RSVP to Bill Turner, W4WNT via:
PacketCluster (or)
4000 Horseshoe Bend
Matthews NC 28105
704-846-5499 (or)
ncyankee@worldnet.att.net

DIRECTIONS: Take Highway 16 (Providence Road) south 5.5 miles past the intersection of Highway 51, then at the stop light in Weddington, turn left on Weddington Road (Highway 84) & go 3.7 miles & turn right on Lester Davis Road 1-mile down the road is K4BVQ (623 Lester Davis Road)



EDITORIAL

This month, our theme (of course, you know each issue has a theme, don't you?) is "return with us now to those thrilling days of yesteryear." And if you're old enough, you'll have heard the familiar refrain of *The William Tell Overture* as I mentioned the idea, for obvious reasons.

So, as summer winds down, and the seasons and weather change, our thoughts turn inward, and to the past, and memories. What's past is prologue, as Uncle Will once told us, and we recall old friends, moments in time we wish to cherish forever. Hams are no different in this regard, although the moments may be as strange, though no less significant, as when Gus went to the Aldabra Islands. Again, if you're old enough, you'll have heard the pileups.

So that's our theme—the past, and doing your part to preserve it. All the while embracing and welcoming change. Think about it. Talk it over with someone younger, and some that are older, than you. Make it a part of your hamfest chatter, or the next ragchew you find yourself in (make The Old Sock proud). Talk it up at lunch.

For those needing a visual reference, look at this old picture.

It's Gus Browning, W4BPD, who was then thinking of going to where he's pointing, those same Aldabra Islands.

All this talk is important to our hobby—it's the history of it, and it's unknown to many, certainly under-appreciated by even more. For DXers, it's crucial to know and understand that "in the beginning," there were no "DXpeditions," rather simply a few hardy souls (often British nationals) who'd been sent to the "colonies" on some sort of assignment, who operated their ham rigs in some spare time, with wires, on CW. Lots of things were rare, or hard to work, even the Caribbean. For instance:

> *A US Coast Guard aircraft provided the unbeatable transportation for a group of KP4s on a DXpedtion to relatively rare Caicos Island last month—the operators, consisting of Roger, KP4AOO, Allan, KP4CGB, Red, WA6QPE/KP4, and Tom, KP4AVQ, joined Chuck, VP5CD, already stationed on the island, and used his call--*

That little tidbit appeared in *The DX Magazine* for June of 1961. Today, it's hard to imagine VP5 as rare, isn't it? Yet, it was. A lot of the Caribbean was, until the intrepid Danny Weil sailed his boat YASME from port to port, activating some of those rare islands. Did Danny really go ashore? It didn't seem to matter, when only a few hundred people worked him, mostly on CW. The first American to go anywhere significant was Arthur Godfrey, who went to Africa, trading his celebrity for operating privileges—even *LIFE* ran a story on his trip. Flash forward a few years, to that guy in the picture. Little old Gus, from Orangeburg, SC. Tireless, enthusiastic, able to roll with the ever-growing mob of SSBers or the CW hotshots, nourished by Coca-Cola and sponsored by W4ECI (Ack's World Radio Propagation Study Association, a front for his ham radio business). He was essentially on the road for five years, starting in 1962. In large measure, Gus created our modern day interest in DXng. No one ever wondered if Gus had ever been where he said he'd been. His anecdotes were the poetry of experience—you knew Gus had been there. And then came those terrible years of excess—the 70s. When the character of DXing changed forever. Of course, we are speaking of DX repeaters, DX Associations, DX Clubs, QSL bureaus and managers and lists and any means possible to obtain the coveted Honor Roll ranking and reach the top of the DXCC ladder. When Don Miller came on the scene and tried to make DXpeditions financially profitable. It was truly the decade of excess. It was a fantastic period. Indeed, it's a fantastic tale, worthy of Uncle Will.

Today, we have Martti, and Ron, and Jim, and seemingly countless organizations willing and able to sponsor large-scale trips. The character has changed, and continues to change, as we slowly indulge ourselves within the digital realm. What will be the first million dollar DXpedition? Perhaps a month in 15? Who knows what's next? Yet, let's not forget what happened not-so-long-ago. Return to some of those thrilling days of yesteryear. Try to remember. And talk it up.

--K4ZA

THE OLD AND THE NEW

My love for old radios goes back to my 1950 Novice days in Copperhill, Tennessee. My first station was a Command Set transmitter and a borrowed Hallicrafters Sky Buddy. Perhaps that's where my penchant for operating in the early morning hours comes from? In our television fringe area, you were certain to work all the neighborhood sets.

We considered the Heathkit DX-20 a major step forward. Add to that the AR-3 receiver and we were big-time Novices. One learned to pick out signals in the brain, the wide bandwidth being great for listening to a big swath of the band at once. In those days of crystal control, it was rare to work a contact on your transmit frequency. You called CQ, then tuned the novice band, listening for an answer.

Despite all the fun of home-brew and simple equipment, a quick spin through the bands brought forth amazing signals from radios with the name of Collins, Hallicrafters, Hammarlund, National, and others. Some Saturday's, we'd hitchhike to Chattanooga and hang out at the radio stores, carefully touching and studying such unobtainable rigs, which only rich OMs could afford.

Real life happened soon enough, and I was fortunate to spend my career in commercial radio and television. I soon developed an appreciation for high-end equipment, but amateur radio took a back seat. My interest was rekindled in Vietnam, watching the MARS troops run phone patches with Collins KWM-2s and S-lines. I later returned to that area as a television correspondent, and renewed my love affair with ham radio, operating a Swan 350 from Cambodia for the International Red Cross. I was based in Saigon, and on walks from my flat to the CBS bureau, I would eye the piles of Collins equipment still in boxes in the thief's market. I still have nightmares about all the goodies I left behind.

After the war, I was relicensed in New York City and got back on the air with a Drake C-line. I found I liked tube-type stuff, and I've always had at least one B- or C-line in my shack. Soon after moving to Rock Hill for a career change that brought me to Winthrop University, I received a call from an old friend in New Jersey who told me he was retiring to Arizona and remembered my interest in his Collins S-line. "Did I want it?" he asked? "I'll WALK to New Jersey to pick it up if I have to!" I replied.

That S-line is still my mainstay, and I've told wife Carol they'll have to pry the tuning knob from my cold, dead hands! Along the way I've picked up a 32V-3 AM transmitter, various Collins-designed R-388s and R-390As, plus a full KWM-2 station. The 30L-1 amplifiers are also real war-horses, and I currently have three in-line with various stations.

What's really fun is that contacts constantly ask what I'm running, and many newer hams are amazed at the sound from a 30-year-old design. I've run the S-line in contests and chased a bunch of DX. But the KWM-2 works best as a rag-chew transceiver. My interest in AM has waned and the 32V-3 will soon move to a new home, as will many of my old Heath and homebrew transmitters. However, the receivers will stay. There's nothing like the full fidelity and stability of those receivers hooked up to a big speaker! That's the way to listen to the Panther games (now that they're too painful to watch).

The other attraction to older radios is that you can work on them yourself, with a good chance of fixing them in a couple of hours. Don't believe those tales you hear that tubes are impossible to find. All it takes is a little patience and a list of your needs when you go to a hamfest. What you can't find there is only a phone call away. There's great support from the on-air nets (the Collins net meets three times a week), plus various Internet lists (Boatanchors, Collins, Drake, Swan, etc.).

None of this means I don't like modern, state-of-the-art radios. Most of my CW work is with my trusty Ten-Tech Omni, and I'm seriously eyeing the FT-1000D, 1000MP or the Omni VI. I like the DSP and the tailored audio, not to mention the quick and easy QSY. But late on a winter's night on 75, there's nothing like the sound rolling out of the 75S-3C, the clank of the relays, and the built-in footwarmer under the desk.

So, the next time you see that radio you dreamed of as a kid, the one you watched your father or neighbor running way back when, simply give it some thought. You might like the smell of solder and the soft glow of those tubes in the middle of the night.

--Haney Howell, K2XN

CONTEST PLAQUES TO BE AWARDED BY CDXA

The Carolina DX Association announces plaques and certificates, to be awarded in various categories of the CQ WW DX & ARRL 10-Meter Contests, as follows:

The Best on Phone

1999 CQ WW SSB Contest (October 30-31, 1999)

Plaques will be awarded to the members with the highest scores in the following categories:

1st place low power (150 watts or less)

1st place high power (1500 watts or less)

Certificates will be also awarded to 2nd and 3rd place finishers in each category

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U-Dah Man!

1999 CQ WW CW Contest (November 27-28, 1999)

A plaque will be awarded to the member with the highest score in the CW competition

This award sponsored by the Carolinas CW Ops

CQ World Wide Champion

A trophy will be awarded to the CDXA member with the best combined score from the SSB and CW contests--from the Single Operator, non-assisted categories.

Single Op with Byte!

Plaques will be awarded to the best Single Operator–Assisted scores from the SSB and CW competitions.

The Last Gunfight of the 20th-century

ARRL 10 Meter Contest (December 11-12, 1999)

Plaques will be awarded to those Carolina DX Association members with the best score in each of the following categories:

1st place PHONE

1st place MIXED (phone & CW)

All contest rules & regulations established by the CQWW contest committee & ARRL are to be adhered to by all CDXA participants.

By announcing these awards, the club hopes to foster a healthy respect for contesting within the group, increase our club competition activity, and generate some real enthusiasm among all of our CDXA members. You must be a CDXA member to participate in this club competition. You must submit your score as a CDXA entry in club-competition to be eligible. (In other words, you cannot simply be a CDXA member, operate the contest, send in your score for the Rootie Kazootie Contest Club, and win a CDXA prize.) Any members who go on DXpeditions, and submit their scores as CDXA club competition entries, are eligible.

W4VHF will collate and report the scores, so make certain you submit your log to Ted for checking. Deadlines for log submission will be 30 days AFTER each contest. (The 10M-Contest logs must be submitted ONE WEEK after the contest, in order to guarantee checking in time.)

Award presentations will take place at the annual CDXA Christmas Dinner, later in December.

Please take some time to review the categories, talk up the program, and plan now to participate in this intra-club competition!

A FEW WORDS ABOUT ANTENNAS

complex stuff without charts, graphs or (many) numbers

This article will present feedpoint impedance, radiation resistance (and dissipation resistance), and reactance in what I hope is a "readable" fashion. In other words, you'll finally know what's going on with all this talk about Z, R and X of your antenna.

We'll use the good old dipole for our example. Center fed, electrically one half-wavelength, and high enough in the air to be unaffected by the ground below—that's our model. All the handbooks say this antenna will have a feedpoint impedance around 70-75 ohms, and this impedance will be purely resistive. In our real world, however, such a situation rarely exists. An ideal dipole will show a feedpoint resistance Z(f), made up of the resistance of the antenna itself, insulation losses, dielectric losses, and absorption losses. These are easy to comprehend—you know wire has resistance, even though it's copper. You know no insulator is perfect. You know there's probably something in the near field introducing dielectric losses, as well as something in the near field absorbing radio waves.

Radiation resistance is trickier. First, it's not a true resistance. Real resistance, when rf flows through it, heats up. The term came about because there was a need to describe what happens to rf, when it flows into an antenna. Most of it, we hope, gets radiated.

We all know antennas have a "resonant" frequency. As we move away from this frequency, the antenna moves away from resonance. As it moves, it loses its purely resistive condition, too. As the frequency moves higher, a bit of inductive reactance is introduced. As the frequency moves lower, a bit of capacitive reactance is introduced. Just how much the antenna "moves off" resonance depends on several things. For our simple dipole, the primary factor is the diameter-to-length ratio. The larger the diameter of our radiator for a given length, the less reactance will be introduced. (Now you know why cage dipoles were once popular. And maybe should be once again.)

Obviously, reactance is a tricky topic. Hence, what look like some tricky equations are needed:

$$Z(f) = \sqrt{R(2) + X(2)}$$

This formula gives us the feedpoint impedance when reactance is present. R still equates to all the resistance in your antenna, and the X is inductive or capacitive. You should remember that reactance cannot absorb power. Here's the rule: You cannot make a purely reactive load accept power. Reactive with some resistance, yes, but purely reactive, no. Obviously, this simple rule cannot solve everything antenna situation you'll encounter—reactance is a real-world phenomenon, playing a vital role in antenna designs. If our dipole is reactive to some degree, don't worry. Remember you can cancel out the reactance by introducing an equal and opposite reactance. So, if our antenna shows 10 ohms capacitive reactance, we can negate it by introducing 10 ohms of inductive reactance.

Remember that the resistive component of the antenna will not be affected by these attempts to cancel out the reactance. The antenna will accept rf power.

And that the resistive component of the antenna can be changed by a variety of means.

Obviously, this is a grossly over-simplified introduction to this topic—written by the editor to fill this page at the 11th hour of production. But the feedpoint impedance of your antenna (simple dipole or otherwise), *is* complex, made up of both resistive and reactive components. The resistive component is made up of several kinds of resistance, one of which is arbitrary, designed to account for radiation from the antenna. The other resistances are dissipative, and should be held to as low a value as possible. Radiation resistance should be high, compared to these other values. Reactance is present is most designs, but should not be considered a deficiency.

Antenna topic next month in The Pileup: LOOKING AT LOOPS FOR LOW BAND USE

--K4ZA

Some 2 meter records, & remembering past Septembers, *edited from Internet correspondence & VHF reflector*

A few days ago I posted the highest QSO and Grid totals worked on 6 and 2 meters in the September contest, considering only scores in the grid square era, which began in 1983. Ted Goldthorpe, W4VHF, responded by pointing out W4BFB's multi-op group made 1017 QSOs on 2 meters (probably an all time record) in the 1979 contest. Ted, modest fellow that he is, didn't send this to the reflector, but I think it's worth the attention of all VHF contest ops.

So, I compiled high QSO and Section totals in the September contest, from 1971 through 1982. (I did not go back earlier, assuming higher totals wouldn't be found.) That 1979 QSO total of 1017 really stands out and is clearly higher than any since 1983. Totals in the 500s and 600s are pretty respectable as well. These totals were achieved as 2 meter multi-mode rigs became popular in the late 1970s.

Obviously, those mountaintop locations in the Southeast are pretty good places to be in the fall, and W4BFB, along with some other mountaintop groups, did very well during that era. This exercise caused me to reminisce a bit about THE BIG ONE--that big Tropo opening during the 1979 September contest. The tables show their dominance in sections and QSOs worked. I was at W9IP (on a tower in Eastern Illinois), and I can remember W4BFB pinning our meters on 2 and 220 the entire contest. Until they quit EARLY at 4 p.m. on Sunday evening, that is! We worked 38 sections, and W4BFB worked 39, the two highest totals ever amassed. Those of you who don't remember using ARRL sections may yawn, but section totals in the high 30s were quite remarkable. There are 35 sections east of the Mississippi, so one must work the whole eastern half of the country. It takes a big opening on 2 meters.

One of these years another big tropo will choose the same weekend as the contest, and somebody will again make over 1000 QSOs and probably exceed 120 grids. But for now, it looks like W4BFB has the high QSO total, by a good margin.

--K9AKS

2 Meter QSO & Section Totals — September VHF QSO Party 1971-82

CALL	CLASS	SEC	YEAR	QSOs	SECTIONS
W4BFB	M	NC	1979	1017	39
W2SZ/1	M	WMA	1979	667	30
W2SZ/1	M	WMA	1980	621	28
W4BFB	M	TN	1981	599	22
W2SZ/1	M	WMA	1982	567	27
W4BFB	M	NC	1978	556	
W1FC	M	NH	1978	532	
W9IP	M	IL	1979	515	38
N6NB/1	S	VT	1979	502	31
35 or more Sections					
W4BFB	M	NC	1979	1017	39
W9IP	M	IL	1979	515	38
K9HMB	M	IL	1982	469	37
K2OWR	M	NNJ	1979		37
W4ATC	M	VA	1979		36
WA4WZQ	M	NC	1979		36

A member recently inquired why he couldn't get answers to calls on the 7.18 machine. I was surprised by his claim that his "tail-ending" didn't work. I hope none of us are ignoring potential new members—callsigns we may not recognize. I want our club to grow and prosper. He said he had unanswered PacketCluster queries, too. I think we might generate some new interest by starting up our 2M net once again. We may be surprised by the response, from possible new members. It might also be a good way to get more non-Charlotte-members involved. What say OMs, shall we try a Wednesday night net once again—say 9:30 local? Any NCS volunteers? We've had no response to our earlier idea of "regional" CDXA chapters, either. What say, gang? Anyone willing to gather info and forward it to ye olde editor? How about some help? **--K4ZA**

A FEW WORDS ABOUT HARD HATS

The hard hat is one of the most important pieces of equipment worn in the industrial workplace. Many workers have been saved from serious injury or even death, because they were wearing a hard hat. Hams, often notoriously cheap, usually neglect this simple protection device. Here's how they work, and why you should wear one.

A conventional hard hat consists of two components, the shell and the suspension, which work together as a system. Thermoplastics (polyethylene, polycarbonate) and thermoset materials (fiberglass and phenolic-impregnated textiles) are commonly used as shells of industrial hard hats. These materials have proven to be durable, reliable and lightweight, while providing effective protection. The shell should be inspected routinely for dents, cracks, nicks, gouges or damage from impact, penetration, abrasions, rough treatment and wear that might reduce the degree of protection originally provided. Any hard hat showing signs of worn or damaged parts should be removed from service and replaced.

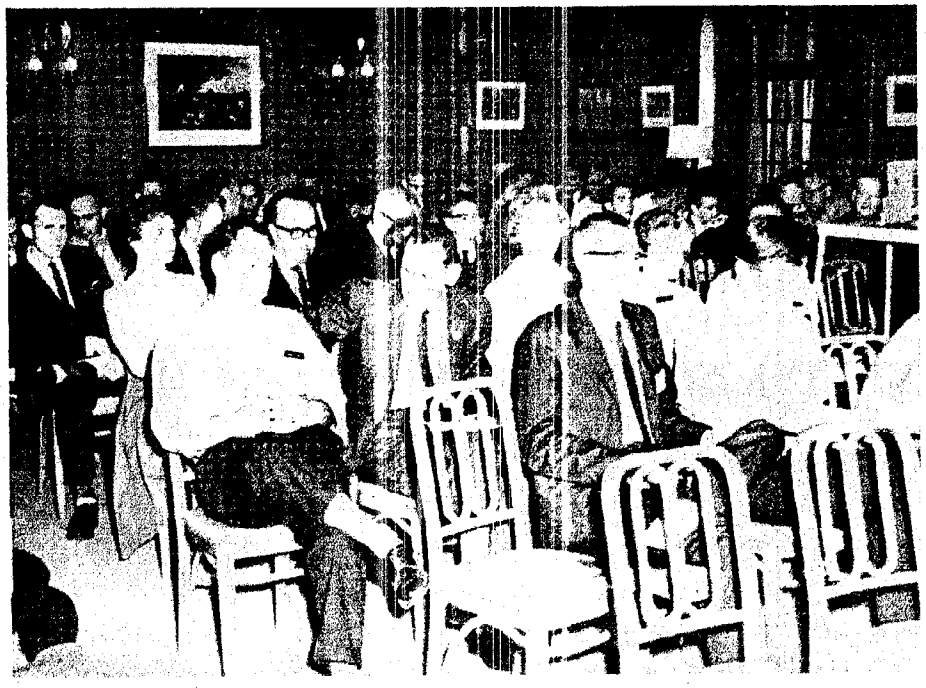
All hard hats are susceptible to ultraviolet light damage, temperature extremes, and chemical degradation. Thus, users who work in excessive exposure to sunlight, heat, cold or chemicals, should replace their hard hats more frequently. Degradation of thermoplastic material may be apparent when the shell becomes stiff, brittle, faded, and dull in color or exhibits a chalky appearance. A hard hat should be replaced immediately at the first sign of any of these conditions. A simple field test can be performed to determine possible degradation of polyethylene shells: Compress the shell inward from the sides about an inch with both hands, then release the pressure without dropping the shell. The shell should quickly return to its original shape, exhibiting elasticity. Compare the elasticity of the sample with that of a new shell. If the sample does not exhibit elasticity similar to that of a new shell or if it cracks due to brittleness, it should be replaced immediately.

The hard hat suspension system is just as important as the shell. Its main purpose is to help absorb the shock of a blow. Therefore, it must be in good condition at all times. Like the shell, the suspension must also be inspected and replaced periodically. Over time, the suspension will become worn and may be damaged. Suspensions should be inspected for cracks, frayed or cut crown straps, torn headband or size-adjustment slots, loss of pliability or other signs of wear. Perspiration and hair oil help contribute to this wear. Any suspension that's damaged must be removed from service and replaced immediately.

It's impossible to predict a specific time frame for hard hat replacement. Some large corporations replace their hard hats every five years, regardless of a hat's outward appearance. Where user environments are known to include higher exposure to temperature extremes, sunlight or chemicals, hard hats should be replaced automatically after two years of use.

Hard hats offer cheap and simple protection. I never do tower work without one.

--K4ZA



While perusing some old *DX Magazines*, this photo caught my eye, a moment at the 1962 Roanoke Division Convention. Note a young K4RID in the front row on the right. We know him today as W4ZV.

BOOK REVIEW

Often, one of the perks, if you will, of being an editor (even editing something as simple as *The Pileup*) is finding out about new and neat stuff. Say, books, or shows, or other source material which might impact your product. Sometimes, these provide editors with a story, sometimes they don't. Sometimes, they provide much more, and that's case here--with a review of Susan Douglas's new book, *Listening In, Radio and the American Imagination*.

I've said before it's hard not to be romantic about radio. I've described some of the cultural changes this technological medium spawned. Douglas's book is an in-depth history of such change, as well as a look at how our culture was affected. Because radio, whether you knew (or were aware of it) did indeed change our views on such things as race, gender roles, family, politics and leadership, and the generation gap.

Ham editors are touting the fact that chapter 12 is titled: "Why Ham Radio Matters." And that she argues strongly (as an outsider, no less) for growth, recognition, and continuing success for our hobby. Pretty heady stuff, indeed, from a working academic with a solid publishing reputation. But the book is not only a delight for us as hobbyists, but a treat for those who enjoy their history served up with a credible dash of technology, a bit of philosophy, and more-than-a-hint of commercial analysis--how we listen, where we listen, and who we listen to and why.

--K4ZA