SECOND CLASS MAIL Postmaster, see page 3

CENTRAL OKLAHOMA RADIO AMATEURS
COLLECTOR AND EMITTER
50¢

VOL. 11 JANUARY 1986 NO. 132

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EDMOND AMATEUR RADIO CLUB'S TENTH ANNIVERSARY

The end of 1985 and beginning of 1986 mark the tenth anniversary of the Edmond Amateur Radio Club.

The first documented meeting was on December 4, 1975. Incorporation as a non-profit club in the state of Oklahoma began on January 20, 1976. So, it seems we have two real birthdays.

Incorporators and first Board of Directors of the club were: Dennis Orcutt, WB5ISN; Larry Dillard, WB5CWB; Bart Wortham, WA5JUU (Now N5BW); and Larry Marks, WB5DUC. The articles of incorporation were filed by club member Micheal Salem, WA5EPK (now N5MS).

Our records indicate the following amateurs as charter members of EARC:

WB5ADN	Deeds Bigelow
WB5CWB	Larry Dillard
WB5DUC	Larry Marks
WA5EAI	Ron Cron
WA5EPK	Micheal Salem (N5MS)
WA5FLT	Joe Garland
WB5GWB	Jeff Casey
WB5HST	Ron Bragg
WB5ISN	Dennis Orcutt
WB5ISO	Wendell Cochran
WA5JUU	Bart Wortham
WB5KDC	Royden Freeland
WB5MLN	Hobe Burgan
K5OHU	Jim Caldwell
W5OYW	Ed Murar
WB5POW	Larry Stewart
W5UVI	Howard Thompson (N4IDG)

The official roster of the club, published by April 1976, added the following members:

K5CZU	John Haynie
WB5ECJ	Ken Kendrick
W5GC	Gene Taylor
WA5HDG	Maurice Woods
WB5IBC	Bill Haynie
WA5TRS	Joe Buswell (K5JB)

Edmond Amateur Radio Club, Incorporated, is now comprised of 58 members. Membership in the club is limited and by invitation.

The first repeater officially endorsed by EARC was located on the grain elevator in Edmond. Prior to that time, the repeater had been located at Dennis' house, and had undergone two frequency changes. Originally at 146.01/.61, then at 146.37/.97, the frequency finally became our present 147.63/.03 in 1976.

The club joined Central Oklahoma Radio Amateurs (CORA) in September, 1979, for purposes of publishing a club newsletter.

"The repeater revolution" began in July, 1982, when EARC installed the first Advanced Computer Controls RC-850 Controller in the central United States. There are now 12 ACC control products in operation in central Oklahoma, many as a result of this pioneering move. EARC installed its second '850 this summer on its UHF repeater.

The club maintains three amateur repeater systems, all of which are open for use. Autopatch, emergency autodialing and other features are available with member assistance. The 63/03 and UHF repeaters are unavailable to non-members after certain early morning hours for control purposes.

The North American Teleconference Radio Net can be heard on EARC's 63/03 repeater four times a year. Affiliation with the net began in 1983. Recently, EARC became a licensed affiliate of the Metroplex Network, providing weekly news and information programs, plus a swap net. These programs, fed by satellite, will be presented on the 63/03 repeater on Monday nights, beginning in early 1986.

*MORE EDMOND AMATEUR RADIO CLUB NEWS INSIDE.....HAPPY NEW YEAR!

THE BIG SIGNAL
OKLAHOMA CITY AUTOPATCH ASSOCIATION, INC.

WELL, OLD 1985 IS GONE. TIME TO LOOK FORWARD TO A NEW YEAR AND NEW GOALS. TIME TO THINK ABOUT WHAT CHANGES TO MAKE, IF ANY. MAYBE MAKE SOME OF THOSE NEW YEAR'S RESOLUTIONS. THEY'RE FUN TO DO, BUT FOLLOWING THROUGH AND MAKING THEM WORK IS TOUGH.

THE SKED: JANUARY'S PROGRAM IS TO FEATURE DON, N5ENQ, TALKING ABOUT COMPUTER PAGING. (?) NOT SURE ABOUT THE SUBJECT BUT IT SOUNDS VERY INTERESTING. FEBRUARY, OF COURSE, IS OUR ANNUAL, BIG, FULL FLEDGED WEATHER (THAT'S SPELLED T-O-R-N-A-D-O) SPOTTER'S MEETING. THESE MEETINGS ARE ALWAYS ON THE THIRD TUESDAY OF THE MONTH AT 7:30 PM UNLESS OTHERWISE PUBLISHED. OUR [illegible] CENTER, 800 N. PORTLAND.

SPEAKING OF STORM/TORNADO SPOTTING, WE HAMS REALLY NEED TO GET OUR ACT TOGETHER FOR THIS COMING SEASON. WE HAVEN'T HAD ANY SERIOUS, BAD, REALLY SCARY SEASONS FOR SEVERAL YEARS. IT WOULD BE NICE TO THINK THIS COMING SPRING WOULD BE ANOTHER MILD ONE. HOWEVER, IF THERE'S ANYTHING WE DON'T NEED NOW, IT'S COMPLACENCY.

PLEASE MAKE PLANS TO ATTEND THE FEBRUARY WX MEETING. FIND OUT WHAT IT IS WE'RE TRYING TO DO. DON'T GET CAUGHT OUT THERE REPORTING "CIRCULATION OVER MORGAN ROAD AND I-40" WHEN THERE ISN'T ANYTHING THERE. (WHO IS THAT, ANYWAY? ALMOST EVERY TIME WE HAVE AN ALERT, SOMBODY SEES CIRCULATION OVER I-40 AND MORGAN ROAD. I THINK I'LL MAKE THAT MY PLACE TO WATCH FROM SO I CAN SEE IT TOO.) BE A HELP, NOT A HINDRANCE. KNOW WHAT YOU'RE LOOKING FOR AND HOW TO REPORT IT. ATTEND THE FEBRUARY MEETING. PLEASE.

SOME NEWS: BUDDY, KESLD, REPORTS THAT ACC STILL HASN'T DELIVERED THE NEW EXPANSION MODULE FOR OUR CONTROLLER ON .82. DENNIS, WD5CSM, HAS OUR 444.3 MACHINE WORKING WELL. THIS REPEATER IS "PL" OPERATED. PL FREQ IS 141.3 HZ (4A).

AT OUR NOVEMBER MEMBERSHIP MEETING, GEORGE, AD1S, SHOWED A

(CONTINUED NEXT PAGE)

Q. R. Zedd

ZEDD SAILS; DX WORLD IS AGOG

LONDON -- The DX world was agog around Christmastime as Q. R. Zedd, A5A, the greatest DXer of all time, sailed from the port of Portsmouth to begin his most wonderful DXpedition.

Zedd sailed on the U.S.S. Yagi, a nuclear-powered submarine, escorted by two destroyers, a Greenpeace sailboat, and Jacques Cousteau's **Calypso.**

Details of the operation were shrouded in secrecy. However, the Oklahoma Collector & Emitter, at enormous expense, sent a special correspondent to Great Britain for coverage, and the reporter managed to learn some details of the Zedd plans, as well as a coveted spot on the Yagi, along with Zedd's momma, Constance Wilhemina Zedd, of Mena, Ark., and Tondelayo Schwartz, Zedd's blonde, nubile, 20-year-old QSL secretary and constant companion.

Zedd first announced his plans to activate Atlantis moments before presstime for the last edition of C&E. The intrepid editor of the publication, Joe Harding, managed to revamp pages in order to get a bulletin into that edition for the benefit of the deserving. This cost a lot of money, too, and it was rumored back in the states, just before the undersigned reporter hopped on the Concorde, that C&E subscription rates would probably have to be hiked to about $63 per person to cover the expenses.

It was promised, however, that the rise in C&E costs passed on to member clubs and subscribers would be "temporary," just like all tax increases.

Meanwhile, back at the sub, Zedd was seen lugging hf, vhf and uhf gear on board. A great deal of scuba gear was also hauled on and stowed, and a Coors truck was in evidence dockside. The **Calypso,** anchored nearby, had its little deep-sea submersible lashed ondeck, and Tondelayo was seen carrying not one, but two, bikinis onto the submarine, to the great interest of crew members.

Interviewed on the gangplank of the **Yagi,** Zedd told the C&E correspondent, "Don't bother me now, boy. Can't you see I'm busy?"

This comment was carried worldwide by Reuters and the Associated Press.

A few facts of the DXpedition were, however, dug up by dint of extreme effort and brilliant journalism. Those facts include the following:

Cousteau's **Calypso,** cruising in waters of the south Atlantic, discovered the sunken continent of Atlantis in October. Naturally Zedd, at his home station in Oklahoma, just a hoot and a holler south of the town of Norman, was among the first to hear about the discovery inasmuch as he and Cousteau have a nightly QSO on 75 meters.

After hearing Cousteau tell how discovery of the fabled sunken continent would dispel rumors dating back to the time of Socrates, change world history, revolutionize the theory of plate tectonics and profoundly alter humanity's perception of itself forever, Zedd told Cousteau that a DXpedition had to be mounted as soon as possible to let Honor Rollers add another pelt to their belts.

When told that all the governments of the world were clamoring to send scientific crews to the scene, Zedd told Cousteau:

"Screw all that. This is new DX, Jacques! It will be bigger than Albania or China!"

Cousteau was convinced at once by the keen insight of Zedd's argument, and secret planning began for the current DXpedition.

It is said that the voyage to Atlantis will take approximately one week, and surface preparations will require another day or two. This means that A5A/ATL will be QRZ on all bands, all modes, all frequencies, on or about January 12.

Zedd took with him 10 transceivers and homebrew linears, 3 computers, and several miles of copper wire and aluminum tubing for antennas.

Operators in addition to Zedd will be Momma Zedd, Tondelayo, Bill Blast, of the famed west coast Blast Off DX net, N5IAA (to keep the frequencies clear at all times), noted Ohio DXer Bill Buckeye, Sam "Roaring Kilowatt" Jones of Hereford, Texas, Bonnie Prince Charles, and W5NUT of Shawnee, Oklahoma. KU5B will be allowed to log.

A late arrival in his personal aircraft, after a stormy solo crossing, N5MS, was added to the crew as technical adviser. N5MS was seen hauling a portable repeater onto the **Yagi.**

All operators were undergoing intensive scuba training at presstime.

The little flotilla of ships sailed from Portsmouth into a lowering fog on a cool day around Christmas.

Bands played dockside. Thousands waved ARRL flags and cheered the intrepid crew. At the same time, it was reported that amateur radio bands worldwide went silent.

Everyone, it was clear, was standing by QRZ for Q. R. Zedd -- and Atlantis.

-- KU5B

COUPLE OF VERY FUNNY VIDEO TAPES ABOUT HAM RADIO. FIRST, A TAKE-OFF ON CONTESTING, THEN A DXPEDITION BY SP0OF. THAT WAS ONE HILARIOUS TRIP AND A FINE FILMING JOB BY THE KANSAS CITY GROUP. ALSO AT THE NOVEMBER MEETING, THE MEMBERS PRESENT VOTED TO ALLOW USE OF OUR 146.82 REPEATER FOR A SATURDAY MORNING "SWAP AND SHOP" NET HOSTED BY BOB, W7LOU. THIS NET IS GROWING IN POPULARITY AND IS DOING A FINE JOB OF GETTING SOME QUIET ONES OUT OF THE WOODWORK. LISTEN ANY SATURDAY MORNING AT TEN.

CHARLES, N5FMU, IS OUR '86 FIELD DAY COMMITTEE CHAIRMAN. HE'S WORKING VERY HARD TO GET IT ALL TOGETHER BEFORE IT'S DUE. PRESENT SITE CHOICE IS THE OPEN AREA EAST OF BAPTIST MEDICAL CENTER. WE CAN GET MAXIMUM PUBLIC EXPOSURE THERE, WITH ALL THE HOSPITAL TRAFFIC ON INDEPENDENCE AND THE MAD RUSHES ON "HASSLE HIGHWAY" (FORMERLY NORTHWEST EXPRESSWAY.) THE SITE HAS BEEN CHECKED OUT AND APPROVED BY BIG GUNS AD1S AND KE5LD.

HAPPY 1986, EVERYBODY. KEEP UP THE GOOD WORK. 73 DE N05M.

A genious is a screwball who makes a crackpot idea work.

No Susie. Bacteria is not the rear of a cafeteria.

The other day I saw a license plate that I would like to own. It was "ZNF 12", the alphas in my call and 12, the year I was born. I surely wouldn'tforget that one. Joe, WA5ZNF.

Doctors tell you that if you eat slowly, you will eat less. This is particularly true if you're a member of a large family.

THESE CORA MEMBER CLUBS PROMOTE AMATEUR RADIO

1 AERONAUTICAL CENTER ARC
MEETS: FIRST THURSDAY, FLIGHT STANDARDS BUILDING, FAA, S. MACARTHUR

PR	JACK IMAN, WB5SVN	677-8537
VP	TOM MANGHAM,K5LDI	677-5291
SE	GLORIA SEIGNIOUS, WD5JPW	722-1740
TR	BOB PACE, WA5CJG	376-3569
EDITOR:	GLORIA SEIGNIOUS, WD5JPW	722-1740

2 CENTRAL OKLAHOMA VHF CLUB
MEETS: 10:00AM THIRD SATURDAY, RED CROSS. 10TH & HUDSON (BACK DOOR) OKLA CITY

PR	JERRY WETMORE, KD5IS	524-5080
VP	PAT SHERRILL, WB5PS	943-3219
SE	JOE BUSWELL, K5JB	732-0676
TR	ELLARD FOSTER, W5KE	789-6702
EDITOR:	JOE BUSWELL, K5JB	732-0676

3 MID-OKLAHOMA REPEATOR, INC
MEETS: 8:00PM FIRST TUESDAY, OKLAHOMA CIVIL DEFENSE WILL ROGERS BLDG., STATE CAPITOL

PR	DOC BOWERS, KK5W	942-7738
VP	TIM REUSCHER, KA5MUG	848-9910
SE	MIKE SAMBUCO, KA5TSO	672-9176
TR	SID GERBER, W5KOI	737-1050
EDITOR:	MIKE SAMBUCO, KA5TSO	672-9176

4 OK CITY AUTOPATCH ASSN.
MEETS: 7:30PM THIRD TUESDAY. OKLA CITY FIRE TRAINING CENTER. 800 N PORTLAND

PR	DON ROOKER, NO5M	721-2119
VP	DON SAUNDERS, WD5ISS	721-0404
SE	CHARLES HOFFERBER, N5FMU	340-4468
TR	ART HERNANDEZ, N5GRI	354-9724
EDITOR:	DON ROOKER, NO5M	721-2119

5 OKLAHOMA UNIVERSITY ARC
MEETS: 7:30PM SECOND TUESDAY (SEP-MAY) 119 WILSON CENTER. 1334 S JENKINS

PR	LUKE NOAH, KA5BAY	325-1775
VP	JOHN WUSTENBERG, KE5N	325-2382
SE	PETER RICHESON, KA5COI	329-3217
TR	GREG SMITH, KA5LZN	366-1641
EDITOR:	GREG SMITH, KA5LZN	366-1641

6 ALTUS ASSOCIATION
MEETS: 7:30PM SECOND THURSDAY NORTH MAIN FIRE STATION (CD) ALTUS

PR	DWIGHT DENNIS, WB5KRH	482-2498
VP		
S/T	MIKE SCHENKLE, W5VXU	482-1797
EDITOR:	MIKE SCHENKLE, KB5XN	482-1797

7 BICENTENNIAL (76ers) ARC
MEETS: 7:00PM SECOND TUESDAY. OG&E BLDG. SE 3RD & E. K. GAYLORD BLVD.

PR	DONALD DUCK, AE5N	691-4199
VP	TED VANLANINGHAM, WD5JNT	262-1675
SE	JERRY SPROUL, N5AUH	354-2061
TR	TOM WEBB, WA9AFM	737-6716
EDITOR:	JIM SEALS, KB5IN	381-2005

Just think, even YOU can be an author. All you have to do is write what you think, longhand, with crayon or whatever you have. We will print it if it isn't too rank.

9 WHEATSTRAW ARC
MEETS: 2:30PM SECOND SUNDAY. LOCATION VARIES. SEE CLUB SECTION FOR DETAILS.

PR	MARVIN STOKES, WA5JHB	893-2221
VP	VIRGINIA BENEDA, N5EMD	825-3302
S/T	GEORGE MASCHINO, K5GGL	263-7614
EDITOR:	RICHARD RUHLE, WD5GLD	375-4843

19 OKLA INDEPENDENT AR
MEETS: 7:00PM SECOND TUESDAY SOUTHWESTERN BELL IFFICES, PONCA CITY

PR	DAVE WHITE, WN5LUI	765-5707
VP	VERNON TREIBER, N5ANV	767-1571
SE	GLEN BISHOP, JR, KA5PUB	767-1031
TR	BIZ MICHY, WD0HCO	762-3297
EDITOR:	DOUG EVERITT, N5DUB	359-0069

11 EDMOND AMATEUR RADIO SOCIETY
MEETS: VARIES. SEE CLUB SECTION FOR DETAILS

PR	KEN STEPP, N5DBM	341-4874
VP	BILL DEMAND, K5SKA	751-5137
S/T	BILL WRIGHT, KC5GN	341-6076
EDITOR:	BILL DEMAND, K5SKA	751-5137

12 QUARTER CENTURY WA
MEETS: QUARTERLY AT VARIOUS PLACES. NET: 3855 kHz SUNDAY AT 8:00 AM.

CHM	FRED BOARDMAN, W5NL	427-2505
VCH	RAY LONG, W5TY	942-4314
S/T	HOWARD BAKER, W5AS	721-5453
EDITOR:	ROBERT RUNYON, AA0O	373-1818

13 KAY COUNTY ARC
MEETS: 7:00PM THIRD THURSDAY PONCA CITY EOC

PR	PAUL DAVIS, W5HIC	765-2227
VP	MARSH PRONNEKE, WA5UBO	363-2526
S/T	DAVE LAND, KD5FX	762-8616
EDITOR:	RICK LONG, KE5XY	767-1871

14 CIMMARON ARS
MEETS: 7::PM FOURTH MONDAY. PLACE VARIES. SEE CLUB SECTION.

PR	JACK DAY, WN5Z	227-3462
VP	LEO PEIL, KA5DUO	886-2996
S/T	REETA MARTIN, KA5SLY	227-3013
TR	DEDE BAILEY, N5FUN	227-2061
EDITOR:	RUTH SIMPSON, N5FUR	227-2791

15 SOUTH CANADIAN ARS
MEETS: 9:30AM SECOND SATURDAY. RED CROSS BLDG. NORTH OU CAMPUS. NORMAN

PR	JEFF WYKE, KE5EB	329-6762
VP	FRANK RIZZO, W2QCM	321-2899
TR	MONTE BATEMAN, WB5RIX	329-7485
SE	LINDA BRANDT, N5DWN	321-5081
EDITOR:	DAVIS EGLE, KD5IT	321-7570

I bet that you could sell an ad for the C&E. They are just 45c a square inch. Business cards are only $30 a year. Try it.

16 EDMOND AMATEUR RADIO CLUB
MEETS: 7:00PM SECOND MONDAY. SEE CLUB SECTON FOR LOCATION AND TYPE

PR	MARK NORTHCUTT, WD5DYI	755-4672
VP	BOB MOORE, KA5ETA	799-1765
S/T	KAY NORTHCUTT, WA5DYJ	755-4672
EDITOR:	MARK NORTHCUTT, WD5DYI	755-4672

17 CP/M USERS
MEETS: 6 TO 10 PM, SECOND THURSDAY OSU TECH. ROOM 307

PR	JIM WHITE	364-5289
VP	BILL SKIPPER	946-8180
SE	ELAINE WEAVER	495-4089
TR	JOY MELTON	789-0280
EDITOR:	BILL SKIPPER	946-8180

18 GREAT PLAINS ARC
MEETS: 7:30PM FIRST TUESDAY CIVIL DEFENSE ROOM, WOODWARD COURTHOUSE

PR	GERRY FORD, NC5C	256-5342
VP	LEWIS PATTERSON, W5KFK	256-2111
SE	LOIS FORD, KA5PYA	923-7683
TR	FREIDA PATTERSON, N5EOX	256-2111
EDITOR:	LOIS FORD, KA5PYA	923-7683

What have you done for ham radio today?

20 ARDMORE ARC
MEETS: 7:30AM 2ND SATURDAY. CORRAL RESTAURANT I-35 INFORMAL: EVERY WEDNESDAY, 221 9TH NW

PR	GENE SOUTH, WA5IJA	223-8252
VP	HOWARD ROBINSON, WB5FAJ	223-5726
SE	JIM CHILCOAT, W5JCX	226-6816
TR	JOHN MERLYN, WD5FZD	223-9543
EDITOR:	JACK GANT, W5GM	223-2619

10 COCO
MEETS: 9:00AM SECOND SATURDAY, RED CROSS BLDG. NW 10 & HUDSON. DUES $10.00 PER YEAR

CH	BOB PACE	376-3569
VC	BOB HELMS	733-3429
S/T	KAYE DERRYBERRY	681-0461
EDITOR:	KAYE DERRYBERRY	681-0461

CENTRAL OKLA RADIO AMATEURS
MEETS: 7:30PM FOURTH TUESDAY. RED CROSS BLDG. 10 & HUDSON OKLA CITY (BACK DOOR)

PR	DON SAUNDERS, WD5ISS	751-0404
VP	JIM BUSWELL, N5BEQ	236-0368
SE	KATHY WHITED, WB5NDO	799-1457
TR	SUSAN ST LAURENT, N5GVK	324-8180

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EDITOR: Joe Harding, WA5IMF 737-1044
CIRCULATION: Bob Graham, WB5NSV, 677-8695

VOLUNTEER EXAMINER PROGRAM

NOTICE NOTICE NOTICE NOTICE

BEGINNING IN JANUARY, V.E. TESTS WILL BE GIVEN ON THE 3RD MONDAY OF EACH MONTH. THIS WILL ALLOW FOR A TIMELY REPORTING OF RESULTS IN THE CURRENT ISSUE OF THE C & E.

1986 TEST SESSIONS ARE SCHEDULED AS FOLLOWS:

JANUARY 20	JULY 21
FEBRUARY 17	AUGUST 18
MARCH 17	SEPTEMBER 15
APRIL 21	OCTOBER 20
MAY 19	NOVEMBER 17
JUNE 16	DECEMBER 15

THESE TESTS ARE GIVEN AT 6:00 P.M. AT THE OKLAHOMA CITY RED CROSS AT 10TH AND HUDSON. THESE SESSIONS ARE CONDUCTED UNDER THE W5YI PROGRAM AND ARE SPONSORED BY C.O.R.A.

BEGINNING IN JANUARY DON KELLY, KA5UOS, WILL TAKE OVER THE DUTIES OF CONTACT V.E. FOR THIS VOLUNTEER GROUP. OUR GRATEFUL THANKS TO CHUCK WILHITE, K5NK, CURRENT CONTACT V.E., WHO GOT THIS PROGRAM UP AND GOING FOR THE OKLAHOMA CITY AREA. THIS GROUP HAS BEEN IN CONTINUOUS MONTHLY OPERATION SINCE LAST FEBRUARY. CHUCK WILL CONTINUE TO BE AN ACTIVE MEMBER OF THIS V.E. TEAM BUT WILL TURN THE HELM (READ PAPERWORK) OVER TO DON.

AT NOVEMBER'S TEST SESSION WE HAD SIXTEEN CANDIDATES, AND WE ARE PLEASED TO ANNOUNCE THAT WE HAD 7 PEOPLE EITHER UPGRADE OR TAKE HOME A CODE CERTIFICATE. THE BREAKDOWN WAS AS FOLLOWS: 5 TECHNICIAN CLASS, 1 ADVANCE CLASS, 1 EXTRA CLASS AND 1 CODE CERTIFICATE. I MIGHT ADD THAT THE CANDIDATE THAT SUCCESSFULLY PASSED HIS EXTRA CLASS CAME TO US EARLIER IN THE EVENING WITH A NOVICE CLASS LICENSE. WE WISH TO EXTEND CONGRATULATIONS TO THE CANDIDATES WHO PASSED AND OFFER ENCOURAGEMENT TO THOSE WHO DIDN'T. WE CERTAINLY HOPE THEY TRY AGAIN.

WE WOULD LIKE TO REMIND YOU THAT THESE TEST SESSIONS ARE FOR ALL LICENSE GRADES; FROM NOVICE TO EXTRA CLASS. WALK-INS ARE ACCEPTED. WHEN ATTENDING A TEST SESSION, PLEASE BRING THE FOLLOWING:

1. A FILLED OUT FORM 610
2. PEN OR PENCIL
3. CALCULATOR (IF DESIRED)
4. DRIVER'S LICENSE (OR OTHER SUITABLE I.D. FOR MINORS).

(CONTINUED NEXT PAGE.)

The South Canadian Amateur Radio Society

DECEMBER DINNER MEETING

The club held its annual Christmas dinner meeting at the Sooner BBQ on Saturday, Dec. 14. Forty members and guests came to the dinner and sixteen folks brought a white elephant gift to exchange. Several of the gifts had significant value(eg a necklace and earrings made from 1/2 watt resistors, a relay of unknown vintage, and a CB swr meter); but by far the most popular gift was brought by Ron, N5HZS. It was a homemade ceramic duck with a head which was a cross between a likeness of ET and any one of a number of SCARS members. Jess, W5SQJ, managed to trade his way to the duck and brought it home.

OFFICERS FOR 1986

The elections for new officers were held at the November and the December meetings. Nominated for president were two outstanding Norman area amateurs: QR Zedd, A5A, and Jeff Wyke, KE5EB. Zedd's nominator had spoken personally with the great one (after being graciously allowed to stand up from the prostrate condition he fell into upon coming within 15 feet of the worlds greatest DXer), who had reluctantly agreed to head Cleveland County's greatest amateur organization. It was brought out at the meeting that Zedd held the worlds only WAO award(worked all operators) and is to be the first recipient of the 10BDXMMC (ten band worked one million counties outside of the US). Watch QST for the announcement of this new award. It was pointed out that Jeff, KE5EB, was no slouch either, having received awards for working 3 counties adjacent to Cleveland County and for watching all TV channels. The election was extremely close but after several recounts came out 22 to 21 in favor of KE5EB. The deciding factor was undoubtedly due to A5A not attending the dinner (He was busy designing a transceiver and antenna to use the scatter from the tail of Halley's comet on 1296 MHz and packet radio). Sorry, QR. You missed a great time.

The other officers elected were:
VicePresident- Frank, W2OCM;
Treasurer- Monte, WB5RZX;
Secretary- Linda, N5DWN

(CONTINUED NEXT PAGE.)

MID-OKLAHOMA REPEATOR, INC. WA5YTI

I just received a phone call from Mike, KA5TSD, our new club Secretary and Editor. He is out of state, unfortunately attending a funeral. Our condolences to you and then our condolences to our readers because I will have to sub for Mike on short notice for our blurb in the C&E.

Now our December meeting was a dinner at Furr's Cafeteria on December 3rd. Three door prizes -------a 1 year membership to MORI -----were won by Mac K2GKK, Ellard W5KE and Bill, WA5RAQ.

Although .67 is up, it is experiencing some audio problems. When there is a problem on .67, the autopatch is turned on .94. We have to realize the maintenance persons cannot go up the tower in the dark, in the wind and in the snow/rain, so it is very limiting in the winter. So hang in there, they'll fix it as soon as possible----we don't want anybody taking a nose-dive off of that tower, so it's very proper to have those safety rules mentioned above.

Now I'd like to announce our first 3 programs under the new regime:

January 7--A very interesting slide presentation by Mike KA5TSD on the 3rd Combat Information Systems Group (At Tinker), a mobile communications group. They have radio and radar equipment and in effect are pros at what is equivalent to our Field Day.

February 4--An outstanding video presentation by Art Hernandez, KF5DK called "Looking Forward To Being Attacked". It was presented at Ham Holiday, but most of us were looking through the flea market or something else. Those who saw it, like Sue, N5GVK, said it was so good they wanted to see it again.

March 4--A repeat performance by Ron, ND5S, who will lead us again on a tour of the General Motors plant. All hams are invited. We will have a talk-in on either .94 or .67 (whichever is working at the time-ha!). Also, next month's C&E will have a map in it showing exactly how to get there and where to meet.

We have changed our format to having the programs first at 8:00 pm followed by a short, productive, concise business meeting.

I want to have the kind of programs that are interesting and geared to the whole family. Bring your spouse and kids out, or a friend or two, to the meetings. None of the programs

(CONTINUED NEXT PAGE)

VE CONTINUED

6. ORIGINAL HAM LICENSE (YOU KEEP)
7. XEROX OF HAM LICENSE (WE KEEP)

IF YOU DO NOT HAVE A FORM 610, ONE WILL BE PROVIDED. A FOUR DOLLAR FEE WILL BE CHARGED, AND THIS FEE COVERS AS MANY ELEMENTS AS YOU SUCCESSFULLY CONTINUE TO PASS (YOU LOSE NOTHING BY AIMING FOR THE HIGHEST LICENSE AND IT GIVES YOU THE OPPORTUNITY TO SEE WHAT YOU MAY BE IN FOR AT FUTURE TESTS). THERE IS DICUSSION THAT THE FEE UNDER THE W5YI PROGRAM MAY GO TO $4.25, MORE AS THIS DEVELOPS.

NOVICE TESTS ARE AVAILABLE AND ARE FREE OF CHARGE.

HOPE TO SEE YOU AT THE NEXT TEST SESSION.

RON -- ND5S

THERE WILL BE ANOTHER AMATEUR TEST SESSION, NOVICE THRU EXTRA

DATE January 11, 1986
TIME 10:00 am
PLACE KF Industries (Plant Lunch Room), 1500 SE 89th. One mile East of SE 89th and I-35.

PRE-REGISTRATIONS NOT REQUIRED
(WALK-INS ONLY)

PHONE CONTACT 794-7398 Hal, NX5I after 5:30. 672-5564 George, NX5E after 5:30. 631-1533 Orlie or Hal 8:00 am to 5:00 pm.

The fee has been advanced to the tune of $4.25 for all test except NOVICE.

The December tests had nine applicants. 4 upgraded for a 49 percent average.

MORE MORI

will be so technical that we lose our guests or our members. It is our plan that a good time will be had by all.

Our heartiest congratulations to Howard, W5AS, for his 5 band DXCC award done the hard way - all on CW! Sorry to hear that Ellard, W5KE, was in the hospital, but understand he's back to his old self again.

We Will meet at the usual place, the State Civil Defense on Lincoln. NOTE: Executive Committee Officers and CORA representatives please meet me at 7:20 pm.

Now I'm sure I've left out somebody or something important, but that's the way it is, Janyary 1986--AND THERE YOU ARE!

Happy Holidays
Doc, KX5W, New MORI President

SCARS AGAIN

NOVICE CLASS FINISHES

The fall novice class finished with six persons earning a ticket. They are:

Carol Cotts ,Bryan Kahoe, Peggy Kessler, Don Lynch, Dorinda Skaggs, and Brian Yeaman.

Congratulations to all and welcome to amateur radio!

Credit goes to Monte, WB5RZX, and the other SCARS members who made the class a success.

DUES ARE DUE

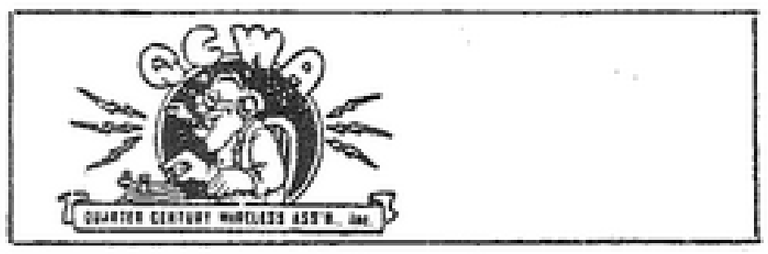
Are your dues due? This club can't function on the hot air its members generate(although that is increasing the national entropy reserve). Send your $12 to Monte Bateman, WB5RZX, 1514 Denison, Norman, OK 73069, or better yet, bring it to the

NEXT MEETING

The next meeting will be held on January 11 at the Norman Red Cross, 1205 Halley Drive, Norman

KD5IT

WANT TO BUY: IC-202S. CALL ELMO BLACK. W5JCB. Work 528-6467. Residence 341-5126.



Thanksgiving (Turkey Day for those of more modern mindsets that I) has come and gone. That final Thursday signals the beginning of what is sometimes referred to as "THE HOLIDAY SEASON". "THE HOLIDAY SEASON" is that period of time in each annual cycle when many Americans O.D. (Over Dose) on football, turkey, football, Christmas shopping, football, booze, football, and of course, football.

This issue of C&E will be out before Christmas, so from all of us to all of you:

MERRY CHRISTMAS
and
HAPPY NEW YEAR

Chairman Fred will have some good words for you this issue concerning the next quarterly meeting to be held on January 19 at the Kirkpatrick Center. Fred and the group that put this one together have probably set a standard so high it will never be topped. Rather than duplicate the information here, be sure to read Fred's item this issue. He did ask that I emphasize one thing however, and that is the necessity for FIRM committments from those planning to attend. I believe we will be asked to prepay along with your reservations in order to make firm committments for the caterer, and to that end there will probably be a coupon somewhere in this issue. Hope to see you there!

Ivan, W5HFU, usually has something good to say about QCWA on Sunday mornings when he checks into the on-the-air meeting. I'd like to echo his thoughts, and suggest that during this holiday season, when you are counting your blessings, you count this fine organization, and your affilliation with it as one.

I need to make a public confession. At the last quarterly meeting (October), during the discussion of the dues issue, I identified myself as having paid my Chapter dues through 1987. Howard, W5AS informs me that ain't so, and that I had paid (some years back) only through 1985. I've sent my check to Howard for eight bux to cover 1986. Hope you-all will too!

Before I forget...

Sam, W5HZD, as some of you may know, has been active for a good many years in the Slow Scan TV (SSTV) part of our common hobby. He indicated recently that he has developed an interest (and capability) in Fast Scan TV (ATV) and had been under the impression that there was a fairly high level of activity in central Oklahoma. Sam has discovered that there ain't nobody to talk to on ATV. I was under the impression that Bob, W5DS, up in Crescent was on, and have told Sam so. Anyone else? Please let Sam know via the Sunday Net, or otherwise.

I had the column for this month pretty well finished, and was waiting for Howard's input before sending the package off to Joe for printing and paste-up. It is very unusual for Howard (W5AS) to be late with the birthday and traffic count reports, so I mentioned it on the air Sunday the eighth and learned that Howard was "out-of-town". As it turned out Howard's older brother passed away in Memphis that Wednesday evening and Howard was attending to the sad duties connected with that event. We are all very sorry to hear of your loss Howard.

- - - - - - - - - -

BIRTHDAY LIST - JANUARY 1986

02	Robert Runyon	AA0O
03	Corrine Weseneck	XYL-W5NQF
05	Cecil Cash	W5PML
05	Marguerette Dalby	XYL-W5COE
05	Jeanis Phillips	XYL-AB5J
10	Ottis Cornelsen	XYL-W5LHU
11	Mildred Drumeller	XYL-W5JJ
11	Myrtie Broudy	XYL-W5MCJ
16	Jo Ann Wilson	XYL-W5FLO
16	Bess Black	XYL-W5JCB
19	Donald Morris	W5TMM
19	Eu Harp	XYL-W5NVJ
20	Maud Cornelius	XYL-W5PHD
21	Gloria Runyon	XYL-AA0O
24	Pat Maier	XYL-W5RDE
25	Helen Smith	XYL-W5KL
28	Garnet Foster	XYL-W5KE
28	Larry J. Shima	W0PAN
28	Deann Nailon	XYL-K5DLE

Now, that's a bunch of birthdays! Happy days to all from the Chapter.

P.S. I hope Maudellis Cornelius isn't sensitive about being printed "Maud", I had to shorten it to fit in the 32 character format. (.-ed)

Herewith for your information from Howard is the November, 1985 traffic report:

SESSIONS	4
CHECK-INS	160
TRAFFIC	16

- - - - - - - - - -

Howard sent me quite a bundle of stuff this month. Some of it will have to be saved for later editions, but there was one item in it which needs discussing here

Howard forwarded a note from Dr. Bill Hubbard, W5HXR, in which he raises the question of duplicate dues payment requirements for members of more than one club or organization affilleated with the Central Oklahoma Radio Amateurs (CORA). CORA publishes the Collector and Emitter (C&E), and conducts Ham Holiday each year. The question is a legitimate one, and troubles quite a few people from time to time. As I understand it, the per-member contribution from each club is based on a pro-rata share of the actual cost of publication of C&E annually. Currently, that cost is calculated at $4.20 per member per club per year. The cost, as I understand it, is based on the total membership of all clubs, and does not take into account the possibility that a person may belong (and contribute through) more than one affilliated club and thus be counted (and charged) more than once. Now, that may appear to be inequitable, particularly to those of us who belong to more than one organization. However, it should be noted that CORA has no individual members. Only the affilliated clubs belong to CORA, so CORA deals only with the clubs as a whole, not the individual members of the clubs. According to the by-laws of CORA, which Chapter 63 agreed to abide by when we joined, each chapter is billed for it's share of C&E expenses based on it's total membership without regard to individual duplicate memberships.

I, for one am often troubled about contributing several times each year in an aggregate amount roughly equal to an annual subscription to a number of highly acclaimed national magazines. But, the choice is mine. I like being affilliated with the several organizations to which I belong. That they belong to, and support CORA is incidental to me, and has no bearing on whether or not I belong to that particular club. If paying an extra $4.20 to each for the privilage of associating with the club gets to be too much, then I'll consider dropping out of some of the clubs. I'd hate to have to make that choice between the three or four fine clubs to which I now belong.

However, if something like that gets to be an important issue within an individual club, then I think the club should come to some conclusion concerning it's affilliation with CORA. But remember, the individual member has no choice in the matter other than through his own membership decision. Right now, the CORA mailing list is kept and updated by volunteers on the computer at the Aeronautical Center Radio Club. That undertaking, and the printing of the mailing labels comsumes a considerable amount of time alone. The record keeping function associated with the C&E is quite formidable just to keep the Postal Department happy. To try to get that function involved with identifying duplicates is bad enough, but can you imagine the chaos which would come from asking the clubs to decide which one should be charged for a particular member who belongs to several?

Please remember, this was not Dr. Bill's question alone, many others have raised the same issue in the past, and will probably do so again in the future. The discussion above doesn't come from CORA, so I'm responsible for any mistatements it may contain. And, I personally neither endorse nor condemn the way it is.

Rob-AA0O

One last parting shot... Howard called the other night, and asked me to remind you-all to send in your ballots for the Chapter election. He indicated he has only about fifty percent returns so far, and would like to see a larger response. Also, let me remind you that we need material for this column, and slipping a little note in with your ballot, and/or dues would be an easy way to get it in. And, vote for only TWO Directors... That information was omitted from the ballot. I don't know how they are going to handle the ballots from folks like me who voted for all of the names under Directors in the absence of instructions. I gotta tell you though. I didn't vote for that guy they are running for Chairman.

SHORT RADIATORS

By "short radiators" I mean antennas appreciably less than a half-wave in length. Of late I've read a rather sneering account of how useless such radiators really are.

HMMMMM. Let's back up and take a really good look at that subject.

Now, it's well-known fact that as the physical length of a radiator is dimensioned (and the frequency held constant) the radiation resistance becomes less.

Why?

Because the interface between the radiating object and the 377-ohm impedance of space becomes an even-greater mismatch. That "radiation resistance" is just a convenient fiction for providing a practical means for talking about the energy (or power) being radiated into space. If said resistance is low, how can you keep power constant? (Read that as "How can you keep the same amount of energy being radiated into space?") Well, you might keep in mind that Power equals Current Squared times Resistance. If Resistance diminshes, then Current must be increased to keep Power constant.

Ah, yes, say the skeptics, but the losses from the REAL resistances go up as the current is increased. True, but the real resistance is something over which you have partial control. You can use silver or copper conductors, protecting them from all forms of corrosion, use large conductors or many small conductors in parallel. (Look up the resistance of four #12 copper wires 100 ft. long and in parallel. Then stop fretting about ohmic losses.)

Ah, but, say the skeptics, how are you going to match the impedance of a transmitter (50 ohms) to an ohm or two without high losses? That question has already been answered. Go back a few years and read how the military loaded the transmitting loops used in jungle sites. They did it with capacitors only... and in the HF spectrum losses in capacitors are just too low to measure.

But, say the nay-sayers, reduced-size antennas are notoriously narrow-banded in their frequency response. Who said anything about wide-band frequency response? Or, about resonance, for that matter?

Oh, but resonance is necessary for radiation. Everybody knows that resonant antennas are the only ones that work.

Ah, say I, then why is it that when the military (or some commercial company with unlimited funds and real estate) wants to put up the very best antenna for dependable communication, they construct a non-resonant antenna, a travelling-wave antenna, such as a rhombic or a terminated Vee? Let's have no more light fiction or old wives tales!

Oh, I'll grant that a resonant antenna is the easiest one to feed energy into... but it's not the ONLY one! And no one should fall into the trap of believing that resonant antennas are the only REAL antennas!

I'll close with a couple of statements, ones that I doubt that few engineers will deny.

A. If an impedance match is effected between a generator and its load, energy will be transferred from that generator to that load.

B. If RF energy is transferred from an RF generator INTO a radiator, that energy will be radiated.

Note carefully that word "into"; That meant IN-TO, not tossed at!

W5JJ

SOME THINGS ARE JUST TOO FINAL!

And what triggered off that statement? Well, I got my renewed Amateur Radio license today... and it expires in 1995! The probability of my being around on that date is slim indeed.

W5JJ

FOREST PARK,OK (NL)Dec.11,1985:- 'Tis the season for just about everything-mostly good. To name a few; spirit of Christmas, families together, sharing with others less fortunate, the New Year, foot-bowling, superbowl, Americas team (Chicago Bears!!) etc-etc. But, early this morning; tragedy at Gander, Newfoundland-250 servicemen plus crew of eight-no survivors. Our sincere prayers to the families of the servicemen and crew at Fort Campbell,Ky and elsewhere. May they find a way to comprehend-how fragile life but, the kingdom of God is not. Continuing and speaking for the entire membership-a mutual expression from each family to each family; expressing the "True spirit & meaning of Christmas". This is the best way I can think to say it in a few words. But, this is not meant to be exclusive-any others reading this are included as well. Since many families cannot be completely together at this Yuletide season-the last stanza

of a poem I recall from away back in time:

I miss you in the springtime,
and, also in the fall-some,
but, 'ere Christmas comes round,
I pine for you and balsam,

(anon)

Robby, AA@O, our now & hopefully continuing NEWS EDITOR & myself frequently get together, via Land Line, to make certain we do not knowingly duplicate bits of news. Mostly because I do not input to "File Zero" at an appropriate time. But, after this issue, things will be different-You'll see Robby!!. The following are some telecon words from Howard, W5AS, Sec./Treas-yesterday to be exact.

(1) PLEASE don't wait to vote. The instructions "Directors-vote for two (2)" were inadvertantly omitted from ballot. Vote and seal in envelope marked BALLOT. Also compleat PINK SLIP plus other news we welcome (see Nov.21 NEWS LETTER) & mail back in already stamped envelope.

(2) Ballot deadline will be Saturday, Jan. 18 (in hand or last mail). Dues can be paid now or at your discretion after January 1 or at the Jan. 19th meeting. We try to be very flexible!

(3) From the last CORA meeting the following: (a) Ham Holiday '86 will be Aug. 8,9,10-again at Lincoln Plaza. (b) Chapter 63 will again be in charge of the ARRL Booth. A volunteer Chairman will oe needed (Tiny, W5NBH Pls note) plus X.....No. volunteers to man the booth (1 to 2 hrs,ea) Seriously, believe Tiny declines. (c) We will have a QCWA sponsored breakfast; as in all years past, but the name is open to change because the event is open to all comers. Cost is same as last year. How about "Early Risers Breakfast"?? (sub ED.)

In advance, a hearty and sincere welcome to Thomas Van Woody, W5FMX to QCWA, Inc. and to Chapt. 63. According to Howard, eligibility is 2 Jan. '86. Paperwork is in the works via Howard, W5AS. To many of T Van's many friends, he enjoys the name "Anchor Clanker"-left over from WWII U.S. Navy Tour of Duty. T Van, Pls. put the Jan. 19 meeting on your calendar!!!

Acknowledge a very nice letter from Walter A. (Abe) Crook,W7LLP To Eunice Holt and on to me-Tnx. Abe & Eunice; concerning the recent loss of his Partner/XYL. Quoting in part "It was very nice to receive a card to help make the sorrow a little less painful. Know that many others have also suffered losses and can readily sympathize with them as well.----Will try to make one of the meetings in the near future, depending on weather and conditions." Abe, all of us look forward to seeing you again. Perhaps the Jan. 19th meeting will entice you!!!

JANUARY MEETING-2nd NOTICE

First-I propose we express a sincere vote of thanks to Clarence E. Page who, very substantially, fathered this "Air Space" complex with his time, extraordinary effort, and a very substantial amount of his own money. At the same time we must recognize John Kirkpatrick & many others in a like manner. Second-Have researched the "Old Farmers Almanac, 1986 & determined the WX for Jan. 18-20 will be "clear & warm".

Covered briefly in the 21 Nov. NEWS LETTER, to all members; this optimistically popular event is still on for Sunday, January 19th, 12 noon to 5 PM-closing, Kirkpatrick Center @ N.E. 52nd & Martin Luther King Ave. (old Eastern). Use North entrance-block sign reads "Air Space, Photography, African Theater. Spacious parking lot just north. Meeting room is up the stairs & turn right; elevator also.

Though advertised as QCWA, Chapter 63's Quarterly Meeting, this event is definitely open to all interested persons; especially Ladies & Guests. Catered Sunday dinner (Dub Adams Catering Service). A number of Chapt. 63 members have stated "the food is always excellent & the service as well". During last Sunday's QCWA Net, the vote was virtually unanimous for the barbeque type fare-it is set-up mild, but may be enhanced to each individual's taste; brisket, chicken, ham plus trimmings, coffee/tea /etc. Your Board of Directors sincerely asks for a big turnout for this first time event at the Kirkpatrick Center. PLEASE come and help to decide if this facility might become a semi-permanent meeting place??. A number of other organizations do!!

Plan to come and stay awhile!! The main program is a tour of the Air Space museum &facility, comprising 82,000 sq. ft. on two floors; though not all finished. many hand-on exhibits, including two Link Trainers; certificates issued for those agile & willing to try. Look for one of our own; Dr. Owen Garriott, W5LFL in the Hall-of Fame room-2nd floor plus many others you may know.

But, some may desire to also take in the Kirkpatrick Planetarium; showing "The Return of Halley's Comet"-45 minutes duration at either 2PM or 4PM. This was merely suggested as something extra to the main meeting-if you miss it, it actually runs from Jan.11 thru April 30, 1986. Please check appropriate box on mail in form to follow. The Planetarium seating capacity is 120 persons-we will obtain advance tickets for those interested!!

VERY 73 TO ALL-Fred, W5NL

ANNOUNCEMENT & COUPON
(Via Doc Bowers,KX5W)

.....

QCWA MEETING

Sunday, Jan.19,'85 (12:00 & on)

KIRKPATRICK CENTER (westside)
N.E. 52nd & Martin Luther King

All QCWA members/XYL's/Guests & the Amateur Community INVITED!!

You must Preregister by Jan.12 deadline!!

Please cut out coupon below & send $8.50/person, to cover the Sunday dinner $7.00 plus $1.50 for the Air Space museum Prog.

MAIL TO:
Fred C. Boardman, W5NL
2900 Bird Drive
Oklahoma City, Ok.73121
(Tel. (405) 427-2505)

.....

NAME.....Call.....

ADDRESS.....
.....

No. Tickets @$8.50.....
Total Enclosed:.....

PLANETARIUM.....2PM.....4PM

NOTE: If you want tickets back by mail--send SASE. Otherwise they will be on hand at the meeting.

.....

A CHRISTMAS GIFT

JOE

Merry Christmas from Zedd and me.

Jack, KU5B

That's all it said - then I opened the rest of the package and there emerged just about the nicest Christmas present that I would receive.

A bound copy of the book "THE LIFE AND LEGEND OF Q. R. ZEDD" By Jack Bickham, KU5B, a collection of all of the articles which have been running in the Collector & Emitter since 1981 right up to the last one "A Yule Visit To See Zedd".

And the best part is the last part, Zedd's daring plan: to activate the lost Continent of Atlantis, recently discovered more than 600 feet below the surface of the sea.

Thanks Jack from Joe.

Club
NEWS

...Club News

...n't forget. Election of club officers at the January meeting.
Joe, K5JB, Sec'y

Airlines - A Shot Across the Bow

I thought I was going to have a story for you this month regarding the folly of trying to pursue ones hobby in a world of unsympathetic miscreants but the story never developed.

I have to do a lot of travelling and have a lot of fun taking amateur radio gear around with me and operating from various places. I used to take all kinds of stuff to make antennas, and so forth, and get into a lot of interesting discussions with motel owners, police, flight attendents, etc. Lately, my operation has deteriorated to mostly VHF and UHF FM operation and I haven't had a good hassle in a long time. But a good one brewed this week in Dulles airport. While going through security, the lady grabbed the radio out of the briefcase like she had found 5 pounds of composition C. (That is enough plastic explosive to blow an airplane in half and it wouldn't have shown up on an x-ray anyway.) She said I would have to check the radio as baggage. "Sez who?", sez I. "What airline are you travelling on?", sez she. "Eastern", sez i. I will go ask Eastern.", sez she.

Now Eastern is not one of my favorite airlines. I still hold a grudge against Borman for announcing that it was the Cessna 172's fault for backing into the Boeing 727 at San Diego and they ought to keep all those little airplanes away from the airports where real air busses go. My temper flared and I began to plot my attack against Eastern if they tried to make me check any baggage, much less my poor little radio, but it was not destined to be because the Rent-a-snoop returned with the announcement that Eastern didn't care, as long as I didn't-try to talk to anybody on it.

I didn't waste any more of the lady's time explaining FARs (which I don't think prohibit using a radio on the airplane) and the Air Transport Association rules (which is where I think the prohibition lies), or the fact that as an instrument rated pilot I know damn good and well not to get on the thing and possibly squirrel up an approach. I instead hunted out a friendly gate agent and ask if he heard of any airlines not permitting passengers to carry their talkies with them. I hated to lose a good story about tilting at a few windmills. Alas, it was not to be. The guy I collared said he remembered a long time ago, when the rule about radio receivers first came out, that there was some hysteria but wasn't aware of any recent walkie talkie seizure policy by any of the airlines.

Drat! I will just have to find some other wind mill to tilt at. Joe, K5JB

Local Packet Radio News

The AT&T packet radio bulletin board is on the air with the necessary hardware but the program that does all the bulletin board stuff is not in place yet. A bulletin board UNIX script that is used in a New Jersey system is on its way and we should be hearing the results Real Soon Now.

There are some new packet stations on the air. Tom, K5LDI, can be heard early in the mornings trying to get the rooster up. Stew, KD5DL, is the newest kid on the block with the newest piece of "gee-whiz" hardware. He has the AEA "Packratt" for the Commodore 64 and it seems to be working real good for him. Rick, KX7V, in Enid is on the air with a TNC1 borrowed from Sandy, WB5RRR.

As I type this, I expect the rosin is burning at Bob's, WA5CJG, house. He was going to make a concentrated effort to get his Heath TNC running this evening.

Jay, KB0QJ, obtained the WA8DED code for the TNC1 which allows multiple, simultaneous connects. It came to him from WA8DED on an IBM formatted disk and I had to extract it by passing it through my Wang PC, to another disk, thence to the Tandy 2000 to get it in shape to send over the phone to Bob, AF5Z, who burned the ROMs for Jay. Whew!

TAPR is planning a surprise Christmas present for the first 500 people who bought TNC 2 kits. The design was changed slightly to reduce RFI susceptabiliy and the operating program was changed drastically to permit the multiple connects, etc. TAPR is sending an upgrade kit to all the TNC 2 owners who have the earlier models. Neato!

I put the K5JB magic touch on a TNC belonging to Hoss, WA5ZAI, who is now living in Alexanderia, VA. He met me in St. Louis and handed off a TNC that would die during the sign-on period of the power-up. I brought it home and plugged it in. It worked perfectly! I was already tipped off at the last meeting of the packeteros that if one of the handshaking lines to the user terminal was wrongly asserting itself, the TNC would die just like Hoss was describing. I finished his TNC 2 calibration and tested it on the air. This week, I dropped in on him at 1215 in the morning, got him out of bed and wired it to his ADM-31 CRT terminal. Sure enough, it died during the sign-on. Out came the diagonal cutters and the ADM-31 book. He had two problems. There were too many improvisations on the DB-25s connecting the cable to the equipment, and he had the switches set wrong on the ADM-31. Sigh!

That is about it for the local stuff. Let's see what is happening around the rest of the packet scene. Joe, K5JB

Atlanta Hosts Southnet II
from Gateway 12/5/85

On November 23-24, the Southnet II conference took place on the campus of Georgia Technical Institute in Atlanta, Georgia. Approximately 150 people attended the two-day packet-radio meeting, some from as far north as Wisconsin. The meeting was broken-down into three sections: 1) Users; 2) Advanced Packet Techniques; and 3) State Organizations.

The user section was directed toward beginners. Pete Eaton, WB9FLW, presented the now-famous Pete's Packet Primer. The primer was followed with a demonstration of Hi-Res picture transfer by Buck Rogers, K4ABT, and Glynn Rogers, WB4RHO. Buck has been transferring digital images for the past six months using Radio Shack Color Computers. During one recent hurricane in Florida, Buck downloaded weather satellite pictures and relayed them on 145.01 MHz via packet radio.

Doug Drye, KD4NC, presented a primer on basic networking and current alternatives. John Smith, KI4XO, presented a program on the popular WORLI Mailbox/Gateway system, followed by a discussion on using the system on HF and VHF. John has worked with Hank Oredson, WORLI, on the mailbox software over the past several months. This was a particularly important discussion, since Georgia will be using the WORLI Mailbox/Gateway system to provide an interim network in the state as of January 1, 1986. John, and Doug Drye, KD4NC, are working on a version of the mailbox to be used in the Georgia network.

TNC user demos were provided by Pete Eaton, WB9FLW, on the TAPR TNC 2, Tag Spivey, N4EMM, on the Kantronics Packet Communicator, and Jim Griffith, WB5RAX, on the AEA PK-64. Chet Lambert, W4WDR, Publisher of Computer Trader Magazine (CTM) gave an update on the magazine's packet-radio contest. Chet explained that plaques would be offered instead of the prizes originally planned.

Attendance at these sessions demonstrates that packet radio is entering the user phase of development, with greater need for information and coordination.

Bryon Lindasy, W4BIW, presented the latest update on Pacsat scheduled to be launched in 1987. PACSAT will have a low earth orbit of about 500 miles, an orbital period of 90 minutes and an access window of 10 minutes. The uplink will be on 420 MHz and downlink on 2 meters. PACSAT will carry four megabytes of memory, and plans are in the works to provide a gateway to the satellite from the Atlanta area.

Bob Mc Gwier, N4HY, discussed the SAREX II packet-radio shuttle experiment. The shuttle will carry a specially outfitted TRS-80 model 100 and TNC 2. Users on the ground will connect to the station, be given a QSO number and then automatically disconnected. The QSO will be logged, and a QSL will be sent upon request. Bob has been checking the software at his home in Auburn, Alabama.

TAPR Ceases TNC2 Production
from Gateway 12/5/85

Tucson Amateur Packet Radio is pleased to announce the cessation of its production of the popular TNC 2 kit!

Yes, pleased. An all volunteer R&D, manufacturing, marketing, and support organization is fun for awhile, but it soon takes a great toll on all involved.

TAPR began life in 1981 with a simple goal: to experiment with packet radio and packet-radio networks. At that time there was little in the way of easily acquired packet equipment. TAPR took a short side trip into the manufacturing world - to permit widespread experimentation with packet radio by making high quality software and hardware building blocks available on a large scale at low cost.

That job is now complete. The TNC 2 design is stable, and presents a good balance between small size, low power, and ease of manufacture, while still allowing for high-speed, full-duplex operation, adaptability to future requirements such as split-baud-rate operation, and easy interface to future modem designs.

It is now time to turn the manufacturing and marketing tasks over to industry, and to continue with research and development in new areas of packet radio. We have made our TNC 2 design available to others through an OEM agreement. These alternate sources are listed below:

Advanced Electronic Applications, Inc. PO Box C-2160 Lynnwood, WA 98036 (206) 775-7373

Model PK-80. Assembled and tested only. Available from dealers. (AEA also produces the PKT-1 -- a TAPR TNC 1 clone -- and the PK-64 designed especially for the Commodore 64 computer.)

GLB Electronics, Inc. 151 Commerce Parkway Buffalo NY, 14224 (716) 675-6740

Model TNC-2A. Kit form only. Factory direct. (GLB also produces the PK-1 and PK-1L "software approach" assembled and tested TNCs.)

MFJ Enterprises, Inc. PO Box 494 Mississippi State, MS 39762 (601) 323-5869

Model MFJ-1270. Assembled and tested only. Available from dealers.

(editor's note: Rumors from Hamnet indicate the MFJ TNC2 type packet controller will be available to the general public in February of 1986. Suggested retail price for the wired and tested, ready to run, unit is supposed to be $129.95 that ain't bad! K5JB)

PacComm Packet Radio Systems, Inc. 4040 Kennedy Blvd., Suite 620 Tampa, FL 33609 (800) 835-2246 Ext. 115 (orders only) (813) 689-3523 (technical/service info)

Model TNC-200. Assembled and tested-/Complete kits/Partial kits. Factory direct.

Therefore, assured of the continued availability of high quality TNCs at reasonable prices, TAPR has ceased production with TNC2 order #1200 (s/n 3721).

TAPR will continue to support software development for the TNC 2 as well as the earlier TNC 1. Other ongoing projects include the TAPR NNC (a network node controller), higher-speed modems, packet satellite support, and other areas of packet development. If enough demand exists, TAPR may make bare boards (no parts) available to experimenters. TAPR has no new TNC hardware products in development at this time.

We invite you to become a member of TAPR, and to attend the next annual membership meeting in Tucson on February 8th, 1986.

TAPR wishes to extend its heartfelt thanks to you, the Amateur community, for your strong and continuing support. From WA7GXD

Spread Spectrum
from ARRL Ltr 12/05/85

When we go on the air with conventional AM and FM emissions, the energy in each resultant signal is concentrated narrowly around a center frequency. Signal bandwidth increases with information rate. The hassle with such compact signals is that they're quite vulnerable to other similar signals at or near the same center frequency. (We bet you've already experienced somebody else calling CQ, or a "test pest," right atop the station you're working, for example.) Spread-spectrum signals don't follow this rule of concentrating signal energy around a center frequency. Their bandwidth is not necessarily tied to data rate. The whole idea of spread-spectrum work is the intentional spreading of signal energy over such a wide bandwidth -- both in frequency and over time -- that the signal's energy isn't very great in any one place for very long.

What's the point? Great immunity to non-spread signals -- like CW, SSB, RTTY -- for one thing, and little likelihood of "collision" with other spread-spectrum signals spread according to differing binary sequences. And these techniques really work: spectrum-spreading is a popular anti-jamming technique used by the military, for instance, because it's hard for anyone to interfere with a spread-spectrum signal who doesn't have its binary-sequence "key."

Radio amateurs are going to have their shot at spread-spectrum work as of June 1, 1986. That's when the rule amendments specified in FCC's Report and Order in GEN Docket 81-414, "Amendment of Parts 2 and 97 of the Commission's Rules and Regulations to authorize spread-spectrum techniques in the Amateur Radio Service," go into effect. FCC had some ticklish questions to address in allowing us spread-spectrum operating privileges. For instance, since one of the main uses of spread-spectrum techniques has so far been the hiding of signals (implicit in the anti-jamming use of spread-spectrum techniques by the military), we couldn't just bring up our spread-spectrum rigs under present rules without transgressing prohibitions against use of codes and ciphers.

FCC has specified the methods to be used in amateur spread-spectrum work closely enough so that the Commission is assured of being able to perform its monitoring and enforcement duties even when an amateur spread-spectrum station might be inaudible to those of us listening with "conventional" receivers. We will have to reaquaint ourselves with our old friend the logbook; FCC wants complete documentation of how and what we'll be doing. There was also the concern that since authorized spread-spectrum signals might appear as broadband noise, spread-spectrum work should be limited to amateur bands offering plenty of "wide-open spaces," to keep intra-service interference possibilities to a minimum -- especially while we're getting our feet wet with the new techniques. FCC concurred, and limited spread-spectrum work to bands 420 MHz and above. We'll still have to identify our spread-spectrum transmissions with narrowband emissions, as FCC puts it, "so that CW, SSB and/or narrow-band FM receivers, which might be victims of interference, can receive the station identification." Frequencies used for such IDs will have been chosen to minimize interference to, while facilitating identification by, other operators. Right off, spread-spectrum work will be limited to domestic communication (not international work), as other national administrations will have had to satisfy themselves of the achievement of proper safeguards against encryption and intra-service interference before their amateurs jump into the spread-spectrum swim.

This is really new ground for Amateur Radio -- so new, in fact, that we have a number of decisions to make about exactly how to go about spread-spectrum work in ways guaranteeing station-to-station compatibility (see "Interoperability," below). FCC has not limited our choice of spread-spectrum options so narrowly that we

can just press the button and go, although the final rules limit spreading methods to frequency hopping and direct sequence only. This does offer the opportunity for a modern jibe, though: when spread-spectrum really takes off, the bands will be jumping! Part 97 updates relating to amateur use of spread-spectrum techniques will appear in a subsequent Letter.

More on 160 Meters Sharing
from ARRL Letter 11/21/85

On November 8, FCC issued an Erratum correcting a few glitches in its Report and Order in PR Docket 84-874 -- the action making Amateur Radio secondary to radiolocation at 1900-2000 kHz as of December 9, 1985. The corrected Report and Order states that radiolocation stations displaced from 1605-1705 kHz would not be able to apply for 1900-2000 kHz operation until July 1, 1987, giving us "virtually exclusive" (FCC phrasing) use of 1900-2000 kHz until then. Well, our dictionaries vary a bit in their definitions of "virtual," but "giving the appearance of but not actually being in fact" is pretty close. And that's the way it is with our virtual exclusivity at 1900-2000 kHz: we may have company there very soon but it may be hard to tell when we do!

"Fine print" in the text accompanying the actual Part 97 amendment had said: "Also, wideband systems can be authorized immediately in the 1900-2000 kHz band since relocating displaced systems from the 1605-1705 kHz band will not begin until July 1, 1987." Wow! Would we really be sharing 1900-2000 kHz as early as December 9, the date the 84-874 Report and Order goes into effect? Hq. staff had a hard time believing their eyes, and asked for clarification.

Yes. The Erratum states that " . . . as stated in paragraph 25 (of the Report and Order), wideband systems can be authorized immediately in the 1900-2000 kHz band and need not wait until the dates indicated for existing and new radiolocation systems . . . applications for wideband systems in this band will be accepted beginning December 15,1985. The thought-provoking part of this is whether we may be able to detect aurally the presence of wide-band radiolocation if it arrives at 1900-2000 kHz. "Wideband" here means "spread-spectrum," and it remains to be seen if such a signal would rise much above the high atmospheric and man-made noise levels at most QTHs.

W0ORE/Challanger Video Available
from ARRL Letter 12/5/85

If you heard W0ORE's signals transmitted from the Space Shuttle Challenger last August, you'll want to see the videotape on SAREX, the Shuttle Amateur Radio Experiment. Executive Producer/Writer, Roy Neal, K6DUE; Producer/Editor, Frosty Oden, N6ENV; Field Producer/Technical Supervisor, Bill Pasternak, WA6ITF; Production Assistant, Paul Courson, WA3VJB. The 18-1/2-minute SAREX videotape documents all the excitement of this history-making Ham-in-Space mission, including the slow-scan pictures Tony England transmitted to Earth during the mission. It's available from the ARRL Publication Sales Department; postpaid prices are $25 for VHS format and $35 for U-matic, and it's available on loan to anyone who can have it shown to an audience of prospective hams -- ask for VT-36 from the ARRL Film Library.

SCRRBA asks FCC for F8E Above 928 MHz
from ARRL Letter 11/21/85

As we gained access to the 902-928 MHz band September 28 (see the Letter for August 15, and September QST), we were also granted use of an emission not allowed the Amateur Radio Service previously: F8E. That's "F" for frequency modulation, "8" for two or more channels containing analog information, and "E" for telephony. F8E is the emission used by stereophonic FM broadcasting stations, but its uses don't stop there. The Southern California Repeater and Remote Base Association thought that 902 MHz was a good place for Amateur Radio to make use of F8E, and suggested this as FCC was considering what privileges should be allowed amateurs on the new band. The request paid off; we were granted F8E on 902.

In late October, SCRRBA petitioned FCC to allow F8E on all amateur frequencies above 928 MHz for the same reason advanced by FCC in granting its use at 902-928 MHz: its availability would " . . . permit amateur operators to experiment with a new transmission mode and to efficiently utilize the spectrum when several different channels of information must be transmitted simultaneously from one location to another."

Why not F8E on lower frequencies? SCRRBA considers them too heavily utilized for such a bandwidth-consumptive emission, excepting perhaps the 420-450 MHz band. Concerning 420, the Association said it would " . . . prefer to wait until a little operating experience with the mode is achieved before considering including the 70 centimeter band within the authorization."

AM DSB Power Limitation
from ARRL Letter 11/21/85

On July 22, 1983, the FCC adopted a Report and Order in PR Docket 82-624 replacing the former input-power-measurement standard in the Amateur Radio Service with a power-measurement standard based on peak-envelope-power output, with 1500 watts being the maximum allowable power. The Commission recognized that this would have an impact on AM double-sideband full-carrier radiotelephone (A3E) operation, typically limiting such operations to half of their previous maximum allowable operating power. The FCC grandfathered the input power measurement rules for AM DSB operations until June 1, 1990, to minimize the immediate impact of this rule change. ARRL had gone on record as favoring permanent grandfathering of the A3E output limitation, but FCC's response was that " . . . we cannot justify a permanent and continous expense in terms of equipment and training that would be necessary for us to be prepared to make a special power measurement for this class of operations."

Glenn Baxter, K1MAN, fought this change for A3E all the way up to the U.S. Court of Appeals, and the judgment of that court was issued October 15. The U.S. Court of Appeals for the District of Columbia Circuit upheld FCC's decision, and its judgment was accompanied by an unpublished memorandum opinion. In his appeal, Baxter had argued that the new standard, which permits A3E operators to continue to operate under the old standard (1000 W DC input, the output power of which might approach 3000 watts peak), would decrease the range and quality of his operations, thus reducing the educational and economic value of his equipment. While the court acknowledged the importance of public service that Amateur Radio operators render, it could find nothing on the record to indicate that the Commission had violated its legal duties in this matter. It also concluded that the FCC possessed technical knowledge and expertise which exceeded that of the court. Baxter has indicated his intent to take his case to the Supreme Court.

(Editor's comment: Hq. receives a small but steady stream of "stamp out spectrum-gobbling AM" letters. We hope it's not out of place to point out that the emissions used by most amateurs between 1.8 and 30 MHz are amplitude-modulated emissions. Full-carrier double-sideband AM phone (A3E) is just one of several. By "doing away with AM," we'd be blowing away SSB (J3E) and CW (A1A) emissions as well. FCC estimated in its 82-624 Report and Order that "only approximately one percent of the licensed amateur operators use this mode." As attrition runs its course, this figure can be expected to diminish further still. Aside from the question of spectrum usage, perhaps a hidden issue is whether or not every last radio amateur has completed his or her experimentation with full-carrier double-sideband amplitude-modulated radiotelephone, as the license each of us holds is as much a technological learner's permit as it is a pass to the amateur fraternity. So -- "do away with AM?" Never! What would we do without CW and SSB? And A3E? That's for you to decide.)

When Receivers Are Outlawed...
from Texas VHF-FM Society News 11/85

If the "Electronics Privacy Act of 1985" now circulating in the committees of Congress becomes law, you could find yourself arrained on federal charges of 'eavesdeopping on electronic communication' or 'posession of

equipment capable of intercepting private communication' if you are caught using, or suspected of possessing, any of the following:

A television set that tunes up to channel 83 (receives the new 800 ™Hz short-range mobile telephone service; so called "cellular")
A general-coverage receiver, or transciever (receives HF ship, aircraft, or international telephone and telex communications),
A tuneable or scanning VHF-UHF receiver of almost every type currently marketed,
A two-meter amateur radio set capable of receiving the Austin 146.78, or any other autopatch repeater that interconnects with the public switched telephone network (believe it or not!).

If you had always assumed that as an American citizen you had the right to own a radio receiver and tune it anywhere you wish, please note that our 'founding fathers' did not quite possess the foresight to include such a provision in the Bill of Rights. As a result, there is no statutory protection of receivers or 'short wave' listening, and any small but wealthy industrial lobby organization can have a bill introduced and hurried through the machinery of Congress that contains obtusely worded provisions in the name of 'privacy' that will slam shut the great iron gates forever on you private enjoyment of using, owning, or constructing radio receivers.

The bills are on our Congressmen's desks right now; S-1667 in the Senate, and HR-3378 in the House of Representatives. The justification for introducing into federal law this unprecedented intrusion into our private homes and personal hobbies, is that some new and highly profitable industries don't believe that they will be able to maximize their profits without it. The CELLULAR TELECOMMUNICATIONS INDUSTRY ASSOCIATION and the ELECTRONIC MAIL ASSOCIATION, political action lobbies for their respective business clients, have dictated the provisions of these bills fearing that some potential customers of those radio career services will be reluctant to invest in mobile telephones or data services because privacy cannot be assured. Why did they not suggest voice scramblers and data-encryption devices for their customers who demand privacy? That would cost money in added hardware; extra black-boxes at each installation. Instead, they chose to lobby the Federal Government into outlawing receivers (except for approved type broadcast-only models) among the population! That will cost next to nothing (for the industries), and if dutifully enforced, can provide the desired result. So what if a few, odd individuals once enjoyed tuning their receivers outside of the 'approved' bands? They won't be missed. We're talking DOLLARS here!

In case you are thinking this is silly ranting over something that will never happen (...bills often introduced for personal friends, to pay off political debts, etc., are never expected to get very far...), please think again! These bills are being pushed hard by powerful groups whose lawyers have prepared them cleverly. The 'eavesdropping and interception' provisos are buried deep beneath long sections on wiretapping, law enforcement, and protecting public rights to privacy. How many of our elected representatives may fail to thoroughly read or understand this technical and legal hodgepodge, fail through ignorance of our use of the radio spectrum to understand its impact, or fail to realize that anybody out there cares, and 'rubber-stamp' the thing into law. Slick groups with BIG MONEY are behind these bills, and who (orher than me and, I hope, YOU) is going to present the other side? You could wake up some morning a criminal!

What can be done? Well, of course, you must write to YOUR Congressman and Senators. Send them a calm, lucid (not like this piece!) exposition of your concerns on the matter. Educate them a bit about radio reception and why it is important to you. Explain that there are no boundries, barbed wire fenses or Berlin walls in the frequency domain (and there should not be any in a free society). Suggest subtly that their political futures depend on their paying attention to this matter when it comes up, and deciding its fate in the public interest, convenience, and necessity over that of some corporate entities with the best interests of their bank accounts in mind.

Now write to Representatives in other districts, Senators in other states (both parties). Don't forget that EVERY Senator has a moble telephone in his car, electronic mail terminals in his office, so his subliminal loyalties lay initially WITH our opponents! After all, he's an 'end customer' of the industries that want this law, and perhaps worried about privacy himself!

We must convince them numerically that their constituents are dead against this. Get your friends and neighbors, non-hams, everyone you can make understand the danger of this precedent-setting act. Pull all of the influence you have through social contacts, clubs, newsletters, networks, and QSO's. Write letters to editors of newspapers, large and small. Call into broadcast radio "talk forums" (force yourself, this is important!) Do what you have to do to turn this disaster around, but most of all, DO SOMETHING YOURSELF! Don't wait a week, or assume "the ARRL will fix it somehow", or the "FCC won't try to enforce it". That's really burying your head in the sand, and there are a lot of chopped off heads around the world comfortably buried in the sand.

Please don't sit back and allow government restrictions on radio receiving to get a start in the good-old USA.

Ron Johnson, WA5RON

Third Party Loophole Closed

from ARRL Letter 12/5/85

On November 20, the Commission released a Report and Order PR Docket 85-51, amending the amateur rules to prohibit amateurs who have had their operator licenses suspended and station licenses revoked from participating in Amateur Radio communications as third parties. The Commission said that without such an amendment, a former licensee could continue to engage in the types of communications that had necessitated enforcement in the first place if permitted by operate as a third party by a current licensee. It is important to note that the amendment does not change present rules provisions pertaining to third-party participation. It simply precludes disqualified persons from attempting to circumvent enforcement sanctions by participating in third-party communications.

To update your copy of the FCC Rule Book, amend Section 97.79 of the Rules for Amateur Radio Service by deleting paragraph (d). Section 97.114 ("Third-party traffic") is revised to read as follows:

a) Subject to the limitations specified in paragraphs (b) and (c) of this section, an amateur radio station may transmit third- party traffic.

b) The transmission or delivery of the following third-party traffic is prohibited:

(1) International third-party traffic except with countries which have assented thereto;

(2) Third-party traffic involving material compensation, either tangible or intangible, direct or indirect, to a third party, a station licensee, a control operator or any other person;

(3) Except for emergency communications as defined in this part, third-party traffic consisting of business communications on behalf of any party.

(c) The licensee of an amateur radio station may not permit any person to participate in traffic from that station as a third party if:

(1) The control operator is not present at the control point and is not continuously monitoring and supervising the third-party participation to ensure compliance with the rules;

(2) The third party is a prior amateur radio licensee who license was revoked; suspended for less than the balance of the license term and the suspension is still in effect; suspended for the balance of the license term and relicensing has not taken place; surrendered for cancellation following notice of revocation, suspension or monetary forfeiture proceedings; or who is the subject of a cease and desist order which relates to amateur operation and which is still in effect.

TRS 80C Central Oklahoma Computer Organization

EDITOR'S NOTES
by Martin Schiel, 670-6891

Several months ago Bob Pace asked for a volunteer to serve as editor of the COCO, Inc. column in the Collector and Emitter. After the meeting I talked to him about the position, and I was selected. Lucky me! I missed the September and October meetings because of business trips, but hopefully now I'll be able to devote some of my spare time to editing this column. And hopefully you will keep me busy by submitting lots of articles. (Hint. Hint.)

I felt I should introduce myself to those of you who don't know me very well. I've been a COBOL programmer at Tinker AFB for nine years. For a long time I believed that the last thing I needed was to come home and program some more on a personal computer.

My thinking on that subject changed dramatically two years ago at Christmas when a friend of mine asked me to keep two 16K COCO 2s at my house. She wanted to hide them from the prying eyes of her daughter and brother, the two intended recipients of these Christmas gifts.

Since no 64K COCO 2 existed at the time, she was planning to have co-worker Bill Warren upgrade the COCOs to 64K. My task was to thoroughly check out the computers before she voided the warranty with the field upgrade.

Needless to say, I was amazed at the power of the Color Computer (even the 16K version). When she came around to claim her computers a few days before Christmas, I didn't want to give them up. I knew I had to get one for myself.

I've been a COCO-holic for two years now. I have a 64K Color Computer 2 with two single-sided disk drives, a Gemini 10X printer, and a modem. Repeat, I have a modem with which I can receive your articles.

I've never edited a column before. My only credentials are a love of writing and a neurotic compulsion to correct other people's writing. From time to time I get a little carried away with the blue pencil, but I don't intend to bruise any egos when I add to or delete from your articles. I'm simply striving to make your articles more readable and understandable by the widest possible audience.

I want to make it as easy as possible for you to contribute to the COCO column. If you have an article you'd like to share with the rest of COCOdom, write it down using a word processing program. Then save it in ASCII format, call me at 670-6891 (please, though, I like to reserve the hours of 9PM to 9AM for sleep and other activities), and transmit it to me over the phone.

If you're too lazy to write the article, send me an outline and I'll expand it into an article if it's not too technical. (I'm a programmer, not an electronics wizard.) If you don't have a modem, put your article on a diskette or (ugh!) a cassette and give it to me at the COCO meeting. I promise I'll return the diskette or tape the following month.

I suppose I've rambled on long enough for this month. Keep those articles and essays coming.

TAPE TIPS
by Dorothy Roberts

Place your cassette recorder and your tapes to the right of the television and the COCO. The reason is that the TV and the computer each emanate electromagnetic radiation from the left side. This electromagnetic field can "erase" some of the data on your tapes, causing I/O errors when you attempt to read them.

***

Use inexpensive tapes ($1 for three or four) rather than such brands as Maxell or TDK. The lower grade tapes accurately reproduce the mid-range frequencies, which are used for recording data. They don't reproduce the highest highs and the lowest lows. Whereas this would be a liability for audio, it's a definite advantage for data storage. The more expensive audio tapes can pick up frequencies which will be interpretted as extraneous "noise" and might cause I/O errors when you read them.

***

SKIPF<enter> will advance the cassette to the end of the file.

SKIPF"X" <enter> at the beginning of the tape will display the name of every file on the tape.

***

CSAVE"NAME" <enter> will save your program to cassette. (Note: Insure that the PLAY and RECORD buttons on the tape recorder are pushed down.)

***

Fast forward ahead about 20 units at the beginning of each tape to avoid writing on the leader and the first few units of magnetic tape, which are frequently mangled.

Leave a 5 to 10 unit gap between files to make it easier to position yourself at the start of a file.

***

To find a program on tape:

1. Rewind the tape
2. Press the PLAY button and turn up the volume on the TV
3. Type in AUDIO ON <enter>
4. Type in MOTOR ON <enter>
5. Type in MOTOR OFF as soon as cursor reappears, but don't depress the ENTER key yet
6. When the television set begins to squall, press ENTER to stop the tape.
7. Rewind the tape 2 or 3 units on the counter.
8. Type in CLOAD <enter> or CLOAD"NAME" <enter> to load the file (assuming it's a BASIC program).
9. Type in RUN <enter> to start program.

****

DISK DISCUSSION
by Dorothy Roberts

DO NOT PLUG IN OR UNPLUG THE DISK CONTROLLER WITH THE COMPUTER ON. This could be an expensive mistake because you might burn out some chips.

***

DO NOT LEAVE A DISK IN THE DRIVE WHEN YOU TURN THE UNIT OFF. You run the risk of "crashing" the disk, thereby losing all its contents.

***

Easy tip: Plug the computer and all peripherals (disk drives, printer, etc.) into a power strip with a surge protector. Turn everything on and off with one switch.

DIR or DIR0 (for first drive) or DIR1 (for second drive) will list the disk's directory (i.e., the names of all the files on

the disk.

<SHIFT @> will suspend the scrolling; then, depressing any key will start it again.

<BREAK> will terminate the scrolling altogether.

***

LOAD "NAME.BAS" (or LOAD "NAME/BAS") and RUN will execute a BASIC program. RUN"NAME.BAS" will do the same thing.

BASIC LESSON #1
by Dorothy Roberts

REM or ' after a line number indicates a comment, or remark. The remark will not be executed in the program.

***

A variable is a symbol used to represent a value. Variables can be one or two characters long. The first character must be alphabetic (i.e., A-Z). The second character, if it exists, must be alphanumeric (i.e., A-Z or 0-9).

Examples:
A, AF, A1 (for numbers)
A$, AF$, A1$ (for string data)

A variable can be set up to assume different values during the course of program execution.

Example:
```
10 FOR X=1 TO 3
20 READ Y
30 PRINT Y
40 NEXT X
50 DATA 10,20,30
```

The variable X counts the times the loop will be executed. In this case, X starts at 1 and makes the loop a total of 3 times. The variable Y represents each of the values read in from the DATA statement

(statement 50 above). The first value of Y is 10, the second is 20, and third is 30. (Note that items in the DATA statement must be separated by a comma.)

***

LIST will display an entire file on the screen.

LLIST will print out an entire file on the printer.

LIST 1-100 (or LLIST 1-100) will display (or print) only the lines numbered 1 through 100.

LIST -100 (or LLIST -100) will display (or print) all the lines from the beginning of the file up through line 100.

***

The STOP command halts program execution. You can then use the PRINT command to determine the current value of whatever variables interest you. (Note : In this form the PRINT command directs output to the screen exclusively. It doesn't actually "print" anything on the printer.)

The CONT command resumes program execution at the point that it left off. All variables retain their current values.

The TRON (trace on) command prints the line number of each statement as the program executes it.

The TROFF (trace off) command turns off the line trace.

STOP, CONT, TRON, and TROFF are diagnostic devices that are helpful when debugging programs.

***

PRINT#-2,"Now is the time ... " will print a character string on the printer.

<,> between data will cause it to print in columns.

<;> cancels the carriage return during printing.

***

Spaces between reserved words and parameters are generally optional in BASIC. For example, you can type GOTO 100 or GOTO100. An exception to this generality is the TAB command. TAB (10) will produce an error message. The TAB command must not contain spaces, e.g., TAB(10).

***

A BASIC program obtains data in one of two ways: internally, via READ statements used in conjunction with DATA statements, or externally, via the INPUT statement.

Remember, you must READ the data before the program can use it.

Example:
```
10 DATA 1, 2, 3
20 READ A, B, C
```

INPUT is more flexible than the above method. Rather than "hard-coding" the data in the program, you can extract it from disk or tape. You can even use the INPUT statement interactively to obtain data from the keyboard.

Example:
```
10 INPUT "STRING"; S$
20 INPUT "NUMBER"; N
```

***

The COCO performs arithmetic operations left to right in this order: multiplication and division first and then addition and subtraction.

Use parentheses, ( ), to enclose arithmetic operations which you want to perform first.

Run this program to demonstrate:

```
10 X=10+3*20
20 X1=(10+3)*20
30 PRINT X
40 PRINT X1
```

***

The Color Computer's video display consists of 16 rows and 32 coloumns. Thus, a maximum of 512 characters may appear on the standard COCO display. The first row consists of positions 0-31, the second row consists of 32-63, etc.

PRINT TAB(10) "NAME" will place the word NAME at the 11th position on that line because the COCO begins numbering with 0 instead of 1.

PRINT@ 140 "NAME" will print the word NAME at location 140 on the screen.

***

The following program demonstrates how to center a character string on a line.

```
100 S$="NAME"
110 X=LEN(S$)
120 V=(32-X)/2
130 PRINT TAB(V) S$
```

LEN(S$) counts the number of characters in the string. Thus, in the sample program above, X = 4 because there are 4 characters in the word NAME.

Since each line on the screen consists of 32 positions, subtract the length of the string from 32 to arrive at the number of unused spaces on the line (in this case, 28). Next, divide this number by 2 to determine where to begin printing the string so that it will be centered on the line (in

this case, 14).

As an exercise, write simple programs to:

1) accept a name as input and center it on the screen; and

2) accept a name as input and center it on the printer.

Meeting held at Red Cross Bldg
NW 10th & Hudson
2nd Saturday of the month
9:00 A.M.
Club Dues: $10.00 per year

Meeting called to order by Bob Pace at 9:20 A.M. 103 members/guests attended the meeting on December 14, 1985.

Old Business:

1. All dues are renewable this month. Dues are $10.00 per year.

2. Send articles for the C & E to Martin Schiel. You can reach Martin at 670-6891 or mail articles to him at 5313 Spitz Drive, OKC 73135.

New Business:

1. Jack Cochran reported that HOT COCO is merging with 80 Micro. Magazine subscriptions will be fulfilled by 80 Micro but no word has been received on the status of Instant COCO.

2. Treasurer's Report - Balance on 12/14/85 $1138.76.

3. Motion was made to present $100.00 to the Red Cross as a Christmas "Thank You" for the use of the building. The motion was carried unanimously!!

4. COCONET - Be aware that someone is attempting to create havoc with some BASIC programs. When you download a BASIC program be sure to LIST it before you attempt to RUN the program. There was a discussion concerning the use of 1200 baud by COCONET and the Hayes 1200 baud modem. A concern exists that local phone lines may not totally support 1200 baud to all areas. More on this at a future date.

5. TACO - (Tinker Area Color Owners) meets on the 1st Thursday following the COCO meeting at 4:30 PM in Bldg. 308 on Tinker. Call Al Ingle for more information.

6. The OS/9 group will continue to meet in the home of Dr. Petty.

7. Hardware:

a. RS TPI (Texas Peripheral) disk drives may have loose set screws on the stepping motor causing an alignment problem.

b. It is reported that Star is bringing out a modified version of the SG-10 with fewer fonts that is slower.

8. Software:

a. COCO Christmas by David Coburn. David suggests using your backup as the system disk if you now have single-sided drives. Save your original for future use if you upgrade to double-sided disk drives.

b. Paul Pape needs a printer driver for the "paint" program for his DMP 100.

c. To make a backup of a machine language program on tape, a tape-to-tape utility program is the easiest way to go.

d. Sam Murr is having a problem saving files in VIP Calc when he uses certain escape codes. Problem occurs when he tries to load these files back to print them. The escape codes change. Give Sam a call if you have a fix, please.

e. Tax time is approaching and you will find TAX85 on COCONET. You may wish to use this program to help you with your tax return. No guarantees!

f. Radio Shack has introduced an excellent integrated software package called DESKMATE for the COCO. It is available for $99.95. The package includes six major applications and seven subfunctions. The major applications include: Calendar, Text Editor, Index Cards, Paint, Ledger, and Telecom.

9. Coffee fund - this supports our excellent door prize program so be sure to contibute when you enjoy coffee and donuts.

10. Program suggestions for 1985-86:

BASIC, advanced BASIC, videotapes with the computer, telecommunications, Machine language series, and a series on the DESKMATE applications.

11. 1986 Officers

Elections were held for the 1986 officers at this meeting. Sam Murr will serve as President. Sam was elected by acclamation! The new Vice-President will be Tom Mangham and I will turn over my trusty pen...make that...word processor to Martin Schiel. Congratulations to each of these gentlemen.

12. Where to call for HELP - next month a list of contact persons will be available.

13. Door Prizes -

Thanks to Katy for drawing.

Flip 'n File - Darwin Smith & John Boyer

50 diskettes - Jerry Horton & Mike Weigel

COCO Christmas - Bill Abbott

Disk Carrying Case - Allan Atwood

Rainbow on disk - Richard Setzer

Zaxxon - Rose English

OS/9 - Perry McWhorter

Thanks to David Coburn, Ron Folks and Robby Runyon for donating prizes. Others were purchased by the club and by the coffee fund.

Finally...COCO 1985 in review:

COCO members contributed to pay off the loan for the purchase of COCONET. The loan was paid off in April.

Joe Schilling was honored as the first LIFETIME member of COCO. This category was instituted to honor club members who make outstanding contributios tc the club.

The first annual COCO Swapfest was held in May.

Programs were presented on BASIC, Assembly Language, COCONET, MUSICA, COCO MAX, and Easy Sort. Thanks to Jack Cochran, Larry Griffin, Bob Helms, Bill Holland, Bob Pace, Dorothy Roberts, and Chuck West for presenting these programs.

A special thanks to Bob, Jack and Robby for the extra time and effort they give to the club EVERY month with teir disk projects.

Another special thanks to Bob Helms, Bill Holland, and Bob Pace, SYSOPS for COCONET. They have a tremendous undertaking in keeping the net operating so smoothly.

And finally thanks to Bob and Bob for their expertise and guidance of the club during 1985.

Hope to see all of you on the 2nd Saturday of January at our next COCO meeting!

Secretary/Treasurer
Kaye Derryberry

AERONAUTICAL CENTER AMATEUR RADIO CLUB, INC.
W5 PAA

The meeting of the ACARC this month was opened at 1830 hrs at the western Sizzling Sirloin Steak House where a fine dinner and fellowship was had by all.

After the dinner Bob Graham, WB5NSV, provided some razzle dazzle with his magic show and had the President thinking a raw egg was about to run down his (the pres) face.

Bob did put on an excellent program and we followed it with an auction where ole Rob Runyon, AA0O got bit, but it was all for a good cause.

We ended the evening with some excellent prizes. That lucky ole son Howard Ridgeway, W5WSW, and his wife walked off with the two main prizes. They won a Butternut 10-160 vertical and a 2 mtr magnetic mount antenna. I have the Butternut in my garage as of this writing amd maybe he will forget about it and I will make use of it at this QTH.

We closed out at about 2030 hrs with good feelings and a full belly.

I think it was an enjoyable evening for all.

Next month is election of our officers for '86 so come out and be ready to vote and serve.

Salem

ZAP IN TIME (ELECTROSTATICWISE SAVES NINE (Another Article on ESD)

Everybody knows the susceptibility of certain kinds of electric devices to static charges. CMOS is an example. I remember the first couple of times I worked with a circuit that had CMOS devices in them. I was so careful to make sure that I was grounded before handling a gate. There were actually several technique that coule be used. One was to touch everything that was metal around me before picking up the chip. Another was to wet my hands with water before picking it up. I can never consciously ever remember blowing up a circuit from an electrostatic discharge (ESD). But recent information may indicate that people like me may be just lucky or perhaps I have just gotten lucky because the fact that I never thought that I had zapped some component does not necessarily mean that it hasn't happened.

After a certain period of time, I became lax in the procedures. Modern techniques of design also simplified the rules a little bit by handling some of the ESD. For example, most CMOS manufacturers now put diodes from each gate input or output going to the positive rail voltage. The idea is to provide a discharge path to a low impedence source (the power supply) to take away the static discharge. This is some help when a chip is in the circuit, but, of course, is not that much help when it is out of the circuit.

But, I guess that I have been a little lucky, especially after viewing a film that Motorola has been distributing on ESD. Electrostatic discharge damage has many failure modes short of catastrophic. You can accidentally zap a circuit and damage the chip and have it pass all tests known, but still be injured and available for failure later in the future. Static discharge punctures semiconductor barriers. Catastrophic failure may wipe out the entire barrier. Failures short of catastrophic may merely sever the barrier partially and leave it disabled. After a couple of hundred of thermal cycles, the device fails inexplicably. This is not really a manufacturing failure, but in the field. And even if troubleshooting for such repairs takes not much time, the downtime and visit by the technician still costs a lot of money in consideration of the original cost of the device. Worse even is that downtime may occur during a critical point. A little understanding of ESD phenomenon is therefore useful. Especially in modern times with computers churning away with lots of data. The fellow who walks over and touches the cabinet of your computer with 40,000 volts on his finger is really no friend of either you or your hard disk.

It is not difficult for a person or object to accumulate a static charge of 10,000 volts or more. Once the voltage reaches 10 Kv, the person or object is prone to discharge on any grounded, or ground-coupled, metallic object. The occurrence is dependent upon several factors including the magnitude of the static discharge, the path to ground and the relative humidity.

The following chart illustrates the statistical nature of the event of ESD.

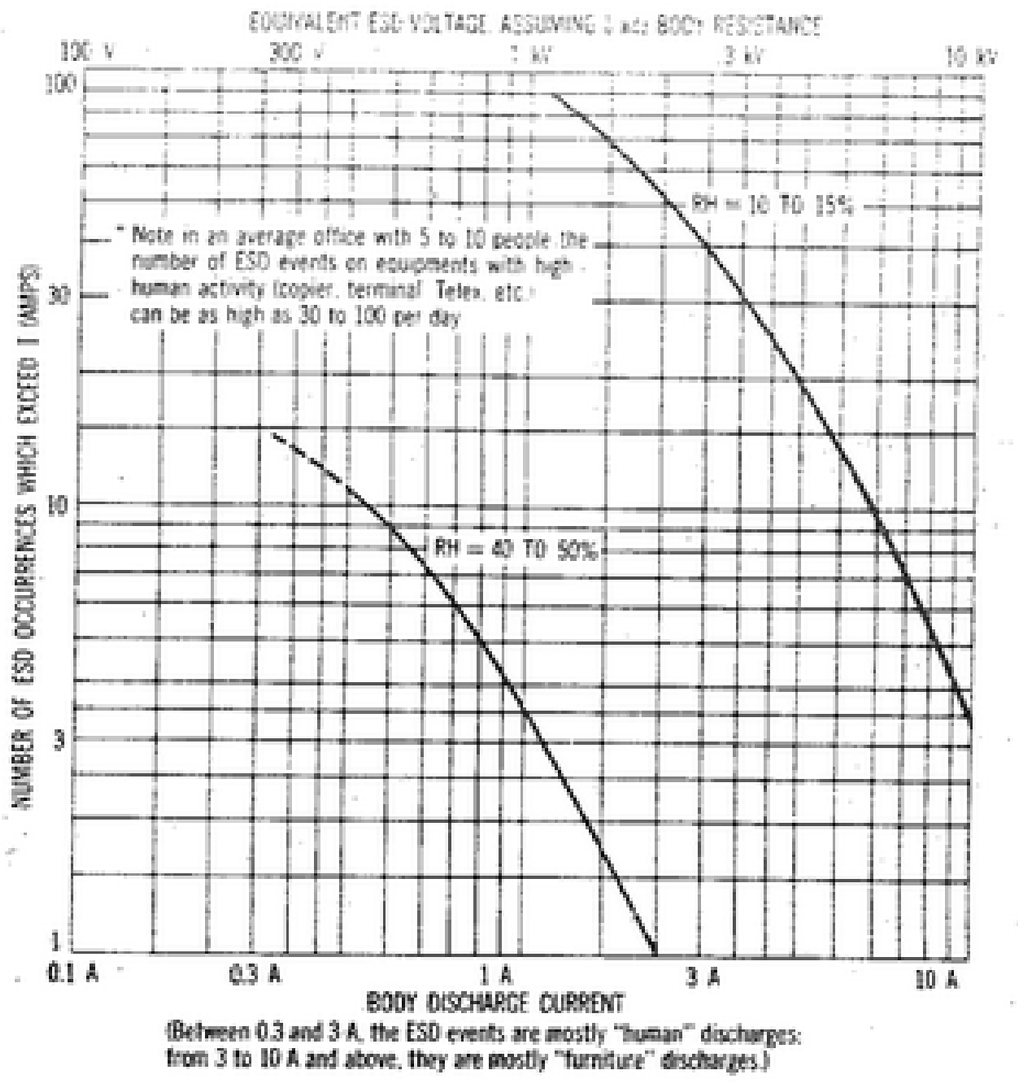


Figure 1. Examples of amplitude probability distribution for ESD currents in offices having wool or synthetic carpeting.

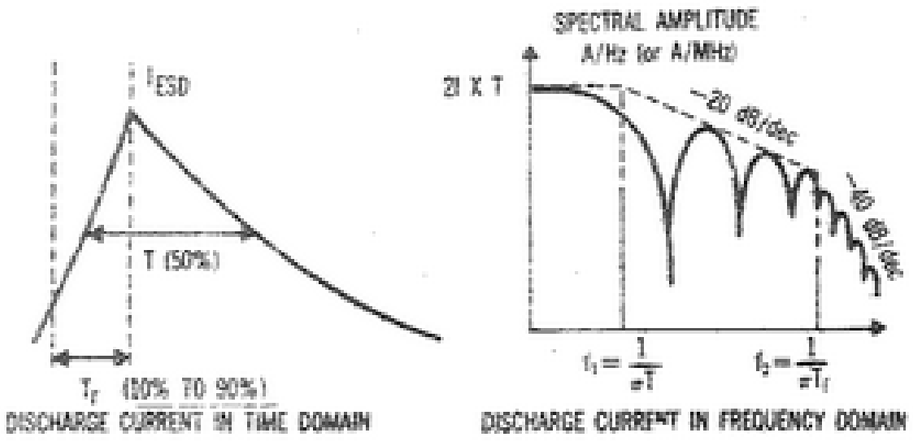
What is surprizing to me about this chart is the peak currents that turn up. In low relative humidity environments, a wool or synthetic rug can run the peak current up to over 10 amps! And I always thought that static electricity was just a lot of voltage with little current. The fact is that the average current (over time) may be infinitesimal but the peak current is substantial.

Another interesting point is that insulation is not a condition that helps eliminate static discharges, rather it helps generate static discharges. While we may learn to work with voltages in the 100 - 1000 volt range with a clear sense of isolation through insulation, the rules reverse slightly for static charges. It is a good idea to provide a low resistance (in the world of static discharge, low resistance is 1 megohm or so) to ground. ESD is aggravated by a nonconductive floor, a low Relative Humidity, and high human activity. High human activity means that the size of the charge is greater. Nonconductive floors and a low relative humidity define the discharge path and the ability of the charged object to dissipate the charge that has accumulated.

ESD Coupling Mechanism

Figure 2 illustrates some typical ESD waveforms. The data that is shown is derived from mainly empirical sources.

In looking at the chart, it is clear that metallic objects deliver higher peak ESD currents due to their lower resistance. However, for people, the rise time T_r is much shorter from 10 nanoseconds down to 1 nanosecond.



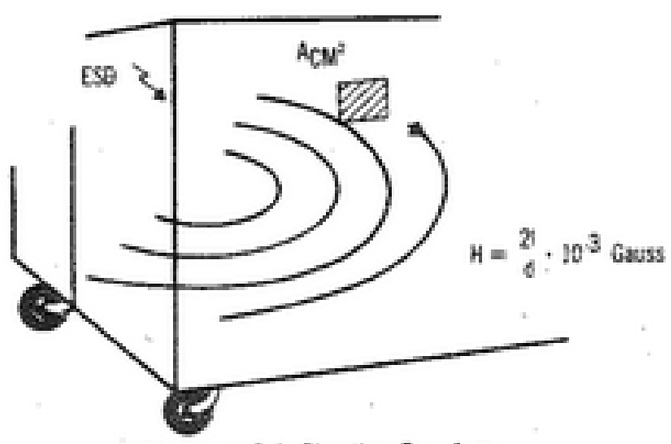
Typical Values	I_{peak}	T	T_r	$f_1 = 1$	$f_2 = 1$	2I X T
Personal ESD controlled environment (5000V and 1000Ω body resistance)	5A	150 ns	1 ns	2 MHz	≅ 300 MHz	1.5A/MHz
ESD from large metallic objects; uncontrolled environment (2500V and ≅ 50Ω of source impedance)	50A	150 ns	10 ns	2 MHz	≅ 30 MHz	15A/MHz

Figure 2. Typical ESD Waveform and Spectrum for personal ESD controlled environment and ESD from large metallic objects.

Several other factors are very interesting from the data of the chart in Figure 2. While the bulk of the signal in the frequency domain may be around 2 megahertz, it is clear that frequencies are present clear up to 300 Mhz. To obtain an understanding of what this means without a lot of mathematical derivation, every waveform can be described in two different domains, time and frequency. The time domain allows the signal to be described as to its amplitude with respect to time. The first figure in Figure 2 is an example. It shows what the amplitude of the ESD is at any particular time. But each signal also is comprised of a collection of different signals (derived either experimentally or by a Fourier analysis) and the presence of these various signals and their harmonics is described in the Frequency domain, represented by the second figure in Figure 2. To the radio amateur with a working knowledge of harmonics in transmitted signals, this is not unfamiliar stuff.

ESD can also cause logic hits in computers and other equipment. These "soft" errors can scramble the computer's little brain, especially if they occur at an inopportune time. Since these "hits" can be "induced" in a circuit without actual physical contact, they can occur, even if there is apparent insulation from path of the ESD.

This occurs because each electrostatic discharge path radiates both an E and H field. You don't need sophisticated models to get a relatively quick idea of the magnitude of induced voltages that can occur in nearby circuits.



Distance	H_{peak}	B_{peak}	Volts induced in 1 cm² loop
3 cm	24 A/m	0.3 Gauss	3 V
10 cm	8 A/m	0.1 Gauss	1 V
30 cm	2.4 A/m	0.03 Gauss	0.3 V

Figure 3. Electromagnetic field from ESD current sink (assuming that current is concentrated in a uniform path).

In Figure 3, assume that an electrostatic discharge has occurred at the point indicated and that the current travels in the path indicated by the arrow. If the current flow is considered to be uniform within the path (a simplified model, but useful for this analysis), you can simply derive the field over the rise time and calculate the open-loop voltage induced per cm^2 in a "victim" area (A_{CM^2}).

Now, assume a peak discharge current of 5 amps (typical as shown from Figure 1) and a rise time of 1 nanosecond (also a typical value). Let's say that there is a cable or a trace from a printed circuit board that is located 3 cm away from the path of the ESD discharge. By crunching a few simple numbers, it can be seen that for these typical values that a voltage can be induced in a 1 square centimeter loop that is almost 3 volts. 3 volts in a 5 volt logic circuit will cause an erroneous bit in most logic. This is especially true when you consider the frequency domain of the signal runs all the way down to and below 2 megahertz. Most CMOS circuits have response times up to 4 megs and other types of logic will accept faster rise times still.

This demonstration of the so-called "soft" error just another way that ESD can hurt your circuit design. While most RF circuits are not susceptible to this kind of soft error, ESD can do real damage to FET and other sophisticated RF devices. Even if you are not dealing with logic signals, if you check the table in Figure 3, you can see that 10 centimeters away, you can still have voltages induced of 1 volt or more depending upon the magnitude of the ESD. This could explain why linear circuits such as AGC "pop" when you walk across the floor and touch the case of your transceiver.

But considering that most RF transceivers these days are layered thick with logic circuits, it is a wonder that as many of them exist as they do and keep working.

One more diagram and chart, please. I have noticed in a lot of computer magazines and catalogs that I receive that many companies are selling and pushing shielded cables for use in computers, especially for long cable runs. While the price on these is astronomical ($30 - $50 typical), the theory is solid. Shielded cables with particular care paid to grounding are an effective tool in ESD control in the real world.

Please refer to Figure 4. It shows a typical interconnection between circuits with cables. Each "box" has a ground, therefore a voltage induced on any of the boxes will turn up on the others. These input/output cables can act as efficient pickup antennas for the ESD field radiated outside. When this happens, the induced common-mode current later is carried inside the unit by the shield leakages, pigtail braids, etc.

An effective method of combatting this problem is to simply shield the cables. Since no voltage can be induced within a shielded cage by a charge outside of the shield, the induced voltages drop drastically. The illustration shown in Figure 5 is illustrative of the kind of protection that shielding and grounding brings. Still using the typical ESD pulse we used in Figure 3, we see that grounding the shield with a 360° contact and clamping the shield directly to the cabinet will offer an infinite improvement over no shield and a measurable improvement over a drain wire ground (16 volts down to .6 volts). But you need to be careful. Too much grounding (i.e., by more than one path) could cause problems with ground loops as the different electrical

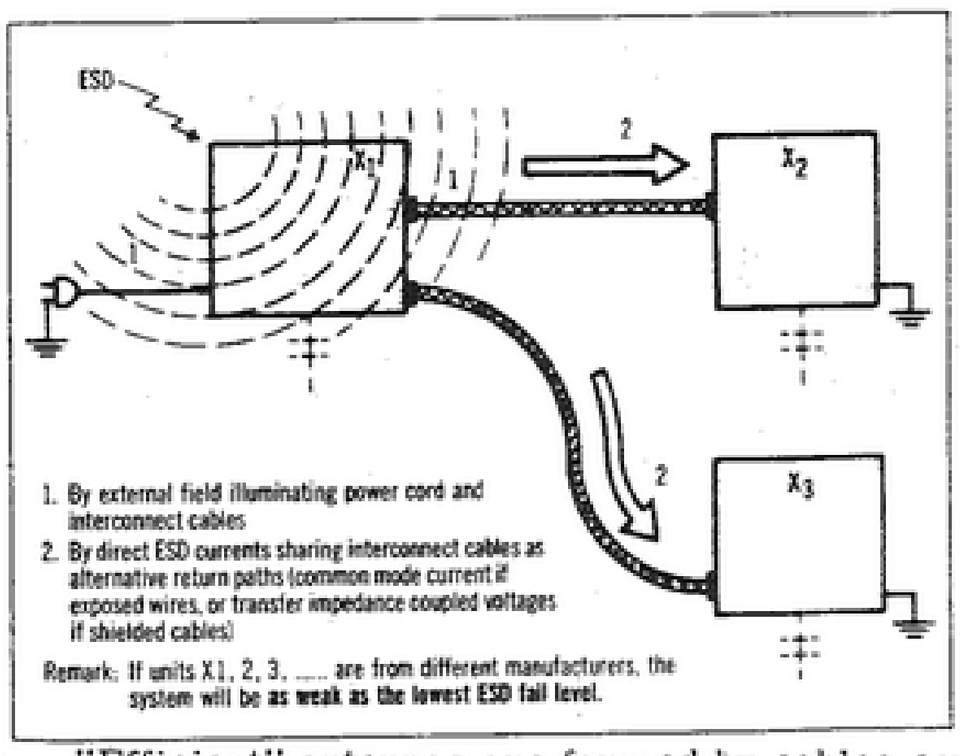


Figure 4. "Efficient" antennas are formed by cables coupled externally to "boxes."

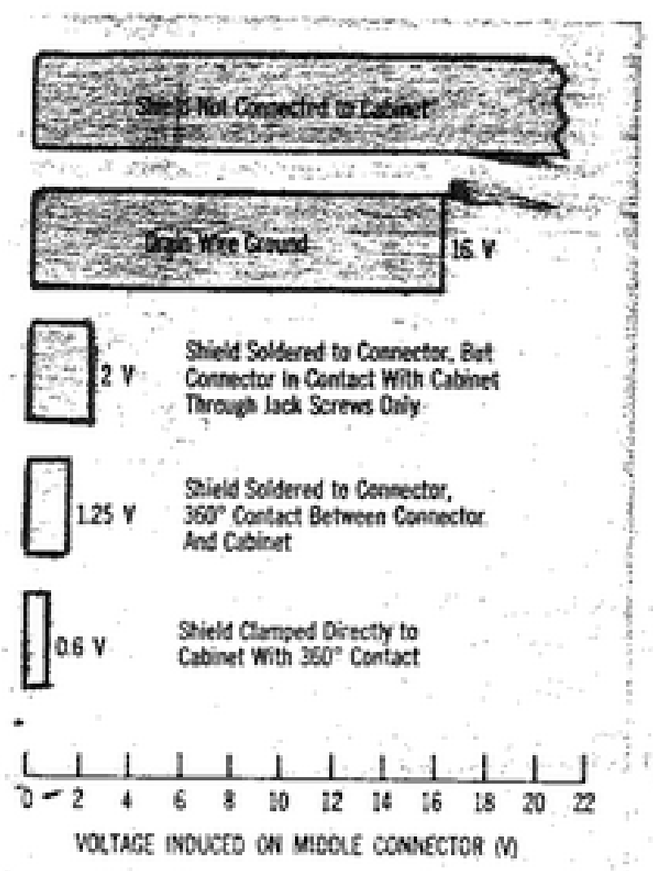


Figure 5. ESD induced voltages in external flat cables. Substantial improvement is obtained by using a shield making complete contact around the body of the connector and clamped to cabinet.

Troubleshooting ESD

When nosing around after suspecting an ESD problem, there are several things that you should look for. Some companies make "zappers" that you can use to simulate ESD. I don't necessarily advise this unless you are a manufacturer and can afford the equipment replacement (or can't afford the equipment failure in the field). I have played with a device that I bought a long time ago to remove EStatic from vinyl record called a Zerostat. This device was unique in that it generates a voltage by twisting a crystal. The voltage is then concentrated on a very sharp point and pointed in the direction of the record. By squeezing the trigger, you could build a big voltage up on the record. By slowly letting it off, you could bring the static discharge down to nothing. This device is fun to play with, but not much practical effect since the rise time and discharge current cannot be made to approximate the typical ESD.

But there are several things that you can look for when you suspect an ESD problem:

1. Improper PC board wire-wrap, cable runs, or even layout.

2. Missing or loose ground connections.

3. Uncontrolled ground-loops and parasitic capacitances

4. Improperly terminated cable shields and poor connector bonds.

5. shield discontinuities.

Shocking, to say the least.

Micheal Salem N5MS

N5MS SHACKUP CONTINUES!!
(Or "One to BEAM Up, Scotty!)

I started last month to describe the trauma that occurred when I moved from my previous location. It was traumatic from the standpoint that I wasn't sure of what to move to the new house as much as I had trouble deciding what not to move. In my travels, I had acquired many handfuls of radio equipment and deciding what stayed and what went provoked a lot of internal conflict, something which stretch my moving out over a couple of months.

One thing though was going though and that was the shack. Since I expect to live in this new house for some time, I thought that I would give a lot of thought as to how the shack would be put together. I described how the antenna system grew from a simple 20 foot pole to a Telrex triband beam on a 60 foot stick. We were able to get about 50 feet of the tower in the air over the course of a couple of weeks. I had a top section that had to be replaced, so I could not get the entire antenna up in the air. This might be helpful information to anyone who is contemplating a tower. If you intend to use a 2" mast to support the beam, make sure that you get a communication top section made by Rohn. This will allow you to use a 2" mast. The lighter top sections will only accommodate masts up to 1 3/4" and that may not be enough to get that big beam up in the air.

After a cold turkey day, the weather warmed up nicely the next week and by Saturday was almost perfect to put up last top section. I had acquired a 20 foot section of pipe that was 2" o.d. (actually, it seemed slightly less, but it fit the top section perfectly) and had sanded it and primed it with a couple of coats of Rustoleum primer and black paint. I then assembled it with the top section and on Saturday morning, Louis KD5WA and some others came over and we hauled the mast and the top section to the top of the tower in one collection. I didn't figure that there would be anyway to get the top section up and then stab the 20 foot length of steel pipe through the top. The only way was to send it up the tower in the top section. This is actually not as difficult as it sounds, but it did require a little planning and a couple of extra hands for the hoisting.

After the top section was in place, I realized that we had to do some serious thinking about how to get the beams up in the air. Fortunately, the OU/SM ballgame came up that affernoon and that was a good excuse to take a step back and look at the project a little more. The step back I took was a little far, all the way to the football stadium, but by peering from the press box, I could almost see the antenna, if I put the binoculars on it.

Later than evening, I began assembling the boom and cables. I had abandoned my earlier interest in putting up a set of stacked 8 element beams and ordered up a Cushcraft 215WB. This antenna is 15 elements on a 15 foot boom and claims 15.5 db gain and bandwidth over the entire 2 meter band. I don't really believe the gain figure, but anything over 13 would be an improvement over the two stacked 8 element antennas and that is assuming that I could trust the KLM figures, which I don't.

I had already ordered a crossboom kit, so I decided to stack the 215WB on one side and the KLM 440-27 (450 Mh z beam with 27 elements good from 420 to 450 with about 14.5 db gain or so) on the other. These would be mounted above the tribander about 10 foot or so. I surplused the 8 element antennas to my needs. Anybody need a couple of 8 element antennas, give me a call.

I consulted the Rohn book and calculated the distance I would need for cables to come down the antenna boom, over the cross boom and down the mast to just below the thrust bearing plate. It was almost 25 foot. After some consultation with the Telrex factory, I had decided to mount the rotor at the bottom of the top section. The only problem is that the Tailtwister roto would not go into tower unless it was placed before the tower section went up. It would fit if you cut the bottom cross brace off the tower. After some discussion with K5JB, I thought that it would work since the cross brace is designed to keep the tower from twisting. There is another cross brace about six inches lower on the top of the next section. Besides the rotor plate would help make up a little of the strength. Besides there would be little twisting at the top of the tower in comparison to the bottom. Rohn tower is designed to be erected all the way to 200 feet with all the resultant torque. What I was proposing was nothing and it eased the rotor installation.

On Sunday, I was up early finishing the 2 meter antenna assembly and cross-checking each assembly step. I did the same on the 450 antenna. Darrell UWA5TOO had started down to Norman to help supervise and picked up Louis KD5WA. They stopped by to get some tools and acquired Bruce who works with Darrell. Bruce is ready to take the Novice test, but simply has to work up a running start at it. Anyway, Bruce is quite good on towers and I would need some help since Louis had turned his knee a couple of days earlier.

We all set out assembling the antennas on the crossboom and Darrell and Louis started to put together the Telrex. It was at this time that I realized how big the antenna was. Certainly a lot bigger than I thought. Louis said that I would have to make a couple of trips to the hardware store and I poopawed that saying that I had planned it all out, but he was eventually right. After everything was ready, I hoisted up the tower and Bruce followed me. The first order of business was to move the gin pole up above the top section. This went fairly easy and within a couple of minutes, we were ready to pull the VHF/UHF antenna combo up. This was done by taking the gin pole rope down at about a 45 degree angle and tying it off to the front of the bumper of Darrell's truck. We then looped the ginpole rope through the mount and Darrell and Louis wrapped string around the two antennas and guided it while Bruce and I pulled it up toward the top of the tower.

I had spent some time earlier calculating the weight of the antennas so they would balance on the crossboom. While it was not more than 20 or 25 pounds for the entire assembly, when it got 60 foot in the air, it was a different story. The moment arm was 10 foot and 5 pounds of antennas swinging 5 foot away is a lot of moment. But we managed to get it clamped onto the tower and I ran the coax over to the mast, loosened the cross mount clamps and balanced the antenna a final time.

We had already let the mast down in the tower to allow us to place the crossboom and the antennas at the very top of the mast. It was locked into place with a thrust bearing. It might seem a little like overkill to use both a thrust bearing and a big rotor, but when I decided to mount the

antenna rotor at the bottom of the top section, I thought that a thrust bearing would be a good idea, if even to just stabilize the mast inside the tower. As it was, it helps do that plus hold a little bit of the weight. When we dropped the pipe into the rotor, we held it up a little bit so that the thrust bearing would bear a little of the weight of the pipe. The pipe mast and antennas all probably weigh close to 200 pounds. The deadweight capability of the rotor is over a thousand, but the turning torque of the antennas would be the key. The antenna was specced at 20 square foot of antennas when used with a thrust bearing. When top mounted, it had to be derated to 12 or so. By my calculations, I have about 15 or so square feet of antenna, well within specs. The collar sleeve of the tower section also acts as an additional protection against side forces along with the thrust bearing.

Meanwhile, back up on the tower, Bruce and I cleaned up the VHF/UHF combo while Darrell and Louis were readying the Telrex to come up the tower. This antenna weighs about 85 pounds and is almost 10 square foot of antenna when in the air. The moment arms are 13 foot either side of the mount with 36 foot elements at the ends. I knew that I would not be able to pull the antenna up with the rope, so we put Louis on the other side of the ginpole. The antenna was also so heavy, that I knew that there would be no way to hoist it into place on the mast without the ginpole's assistance. About this time, Roger WA5JXX and Chas KA5UPM showed up and were immediately assigned the "wing" flight to guide the antenna up with string on the elements. We started hoisting away and after getting it past a couple of guy wires and the packet antenna that I had mounted about 40 foot up the tower, it was relatively smooth sailing to the top. What a hoss! It was about all I and Bruce could do to hold the thing in place. And what amazes me is that people put up bigger antennas than this all the time. I was amazed also at how the mount was made. It was quarter inch stainless steel formed into a square with holes and mounting straps all formed and ready to mount to a 2 " mast. I thought that was awfully heavy for an antenna, but after socking it into place, I wasn't so sure. After tightning the antenna in place, I could detect a slight bow in the stainless plate. And I wondered if the bolts were strong enough.

It took about 45 minutes to get all the hardware in place and tight. It was just starting to get dark as I started down the tower. I had to finish wrapping all the cable runs. Some of these had been done on the ground. We used a technique to wrap to assure that the cables won't go flapping in the breeze. The first layer of tape was nylon strapping tape to ensure that the cable remains firmly snugged to the mast. Then a layer of black electrical tape was installed to keep sunlight off of the nylon tape and waterproof it. After these two layers, the whole thing was covered with aluminum tape to keep sunlight and moisture off of the two other layers and for strength. All the VHF/UHF connectors were Type "N" with the exception of the HF triband which is a UHF PL 259. All connectors were wrapped with the black gummy weather wrap, then covered with black tape before being painted with a gummy sealant. I have used this method before on the repeater and come back a couple of years later to cut off the protective weathering to find the connector still looks and shines like new.

By this time, everybody was getting a little tired and it seemed like a lot had been accomplished. Besides, I was hungry. Everybody else bowed out, but Darrell & I went went to a local restaurant for dinner. During the course of the evening, Darrell kept wondering what the antenna would do and suggested that we put up a run of cable to check it. "In the dark?" Well, I don't mind if you don't. I arranged the light to shine up the tower. By now, the wind had a little shift, but it was still not too cold. I put on a coat and went back up the tower about 8:30 p. m. We hoisted some half inch hardline and a run of RG8A/U along with the rotor cable into place. I loosened the antenna and pointed it as best I could toward the south. It was a lot to turn. After dressing up the cable runs, I came down and hooked up the rotor cable, then wired all the cables to the tower about every 10 foot down the tower.

Back on the ground, Darrell prepared the other end of the half-inch hardline to connect to the bulkhead connector I had fitted up under the eave. He also wired up a connector for the two meter antenna. I had already laid out a couple of runs of cable from the shack to the eave of the roof. We went inside and connected up the rotor. Oops, blew a fuse. After studying the manual, I figured that I had swapped the wires about 180 degrees. A quick swap and everything seemed fine. But here was another problem. The rotor would only go toward the north and then bind up. Couldn't figure out what the problem was. That is, until the next morning when I woke up and remembered that we had left the gin pole in place. I worried that we might have garbaged the balum, but the only place of contact was on the boom. It definitely stopped the rotor in its tracks. I went up the tower on monday evening and took down the ginpole.

There was also a problem with the SWR. It was terrible all across 20 meters and not particularly exciting on 15 and 10. I could not see taking the antenna down. A problem was that my Mirage HF wattmeter was on the fritz apparently not having made the trip to the new location. So, we had to use the wattmeter and SWR meter inside the IC-751 and it is only a compromise. After changing cable length on the antenna later in the week did I figure that the odd multiple of a quarter wave was screwing up the SWR readings. About 3 foot of cable and the repair of the Mirage (it was a dirty switch) brought the meter indications to more normal proportions. The antenna still needs a little pruning, but can be brought under 2.5 to one all across the bands except 10 meters.

The 2 meter antenna works well. 3 watts from an IC-2AT will allow me to key and work Stillwater's 145.35 repeater. I can still work it with only a couple of hundred milliwatts on low power. The Chandler repeater is also easily accessible. I haven't fiddled much more than that. The UHF Antenna is still waiting for some half inch hardline before going operational.

So far, so good, but a lot of work is left. I need to wait for the ground to defrost so I can put down the ground rods. Still have to get the bulkhead connectors on the cable and lightning arrestors in place. But so far, so good.

Micheal Salem N5MS

FOR SALE. I surplussed the KLM 2M-8 elements beams so here is your chance to pick them up at KLM price's and I will absorb the shipping. These are specced at 10.8 db gain and are broadband across the entire band with a balanced feed. Will mount on an 1 1/2 " mast which is one reason I didn't use them. $50.00 each. Also have a Rohn top section for $60.00. 366-1234 or 321-5453. Micheal Salem N5MS

Edmond Amateur Radio Club
P.O. Box 75252 / Okla. City, Ok. 73147

I was listening to 75 meters the other night, and heard numerous references to an ad in the November, 1985 edition of QST.

Here's the ad, apparently a paid classified, from page 180:

"'LAMBDA NET' club for gay hams with members nationwide and Canada. On-air skeds and newsletter. For info write Jim, KK3K, POB 24810, Phila., PA 19130."

After hearing the ad read on the air, one comment made in jest from a 4-lander was, "Well, that does it. I'm not talkin' to no more 3's." Another said "Or no more Canadians."

Now, I saw the ad back in October, when I received my November issue, and read it with disbelief, then disgust, then with a chuckle. My emotions are still mixed on the subject.

I've grown up believing that grown-ups of the same sex shouldn't skip down the rosy paths of life together. But yes, Virginia, there are obviously people who disagree with me. I don't have to like it, but apparently I should accept its existence.

Perhaps the thing that infuriates me the most is that my little innocent hobby (I hate to use that word) of amateur radio must have a few sweethearts in it.

On the other hand, what if the whole thing is one giant put-on? Could this be someone's idea to stir the sleeping hobby's (there I go again) nest of hornets? It just may be one of the best things to come along since incentive licensing-something to talk about. More people talking and listening means more participation, something amateur radio sorely needs.

It may be a clever way for the ARRL to check its readership. After all, now that Wayne Green's gone from 73 Magazine, who's left to mess with our proud minds?

In any case, I'd hate to be KK3K (a valid callsign). No matter how the barb was thrown, he might have a cross burned on his lawn for this one. I'm sure we haven't heard the last of it.

Whatever you do, don't thpeak with a lithp or hith your esseths on theventy-five meterth!

--Mark WD5DYI--

ANOTHER PARADE

Edmond Amateur Radio Club's members were out in force again the day after Thanksgiving to provide staging and communication for the Downtown Christmas Parade in Oklahoma City.

The parade was staged on the north and south sides of One Bell Central, the old Central High School. Entries were fed southbound onto Robinson, past Leadership Square, where the reviewing stand was located. From there, the parade continued south to Sheridan, east to Broadway and north to Kerr Park.

It was a cold, drizzly morning and afternoon in the downtown area that day. Stan Van Nort, WB5UIY, who was the Parade Marshall, was his typical organized self, having a full list of all participants and their entry numbers. He brought barracades for the streets to close and pylons to number and place entries.

Approximately 50 entries participated, although many more were scheduled to appear. The bad weather forced many to stay at home.

The change in number of entries required shuffling of other entries into proper position. A separate frequency was used to relay changes in parade order to the reviewing stand.

Amateurs participating were: KB5BS, WA5BQX, N5DWT, WD5DYI, K5GL, N5HIP, N5HIR, WB5ISO, W5NZS, WB5UIY. The club also had help from Lloyd Smithson and Bob Delaughter, two parade staging veterans who have helped many times before.

Amateurs have participated in the past for this parade, but this year was the first for EARC official club involvement. The club also officially participates in the annual 4th of July Parade, held on Classen Boulevard in Oklahoma City.

Texas authorities have asked readers to be on the lookout for the following man, wearing:

* Brown paper hat
* Brown paper shirt
* Brown paper pants
* Brown paper boots

He's wanted for rustling.

WA5BQX: "Jack, didn't you used to have another parrot?"
N5DWT: "Yeah, I did. He was real smart, too. He could talk just like you and me...but I had to sell him."
WA5BQX: "How come?"
N5DWT: "Well, I made the mistake of leaving the rig on one night and he learned static."

TO: EARC Membership
FROM: Mark Northcutt
DATE: December 16, 1985

It's been ten years, and some thanks are in order:

Speaking on behalf of the Board of Directors of EARC, I thank our members for their continuing support, sometimes above and beyond normal expectations. The support shown has kept the club at the forefront of amateur radio VHF and UHF communication.

We've gone from a single repeater to a system of three. Of these, two have state-of-the-art control systems which for the most part were undreamed of ten years ago. Our coverage areas, reliability and audio quality have greatly improved over the years, and I believe unmatched in the state.

Our participation in the Teleconference Radio Network was a pioneering step to keep amateurs of central Oklahoma more informed on technical subjects. Next year, we begin phase two of this project -- the Metroplex Network. Amateur-related news and information will be fed via satellite on a weekly basis, and will be heard on the 147.030 machine Monday evenings.

Over the past ten years, and especially now with our emergency autodialing capabilities, our repeaters have provided countless help for fellow hams and the general public. In one instance, Civil Defense officials were kept appraised of flooding and river conditions during a record rainfall. In another, our autopatch was used to contact families of Air Force troops camped on a training exercise. Calls were placed all over the United States.

Many times, inbound hams have been able to contact awaiting friends and families for directions and reassuring progress reports; unfortunate victims of traffic accidents have called home for assistance; and the public has been exposed to a demonstration of amateur radio in action.

Our club can't make our progress possible without facilities and a site. We are extremely fortunate to have the devout sponsorship of two outstanding broadcast facilities, both of which have given and given and demanded nothing in return.

KOCO-TV, Channel 5, on whose tower our equipment resides, has provided excellent sites for all our antennas. Our coverage area could not be what it is today without the cooperation of Chief Engineer Ted Newcomb, W5MMG. Ted understands

all the angles from both sides of the communications fence. He is a valued member of EARC (even though you need to get on the air once in a while, Ted!).

Thanks go also to the staff and management of radio station KOFM in Oklahoma City. KOFM is located at the base of the TV tower, and provides a working environment for our trustee, who is the Chief Engineer. KOFM's audio production studio has been used for the audio shaping and control point for our Teleconference Radio Nets. KOFM's satellite receiver system has been used for rebroadcast of the Space Shuttle missions. Also, special thanks to Mr. Mike Colello, VP & General Manager of Guy Gannett Broadcasting and KOFM for letting Dennis tinker with our systems from time to time while on the job.

Perhaps the continuing theme here is the consistency of quality. Quality comes from continued support, innovative ideas, and the technical know-how to keep it going. In that respect, the club owes a tremendous thanks to our trustee of the last ten years, Dennis Orcutt, WB5ISN.

Dennis is a master at audio conditioning and maintenance of RF equipment. He has served not only our club, but has assisted others all over town in troubleshooting and repair. He can sometimes be found hanging out of the tower, 1400 feet above ground, adjusting an antenna. He jumps headlong into a blown power supply and it's working in no-time. His construction projects continually win the Fred Sanford Award for Neatness, but they work. He can set receiver sensitivity with the best of 'em. And, although he can ruffle a few feathers from time to time, he can also work like crazy to smooth them. We're proud of you, Dennis.

Other names come to mind now, also: Deeds Bigelow, Wendell Cochran, Larry Marks, Larry Dillard, Ron Cron, Joe Buswell, Mike Salem, Martin Vinson and I'm sure many more of which I'm not aware who come up with equipment, parts and all kinds of assistance when called upon. Thank you sincerely, gentlemen.

As we begin a new year and a new decade in the club, I hope we can all devote a little more time to our service. I know spare time is valuable and sparse. It is a problem which faces not only our club, but others as well.

As a new year's resolution, try to use our repeaters more. Many of of you haven't tried-out our features on the controllers. Make it a personal challenge to learn something new about them. Check-in while going to or from work. Don't just listen -- participate!

Have a great 1986, and here's to the best for the club for many more years to come. Thanks. Mark, WD5DYI

CHILI & STEW FOR CHRISTMAS?

Christmas parties are a tradition all over the world, but Edmond Amateur Radio Club's Christmas Chili and Stew Dinner is a rather non-traditional tradition.

In a real break from turkey, ham, candy canes and egg nog, the club's bizarre ritual is a real hit with the membership.

Tradition calls for the stew to be made by Deeds and Marge Bigelow, and the chili to be brought by Stan and Annette Van Nort. Everyone else brings the trimmings for the feast.

Over 25 pounds of chili meat went into the fixin's this year. Stan's source of chili is outstanding, and Deed's stew is definitely something to write home about.

Finale to the dinner was an assortment of good, fattening desserts.

Thanks to those who participated with all the goodies, and to those members who missed it, remember us next year (burp)!

KENWOOD TALKIE MODS

Owners of the newer Kenwood TR-2600/3600 series and TH21/41 series radios have built-in PTT hang times for the tone pads.

This feature is convenient, up to a point. If the amateur dials quickly, the hang time seems incredibly long. The computer controllers around town can accept tones as fast as they can be sent, and it's a bit uncomfortable to wait on the transmitter to unkey for the voice response.

On the 2600, Kenwood recommends changing the value of capacitor C86 on the RX Unit. The 3600 can be modified with the same change on capacitor C202 on the RX Unit.

With the TH Series radios, Kenwood says to try changing the value of capacitor C2 on the DTMF Unit.

Those brave at heart may plunge headlong into the tightly spaced circuit boards and shorten that hang time considerably.

The girlfriend asked the ham if there was a difference between his CW and telegraphy:

The ham replied, "Well, if you had a very long dog, reaching from New York to Chicago, and you stepped on its tail in New York, it would bark in Chicago. That's telegraphy; and CW is precisely the same, only without the dog."

SOME HIGHLIGHTS IN THE LIFE OF Q. R. ZEDD

August 1975	Born on DXpedition to Tibet; his father, Zepp Zedd, killed; Momma Zedd works 15K with hand key.
October 1930	DXpedition to the Congo. Works SK, CW.
September 1933	Starts grade school. Licensed to operate ham bands in 11 nations.
June 1935	DXpedition to Guatemala.
June 1936	Triumphant tour of Europe after finishing grade school in record time and patenting improvements in pentode design. Meets Hitler, calls him a nerd.
June 1939	Completes high school at age 12. Begins work on inventing radar.
July 1940	Works Winston Churchill, who then allows his license to lapse
September 1940	Demonstrates radar. Begins top secret research for government which remains classified to this day.
September 1945	Finishes work on SSB. Invents plastic milk bottle. Triumphant DX tour of 44 countries.
January 1946	Begins college.
April 1947	Named All-American in basketball. (First of three straight years.)
August 1947	Named All-American in baseball. (First of three straight years)
December 1947	Named All-American in football. (First of three straihgt years)
June 1950	Graduates from college with several degrees. Begins pro career with Chicago Bears. Later turns down lucrative contract with New York Yankees.
March 1951	Special advisor to the White House on communications. Reorganizes the FCC. Perfects industry standard color TV. Wins world trophy in ballroom dancing.
January 1953	Retires a multi-millionaire. Buys land for Honor Roll Ranch just a hoot and a holler south of town.
February 1953	First antenna completed at Honor Roll: a small rhombic mounted on rebuilt railroad roundhouse mechanism.
July 1954	DXpedition to the artic.
November 1954	DXpedition to the south seas.
March 1955	Ranch house completed at Honor Roll. He works all stations, all bands, all modes, and wins Nobel Prize for research into sunspots and their effects on DXing.
July 1956	DXpedition to all Africa.
June 1957	Married Philomena Brock.
July 1959	Marriage ends in divorce; Philomena says it was never consumated. Zrdd's lawyer agrues that he was too busy chasing DX. (Philomena later weds a CBer, getting what she deserved.)
March 1961	DXpedition to Bangladesh.
October 1963	DXpedition to Tibet. Wins Legion of Merit from grateful government of France.
April 1965	Breaks off romance with Ginger Rogers; seen with Elizabeth Taylor, etc.
September 1967	Helps Sperry Corp. get big computer up and running. Straightens out several other large corporations.
May 1968	Declines offer to take over ARRL. Invents the video game.
June 1969	DXpedition to Africa. Faces down savage lion in Kenya.
July 1971	Erects first "decent" tower at Honor Roll; 1955 feet; condemned by Airline Pilots Association.
February 1972	Completes construction of undersea cable to feed listening antennas in Africa
August 1973	Finishes work on Pauls Valley to Wichita KS, longwire. Pronounces it good.
January 1974	DXpedition to the Artic; survives by huddling over warmth of 6146s and eating sled dogs.
July 1976	Works all 50 states in fifteen minutes as part of national bicentennial observances.
December 1977	Gets the Yodar Kritch; invents Plymouth gin.
March 1978	Launches his first private satellite, the Carp-1, but its batteries faill after four days
June 1979	Meets Tondelayo, then 17, takes her to Ham Holiday, starting rumors.
March 1980	Launches his second ham satellite, the Zedd-1, still performing flawlessly from geosynchrounous orbit.
August 1981	Zedd bests Bill Blast in rf duel to be the greatest DXer.
November 1981	DXpedition from Mt. Williams.
June 1982	Fries DX hog with rf. Given nations first modern call sign, A5A.
January 1983	DXpedition to Tibet, etc.
June 1983	Almost marries Tondelayo; goes to Vietnam instead.
November 1984	Beats hell out of Boris Badenov Soviet DX ace, in special competition; Badenov picked up by KGB.
March 1985	Works from all countries on the DXCC list in a 30-day period, flying a private plane of his own design.
December 1985	Sails from Great Britain on the way to activate the lost continent of Atlantis.

Child's definition of an adult: "someone who's stopped growing—except in the middle."

•

The museum visitor spotted a picture of a group of men sitting around a table. All wore long hair, stretch pants, boots and fancy jackets.

They were signing the Declaration of Independence.

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Two philosophers were engaged in a deep discussion as to where the sun goes when it sets. They pondered the enigma all through the night—then it dawned on them.

•

Billy and Patty each had an apple. "Let's play Adam and Eve," Billy suggested.

"How do you play that?"

"You tempt me to eat your apple—and I'll give in."

Tourist: person who travels a thousand or more miles to have his picture snapped beside his car, then doesn't remember where it was taken.

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PUNishment

BACCARAT: put your money on a rodent.

BELIEVING: what good guests will be doing before it gets too late.

HUMBUG: mosquito.

KINDRED: aversion to family reunions.

NITRIC: Halloween caper.

POLITICS: parrot after it has swallowed a watch.

PREDICATE: attractive feline.

SENILE: take a trip to Egypt.

STAR TREK: begin accident.

TRANSACT: hypnotist's thing.

•

A lot of people can't handle prosperity—but then, most people don't have to.

HAM HAPPENINGS

REFER TO CLUB SECTION FOR SPECIFICS

SUN	MON	TUE	WED	THU	FRI	SAT
The managing editor assumes no responsibility for the data contained herein.			1 New Year's Day	Aeronautical 2	3	4
5	6	MORI Great Plains 7	8	ALTUS AREA CP/M 9	10	COCO SCARS ARDMORE 11
Wheatstraw MEETS IN EL RENO 12	13	76'ers OU OIDAK 14	15	KAY County 16	17	VHF Club 18
QCWA 19	VE EXAM RED CROSS BLDG. 6:00 PM 20	AUTOPATCH 21	22	23	24	25
26	CIMARRON COLLECTOR - EMITTER 27	CORA 28	29	30 31	JANUARY	

RACES RDF Successful

"There is interference on the repeater and it's occurring exactly every 2 1/2 minutes"--

This was a landline report to me at the Oklahoma Civil Defense EOC at the state capitol in Oklahoma City. The bearer of this delightful tidbit of good (?) news was W.C. "Charlie" Green, jr., WA5JGU and our state-wide RACES radio officer.

Though an amateur radio operator, I do not count myself among the more gifted, knowledgeable, technical, etc., who practice our hobby. Actually, I also had heard interference that morning, but I ignored it, in hope the pesky thing would go away.

I assured Charlie I'd take care of it-- Actually, I immediately stepped into the Comm Room, and told Ken Fields--K5VFN and state communications officer for Civil Defense--what Charlie had said.

Ken broke out the spectrum analyzer and our beam antenna in order to determine the strongest signal was on a bearing of 210° relative to the EOC. That's great! What of the range?

Other radio amateurs have been on the problem, unknown to us at the time.

We're talking about the K5VFN RACES repeater operating on 145.41 MHz "down six" (isn't that the way to say it?).

Later, Charlie, WA5JGU, contacted Joe Buswell, K5JB, who received his strongest signal on a path which intersected the previous beam near NE 23 & Lincoln Blvd.-- Ah-Ha! The state capitol complex! Gene Nailon, K5DLE, also showed a strong signal near NE 13 & Lincoln while he was mobile.

ENTER THE HEAVIES

Charlie, WA5JGU, and Larry Watson W5EIU, decided to work closer. Late one evening they concluded their search at the capitol complex, having determined the signal was coming from the state library, or the Department of Transportation building.

Ken, K5VFN, was notified. He contacted the D.O.T., and found

THE CULPRIT.

Technicians at the D.O.T. fired up their spectrum analyzer and found a strong signal apparently coming from their radio shop area. They found the signal from a GE Phoenix wideband transmitter on the roof. It's a device for water/ice detection on the interstate highways. They corrected the problem by lowering the power output and installing a duplex cavity on the output. They are replacing the transmitter to eliminate future problems.

To all concerned in this project the Oklahoma Civil Defense Agency extends our appreciation.

Jack W. Muse, WB5ZKZ
Sr. Operations Officer
Oklahoma Civil Defense

You can do it better than anyone else . . . read your own handwriting.

No man is too big to be courteous, but some are too little . . i.e., Don't tune up on a QSO.