



SOUTHEASTERN DX CLUB

W4NT

HEADQUARTERED IN ATLANTA, GEORGIA

MAY
1986

DX ALERT FREQUENCIES:
147.500 SIMPLEX
147.195/R K4SMX REPEATER
147.795/T
RAGCHEW FREQUENCIES:
147.470; 147.520; 147.540

NEXT MEETING: MAY 20, 1986 AT THE SQUIRE INN OFF ROSWELL RD. JUST INSIDE
TIME: 1930 (7:30pm) I-285 ON COPELAND RD.

PRESIDENT: BILL BARR, N4NX 993-3631

TREASURER: CAROL SHRADER, W14K 973-1450

VICE-PRESIDENT: ALLEN BOND, WB4GNT 973-6251

EDITOR: JIM STREIBLE, K4DLI 993-1767

SECRETARY: GROVER MEINERT, KC4BX 255-4677

CONTEST DIRECTOR: HUGH VALENTINE, N4RJ 979-3400

.....

PROGRAM THIS MONTH WILL BE A VIDEO TAPE "KCDX VICE". IT'S SONNY AND TUBBS
OUT TO STOP FOUR OF AMATEUR RADIO'S BIGGEST DX HOGS! ONE OF FOUR SPOOF'S
OF DXing FOUND IN THE NEW VIDEO "DXing KANSAS CITY STYLE". BE THERE.

.....

MAY MEETING:

The May meeting will be held on Tuesday, May 20th, at the Squire Inn which is located at I-285 & Roswell Road. The meeting will start at 7:30 pm but dinner will be served beginning at 6:00 pm for those who would like to come early and eat with the group. All who attended the April meeting would heartily recommend the reasonably priced menu and our very own salad bar.

This meeting will be our annual fund raising Auction to help offset the cost of our Dayton Hamvention Hospitality Suite. Last year's auction was a great success and a WHOLE LOT OF FUN so don't miss it!!! Be sure to bring at least one item (Ham Radio or otherwise) to donate to the club. All quality junkie is welcome.

In addition to the Auction we will have the first Atlanta screening of the new Kansas City DX Club video, *KCDX Vice*, which was premiered at the Dayton Hamfestival.

.....

TWO METER GEAR FOR TURKEY

Have you replaced your old crystal control two meter radio with the newer models? Don't let that old rig lay around and collect dust. How about donating it so that the newly authorized hams in Turkey can have local communications on the VHF bands. TA2C, a recent Atlanta visitor, advises that not only are frequencies available but they have a ready supply of REAL HIGH mountains for use as repeater sites. The one thing lacking is rigs which are very hard to obtain in Turkey. If you have a rig to donate contact Carol Shrader, W14K, at 404-973-1450 or on 147.50 mhz.

SOUTHEASTERN DX CLUB
DEPARTMENT OF ENGINEERING
Mother Nature, DX2U, Chief Engineer

<<<<<<< WHAT'S WATTS WORTH ?????????? >>>>>>>

Consider a fixed signal path through a constant ionosphere and let the transmitter power be P watts output. Let the path loss + antenna system (transmitting + receiving) loss be L db and let the input impedance (resistance) of the distant receiver (RX) be R ohms. In the following math, A^B means A raised to the power B and log denotes the common logarithm, base 10

At the receiver, Current I flows through R producing voltage V. George Ohm says that $V=IR$ and also that $P=I^2R = V^2/R$ watts is delivered to the receiver.

Now suppose an "original" signal is received at $V=V_0$ volts, then $I=I_0 = V_0/R$ and $P=P_0 = [V_0^2]/R$ watts. Let a new signal produce voltage $V=V_N$ in the receiver rendering current $I=I_N = V_N/R$ amps and power $P=P_N = [V_N^2]/R$ watts. The decible change in signal strength is now given by $D=10\log P_N/P_0 = 10\log V_N^2/R \div V_0^2/R = 10\log V_N^2/V_0^2 = 10\log [V_N/V_0]^2 = 20\log V_N/V_0 \dots$ db.

The most common and standard definition of a 1 S-unit change in signal is when the voltage input to the RX is doubled (or Halved): That is, $V_N = 2V_0$. It follows at once that $D = 20\log 2V_0/V_0 = 20\log 2 = 20 \times 0.3 = 6$ db. That is, a 1 S-unit change amounts to a 6db change in POWER! THIS EQUATES TO A 4 - TIMES ACTUAL POWER CHANGE FOR EVERY 1 - S-UNIT !!!!

Now, Consider the very real condition where *MOTHER* plays havoc with the signal and causes a S9+10db signal to fade quickly to S5. You ask the question as to how much power was "WIPE OUT".... Well, for this case, and all others, a 10db drop equates to a signal power reduction to (1/10). The signal is now 10% of what it was but is still reading S9! Drop S9 down to S5 and you get 4 S-units, each as a factor of 4. So the total reduction of $4 * 4 * 4 * 4 = 4^4 = 256$. So, all together the signal power level has dropped by a factor of $10 * 256 = 2560$! Everyone knows how fast such fades can occur, and this is only a modest fade !!! All together then the signal has dropped from S9+10db to S5 so S5 = 1/2560 of S9+10db. [*MOTHER* can eat your lunch with effortless ease ! All of you know and have experienced the *BIGGG FADE*: S9+ to S1 in a matter of seconds. This is at least 48db or a factor of $4^8 = 65536$!!] Suppose you now decide to "*FIGHT*" my Laws of Physics by "*METHODUS EL BRUTUS FORTUS (MBF)*", and counteract the effects of the fade by putting out POWER !!! So now the fade has you turning the "*BIG KNOB*"! Suppose your barefoot rig at 100 wts. was giving the S9+10db signal. To offset this fade and keep the signal level at S9+10db, when the S5-level fade occurs you will have to have your transmitter output power setting at $100 * 2560 = 256Kw$!!!! [*Angelo Ditty WANTS TO TALK TO YOU!!!!*]. Clearly, messing with *MOTHER* is pure folly! But I gotta run POWER...FEELS GOOD! (*MOTHER CHUCKLES!*)

Let's take another view: Suppose your transmitter is 50% efficient, that is, output power = 1/2 input power. This is quite typical of most rigs today, solid or hollow state! Suppose further that you have an antenna system that is 80% efficient (wire antennas are the only ones that have the chance to make it !!) and say the transmitter input is 250 watts when the signal at the distant receiver is at level S9. Now keeping *everything* constant except power input level, you can find what is so!!!!
(next page please)

FROM THE FOLLOWING TABLE[KW=1000 WATTS AND mW = 1/1000 WATT].....

RX SIGNAL (S-units)	TX INPUT (WATTS)	TX OUTPUT (WATTS)	RADIATED POWER (WATTS)	TOTAL HEAT/LOSS (WATTS)	SIGNAL POWER (FACTOR)	DB CHANGE (db)
S9	250	125	100	150	(REF=1)	0
S10(S9+6db)	1000	500	400	600	4	+6
S11(S9+12db)	4000	2000	1600	2400	16	+12
S12(S9+18db)	16KW	8KW	6400	9600	64	+18
S13(S9+24db)	64KW	32KW	25.6KW	38.4KW	256	+24
S14(S9+30db)	256KW	128KW	102.4KW	153.6KW	1,024	+30
S15(S9+36db)	1,024KW	512KW	409.6KW	614.4KW	4,096	+36
S16(S9+42db)	4,096KW	2,048KW	1,638.4KW	2,459.6KW	16,384	+42
S8	62.5	31.3	25	37.5	1/4	-6
S7	15.6	7.8	6.3	9.4	1/16	-12
S6	3.9	2.0	1.6	2.3	1/64	-18
S5	977mW	488mW	391mW	586mW	1/256	-24
S4	244mW	122mW	98mW	146mW	1/1024	-30
S3	61mW	31mW	24mW	37mW	1/4096	-36
S2	15mW	8mW	6mW	9mW	1/16384	-42
S1	4mW	2mW	2mW	2mW	1/65536	-48

There you have it folks! What's power worth? **BIGGG POWER.....VERY LITTLE. LITTLE POWER... WHOLE LOT!** Of course, "THEORY" is always wrong, don't apply to me! (For those interested, there is absolutely NO ASSUMPTIONS OR RESTRICTIONS on the entries in this table.... it ALWAYS holds true!) So, next time you use power to explain why you got thru that pile up ... *be careful what you say!!* "BELIEF" is such a wonderful thing.... Now, another "OUT" to observe that this station is really "ROTTEN"; It's overall efficiency is $(0.5)*(0.8)=(0.4)$ or 40%; Thus for every 10 watts input, only 4 watts get radiated. The remaining 6 watts go up in smoke (heat)!! BUT, your station is better than this one..... ??????????????????????????????????

ONE MORE TIME: FULL POWER AHEAD!!! Always gotta have MAX outta that rig!! **MAKES Bigggggg Difference.....!????!===>>>** A CLOSER LOOK **DOSEN'T MATTER WHETHER YOUR RIG IS FULL BORE OR QRP/QRP- WHAT'S SO ABOUT WATTS:**

%TX OUTPUT	db CHANGE	S-unit CHANGE
100%	0.0	0.0 (REF.)
90%	-0.5	-0.1
80%	-1.0	-0.2
75%	-1.2	-0.2
70%	-1.5	-0.3
60%	-2.2	-0.4
50%	-3.0	-0.5
40%	-4.0	-0.7
30%	-5.2	-0.9
25%	-6.0	-1.0
20%	-7.0	-1.2
10%	-10.0	-1.7
1%	-20.0	-3.3

(next page please)

THE TRADER:

The following club members have these items for sale of trade. If you have something to list, send it to the editor to be included in the next issue.

WANTED: Used KLM-34XA or Hy-Gain TH-7DXX. Call Gil, N4DUG at 205-533-5605.

72 ft. or higher self-supporting tower. Call KN4KWD, Malcolm Ringel at 231-0004 (work) or 255-1776 (home) with details.

FOR SALE:

Dentron DTR-2000 Amp. with 8877 tube. Call K4DLI , 955-1775 Days and 993-1767 Nights.

Swan 700CX / 117XC Power Supply, Swan VOX-VX2, Astatic Mike ,(D-104),and TRAC-CMOS Keyer. Includes Manual for 700CX. \$325.00. Contact Bob Tuttle, W4OMQ, 404-921-7473.

Dentron DTR-2000 Amp. Call Jack Lenox, AA4LU, 404-924-2210.

W4NOM became a silent key recently and his wife has the following gear for sale. Yaesu FT-101 with desk and hand mike and electronic key--\$350.00; Clipperton L Amplifier--\$300.00; 30 ft. tower & 4 el beam with rotor--\$250.00; Micronta SWR meter, preamp,W4M2000A watt meter, dummy load, & wire ants.--\$100.00; Will sell all as complete station for \$1000.00. Contact Mrs. Ouida Rogers at 289-6605.

Drake Keyer model CW-75. New in box and never used. \$22.50. Call WB4GNT, Allen Bond at 973-6251.

AVAILABLE: 75 ohm 1/2 in. Hardline with vinyl jacket, solid aluminum phone Pioneer ARC. Call Pete, K4LDR, 529-5135 Daytime.

HW-8 with all Geo. Weiss modifications (speaker, RIT,CW filters,newdiodes, ect.) . Has WAC & WAS QRPP awards! Will trade for Drake MN-2000 or similar. Call Bud Roberts at 704-837-6844

FT-980 excellent condition with mike, speaker, & all options- \$1200.00 : TL-922 (NEW) no 10 meters yet-\$900.00 : MB-VA (NEW) with AC supply-\$400.00 : Kenwood 7950 with Ant. excellent cond.-\$275.00 : TH7DXS , Dipole, 70' Rohn tower with stainless steel bolts, thrust bearing, 100' Beld. 9913, TX² rotor - \$700.00 take down excel. cond.: Total of all above \$3475.00 -Will sell everything as lot for \$3000.00. Also, includes free desk, dummy load numerous books and accessories . MUST SELL : also, have DMP-120 Printer for TRS-Color Comp.with TW-64 Cable & Manual- \$250.00 : Call Tom, WD4MLW at 205-744-7849 after 5:00 pm central time.

Kenwood TS-830 & VFO 240; Perfect - Like new. All boxes & manuals. \$750.00: Plantronics Starset noise canceling mike & headset. \$40.00. Call Joel, WA4HNL, at 394-5466.

PRESIDENT'S CORNER:

HAM RADIO EXAMS:

EAST: Exams will be given at 8:30 AM on the 2nd Saturday of the month at the First United Methodist Church of Stone Mountain. 5312 West Mountain St.

SOUTH: At 8:00 AM on the first Saturday of each month (excluding holidays) exams will be given at the City Hall Municipal Bldg. in Peachtree City.

DOWNTOWN: AFTERNOON exams are given in Room # 321 of the Student Activities Bldg. on the Georgia Tech. Campus on the 4th Sunday of the month at 2:30 PM. Talk-in is available on the GT Repeater - 145.15.

(next page)

Well-- you know the old saying about the best laid plans of mice and men. They have gone astray this month. I had planned to have this last page full of photos that Carol took at Dayton. However, when they were all cut and laid out and I started to copy them it was soon evident that, while any one of them could be made to look fair if copied by it's self when trying to copy them all with one setting it would not work. Therefore, I am only going to put a few here that look as if they will come out well together.

From now on no more pictures unless it is a single photo associated with an article that can have the tone set for that one picture. Also, flash photos with black or very dark backgrounds are out.



AND A GOOD TIME WAS HAD BY ALL!!!



WA2MOE, G3GIQ, F6EXV



NK4U, K1MM, KP4EQF, KP4AM

