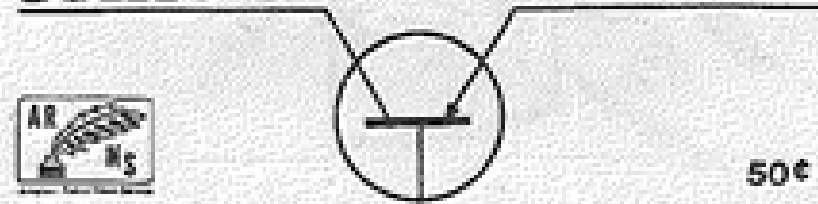


SECOND CLASS MAIL Postmaster, see page 3

CENTRAL OKLAHOMA RADIO AMATEURS  
**COLLECTOR AND EMITTER**



Vol. 11 NOVEMBER 1985 No. 130

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**THE BIG SIGNAL**  
OKLAHOMA CITY AUTOPATCH  
ASSOCIATION, INC.

MID-OKLAHOMA REPEATER, INC.



**OIDAR** OKLAHOMA INDEPENDENT  
AMATEUR RADIO

DEAR C&E ED: A POX UPON YOUR LOWER CASE. FROM NOW ON, I INSIST I WILL WRITE THIS COLUMN IN CAPS. IF YOU THINK YOU MUST RE-TYPE IT INTO DIFFERENT FORM, THEN PLEASE DO SO. I'M TIRED OF CORRECTING ALL MY LOWER-CASE ERRORS.

THE SKED: OUR NOVEMBER MEETING WILL BE HELD AT ITS USUAL TIME AND PLACE FOR A CHANGE. THE TIME IS 7:30 TUESDAY, NOVEMBER 19. THE PLACE IS THE POLICE AND FIRE TRAINING CENTER, 800 NORTH PORTLAND. PROGRAM WILL BE PRESENTED BY GEORGE, AD1S.

THE NEWS: AT THE OCTOBER EXEC MEETING, TWO IMPORTANT ITEMS WERE VOTED BY THOSE PRESENT: 1. TO RE-AFFIRM THE PROGRAMS AND GOALS SET BY FORMER PRES JERRY, NSGVP, AND 2. TO FOLLOW A DIFFERENT CLUB MEETING FORMAT. IN THE FUTURE, CLUB MEMBERSHIP MEETINGS WILL CONSIST OF A PROGRAM FOLLOWED BY A "HEARING" CONDUCTED BY THE MEMBERS OF THE EXECUTIVE COMMITTEE.

THE REASON FOR THE CHANGE IN MEETING FORMAT IS TO TRY TO MAKE OUR CLUB MEETINGS A LITTLE MORE PLEASANT. IT'S NO GREAT FUN TO SIT THROUGH A LOT OF ENDLESS BLATHER JUST TO SEE THE PROGRAM.

THOSE MEMBERS WHO HAVE BUSINESS TO DISCUSS MAY DO SO AFTER THE PROGRAM AND A SHORT BREAK.

THE NEXT MEETING OF THE EXECUTIVE COMMITTEE WILL BE THURSDAY, NOV. 14 AT 6 PM IN THE OFFICES OF OUR SEC'Y, CHARLES, NSFMU, AT BAPTIST MEDICAL CENTER. THOSE WISHING TO ATTEND SHOULD ENTER THE MAIN EAST ENTRANCE OF THE HOSPITAL ON THE UPPER PARKING LEVEL. TALK-IN ON 146.82.

THE OCTOBER MEETING: WHAT HAPPENED? WE HAD ARRANGED TO USE THE AUDITORIUM AT THE FAA CENTER. ON THE DAY OF THE MEETING, WORD WAS PASSED TO SOMEONE IN OUR CLUB THAT THE AUDITORIUM WOULD NOT BE AVAILABLE. THE DECISION WAS MADE TO CANCEL THE MEETING. YOUR PRESIDENT KNEW NOTHING OF THESE EVENTS UNTIL ABOUT 5 PM WHEN A DISCUSSION OF THE CANCELLATION WAS HEARD ON 82.

NEXT REGULARLY SCHEDULED WX MEETING IS SET FOR THE 3RD TUESDAY IN FEBRUARY.

ONE MORE THING: IN THE OCTOBER COLUMN I ALLUDED TO A FAVOR DONE FOR US BY THE FCC IN PART 97.84. WHAT THEY DID WAS REMOVE THE REQUIREMENT THAT WE

\*\*\*\*\*  
ATTENTION ALL MORI MEMBERS!!  
THE ELECTION OF CLUB OFFICIALS  
WILL BE HELD ON TUESDAY, 5 NOV.  
\*\*\*\*\*

Hi-lites of last meeting:  
The biggest news of the night was the favorable vote to purchase a new controller for the 146.34/.94 repeater (W5YTI). Specifically, an Advanced Computer Controls model RC-85. This controller is a simplified version of the RC-850, which is the type that is currently on the 146.07/.67 machine (K5ELL). Soon, our "well-mannered" repeater will be added to the ranks of OKC's talking repeaters. Can we handle another talking machine? Hi.

Some observant people had noticed that their signal strength received from the 146.07/.67 machine had decreased lately---Merwin, K5ELL informed us that the current output was 21 watts, (normally 50W) and he solicited volunteers to go up the "little" tower to assist with the needed repairs. (Anyone want to watch the clouds---from above??) The transmit antenna is at 530 feet, and the receive is perched at approx. 790. (After the meeting, I said I'd go up---once!)(Does anyone have a parachute I can borrow?) If anyone else is interested in acquiring a fear of heights, please contact Merwin.

Thanks to Tim, KASMUG for his informative presentation on satellite TV.....we learned a lot!

Mike, KASTSD

USE THE OTHER STATION'S CALL SIGN. THIS PRACTICE IS PROBABLY HABITUAL FOR A LOT OF OLD-TIMERS, BUT A NUMBER OF NEWCOMERS ARE ALSO PICKING IT UP. TRY SIGNING OFF WITH ONLY YOUR CALL NEXT TIME. IT FEELS GOOD. ALSO, THERE IS ABSOLUTELY NO NEED TO USE THE REPEATER CALL WHEN USING THE PATCH OR ANY OTHER FEATURE ON ANY REPEATER. JUST YOUR CALL, PLEASE. TRY IT - YOU'LL LIKE IT.

REMEMBER THE "OFF" SWITCH,  
73 DE NDSM

**PONCA PACKET DIGIPEATER** - Biz reports the WD0HCO digipeater will soon be going up with mucho power on 145.01 MHz. This should provide an excellent packet link between Ponca, Enid, Oklahoma City and Wichita. Biz is encouraging other Oklahoma hams to follow Kansas and Texas amateurs to the 145.01 national packet frequency. He's also working on an Apple-based packet BBS which will be accessible thru the DP. Packeteers who want more details on the new DP can write Biz Wichy WD0HCO, 2100 N. Union St., Apt. 1310, Ponca City 74601.

**OIDAR V.E.s WANTED** - The club is looking into become an accredited volunteer examination group. The main emphasis will be on upgrading new Novices from our training program to at least Technician class. To be on the team which will examine folks for Tech, you need to hold an Advanced or Extra class license. Volunteers and alternates are needed - Glen KASPB or Dave WNSLUI will fix you up with the paperwork necessary for you to be accredited. Novice class alternate volunteers are also still needed.

The volunteer exam at the August OIDAR swapfest at Ponca City airport, given by members of Tulsa ARC, resulted in upgrades for Debbie KASWBX and Phil KA2QIP. And that's Whiskey Bravo Xray - don't forget it, or you'll hear about it, folks.

**NEW SITE FOR .31** - The receive and transmit sites for the 145.31 repeater have been swapped. The OE receiver and Lunar preamp seem to be cooking in alright at Taco's tower, and receive coverage is improved somewhat. For now, 145.23 in Blackwell remains the same, and the link continues to function pretty smoothly. *Foreigners, please note*, .23 has a heavy-duty kerschunk filter on it, so if nobody has used that input for several minutes, you need to key down for a few seconds to "wake it up". If it has been active with audio from the Ponca .31 link, you will still need to wake it up if nobody has been going in thru the Blackwell input.

**WANTS** - Biz WD0HCO is looking for a 304TH power triode tube. If you have such, call Biz between 9 a.m. and 4 p.m. at (405) 767-2532. • Glen KASPB is looking for 432/435 MHz multimode equipment, either for buy or trade. He has an IC-251A to trade and is ready to deal. (405) 767-1031.

• The DUB is looking for an ICOM 22U or similar BCD-controlled 2m radio for the Dot Zero remote base. NSDUB, Box 3094, Edmond OK 73083.

**NEXT OIDAR MEETING** is Tuesday evening, November 12th, at the Southwestern Bell offices in Ponca City, 7:00 p.m. Plans for the Christmas dinner will be finalized at this meeting. Hope to see ya there. 73 - Doug - NSDUB



The meeting of the Aeronautical Center Amateur Radio Club was called to order at 7:30 pm by Jack, WB5SVN. We had a round of introductions, there were 18 members present, most of them alive. Tom, K5LDI gave the CORA report, this was followed by about an hour of discussion about CORA and HAM HOLIDAY. This club is ready to do its part at Ham Holiday provided we are given the chance and have some say so as to what we do.

Bob, WA5CJG gave the treasurers report and accepted dues from some members present. Bob also reported that all those members taht are not current with their dues will be dropped from the roles, so if you think you are out of date on your dues check with Bob and get current, we want you to remain a member of ACARC.

A report was made on the repeater antenna problems and all the emmbers of ACARC would like to thank Bob Helms, AF5Z and Jearold Wolf (not a ham yet but trying) for their work at the top of the tower. This was a 15 minute project that took three hours, the reason was that the antenna had to be pulled down and repaired on the ground. Of course there were a few ground personnel helping out but all of us were too chicken to gc up the tower, so again, thanks to Bob and Jearold for a hard job well done.

Jack, WB5SVN asked if anyone would like to be on the nominating committee to get a slate of officerd for 1986, the room filled with bowed heads and shut mouths, as it always does. Then we discussed the problem for a while, then Carl, W5JJ made a motion to change the constitution to allow the club to go back to only two officers, a President and Secretary/Treasurer and give the president the power to appoint other members to help run the club. This motion was seconded by Ralph, W5AA. More discussions followed and the motion was changed to state that the two elected officers of the club had to be active FAA employees. The motion was voted on and passed with no opposition.

The December dinner was discussed and the club asked Howard, W5NSW to try to locate a place to have the dinner and make reservations, and Howard said he would do his best, thanks Howard.

With no further business to conduct and no formal program



President Marvin WASJHB said that it has been 3 or 4 months since he has seen a Wheatstraw article in the C & E. He said that he would see one this month or else, so here it is. Hello Marvin.

We lost a good member of the club since the last meeting when Fred Van Wicklen WASFFE passed away late in Sept after a couple weeks in poor health.

It was decided that we schedule a work day at the repeater site on Oct 19 for some general clean up type details, such as check for loose antenna fittings and brackets and tighten loose guy wires etc.

The Christmas Party was discussed. Also it was mentioned that next month will be nominations for the railroa--- er that is for the new officers for next year. Be there or be nominated. The meeting was adjurned to the water melons that Perry W5MGZ provided. He sure knows how to tell which ones are the best.

Since it has been a while since the last article got printed, I might mention that the Sept meeting was not held since the club went to Jet to the Great Plains A.R.C. hamfest on the shores of the Great Salt Lake. We had a good time there.

The August meeting was held at Canton Lake where had an attendance of a little over 50 counting guests from several clubs in the north and northwest parts of the state.

It was reported that Bus W5VVU the head teacher of the Wheatstraw Radio School is working with several towards upgradeing. It was reported that he probably won't have a novice class untill in Janurary.

The next meeting will be Nov 10 in Calumet at 2:30pm. The exact place is to be announced on the Wed. nite net on 01-61 repeater. Tune in and join the fun.

P. S. The work detail did go out and work on the repeater. They think they made several improvements and perhaps now it might possibly even reach OKC a bit better. george k5gg1

planned we adjourned for coffee and fat pills.

Next month (November) we will have a program on PACKET RADIO with the TAPPER TWO system. The program will be put on by Bob Helms, AF5Z with some help from Bob, WA5CJG and others. This should be a very good program so come out and bring a friend.

The Bad Note Taker, Bob, WA4CJG

YOU TOO, CAN WRITE ! !

It seems to me that there must be some out there in the CORA organization who are hiding their talents under a bushel, so, how would you like to be a Guest Editor one time? Just one time! Certainly one of you has an opinion about something you feel pretty strongly about. Oh, you wouldn't have to do the w-h-o-l-e paper, just one page, or part of a page, if it is a small opinion. Oh, you would? Great! Now, here's all you have to do. Just type it out on white paper, and that's it. Oh, make the columns 3.2" wide, if you can. And if it doesn't fill the whole sheet, I'll fill in the bottom with appropriate trivia or a business card ad. You don't have a typewriter? No problem. Send along what you have and I'll set it up on my handy dandy Color Computer. Don't worry, I won't change a word, unless you desire it.

Think about it.

Remember C&E's motto: "All The News That Fits, We Print".



"You've got to help us, Doc... We think we're schizophrenic."

November 18 is the magic date for the next C&E !



This happy group is composed of charter members of the Wheat Straw ARC at their 25th anniversary banquet. The WASARC, with members from over 20 communities, provides support to hams in the rural areas of western Oklahoma. (photo courtesy N5SN)

# THESE CORA MEMBER CLUBS PROMOTE AMATEUR RADIO

**1 AERONAUTICAL CENTER ARC**  
MEETS: FIRST THURSDAY, FLIGHT STANDARDS  
BUILDING, FAA, S. MACARTHUR  
PR JACK INAM, WBSVN 677-8537  
VP TOM MANGHAM, KSLDI 677-5291  
SE GLORIA SEIGNIOUS, WDSJPM 722-1740  
TR BOB PACE, WASCJ6 376-3569  
EDITOR: GLORIA SEIGNIOUS, WDSJPM 722-1740

**2 CENTRAL OKLAHOMA VHF CLUB**  
MEETS: 10:00AM THIRD SATURDAY, RED CROSS.  
10TH & HUDSON (BACK DOOR) OKLA CITY  
PR JERRY WETMORE, KOSIS 524-5080  
VP PAT SHERRILL, NSPS 943-3219  
SE JOE BUSWELL, K5JB 732-0676  
TR ELLARD FOSTER, WSK6 789-6702  
EDITOR: JOE BUSWELL, K5JB 732-0676

**3 MID-OKLAHOMA REPEATER, INC**  
MEETS: 8:00PM FIRST TUESDAY, OKLAHOMA CIVIL DEFENSE  
WILL ROGERS BLDG., STATE CAPITOL  
PR BOB ALLEN, NSEPV UNLISTED  
VP  
SE  
TR SID GERBER, WSKOZ 737-1050  
EDITOR: MIKE SAMBUCCO, KASTSD 672-9176

**4 OK CITY AUTOPATCH ASSN.**  
MEETS: 7:30PM THIRD TUESDAY, OKLA CITY FIRE  
TRAINING CENTER, 800 N PORTLAND  
PR DON ROOKER, WOSH 721-2119  
VP DON SAUNDERS, WDSISS 721-0404  
SE CHARLES HOFFERBER, NSFMY 340-4468  
TR ART HERNANDEZ, NSSRI 354-9724  
EDITOR: DON ROOKER, WOSH 721-2119

**5 OKLAHOMA UNIVERSITY ARC**  
MEETS: 7:30PM SECOND TUESDAY (SEP-MAY)  
119 WILSON CENTER, 1334 S JENKINS  
PR LUKE MOAH, KASBAY 325-1775  
VP JOHN MUSTENBERG, KESH 325-2382  
SE PETER RICHESON, KASCOI 329-3217  
TR GREG SMITH, KASLZN 366-1641  
EDITOR: GREG SMITH, KASLZN 366-1641

**6 ALTUS ASSOCIATION**  
MEETS: 7:30PM SECOND THURSDAY  
NORTH MAIN FIRE STATION (CD) ALTUS  
PR DWIGHT DENNIS, WBSKRH 482-2498  
VP  
S/T MIKE SCHENKLE, WSVIU 482-1797  
EDITOR: MIKE SCHENKLE, KBSIN 482-1797

**7 BICENTENNIAL (76ers) ARC**  
MEETS: 7:00PM SECOND TUESDAY, OG&E BLDG.  
SE 3RD & E. K. GAYLORD BLVD.  
PR DONALD DUCK, AESN 691-4199  
VP TED VANLANINGHAM, WDSJNT 262-1675  
SE JERRY SPROUL, NSAH 354-2061  
TR TOM WEBB, W9AFM 737-6716  
EDITOR: JIM SEALS, KBSXN 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, W5JHB 893-2221  
VP VIRGINIA BENEDA, NSEND 825-3302  
S/T GEORGE MASCHINO, K5GGL 263-7614  
EDITOR: RICHARD RUHLE, W5GLD 375-4843

**10 OKLA INDEPENDENT AR**  
MEETS: 7:00PM SECOND TUESDAY  
SOUTHWESTERN BELL OFFICES, PONCA CITY  
PR DAVE WHITE, WNSLUI 765-5707  
VP VERNON TREIBER, NSANV 767-1571  
SE GLEN BISHOP, JR, KASPB 767-1031  
TR BIZ WICHY, WDOHCO 762-3297  
EDITOR: DOUG EVERITT, NSOUB 949-1928

**11 EDMOND AMATEUR RADIO SOCIETY**  
MEETS: VARIES. SEE CLUB SECTION FOR DETAILS  
PR KEN STEPP, NSOBN 341-4874  
VP BILL DEMAND, KSSKA 751-5137  
S/T BILL WRIGHT, KC5GN 341-6076  
EDITOR: BILL DEMAND, KSSKA 751-5137

**12 QUARTER CENTURY WA**  
MEETS: QUARTERLY AT VARIOUS PLACES.  
NET: 3855 kHz SUNDAY AT 8:00 AM.  
CHM FRED BOARDMAN, WSNL 427-2305  
VCH RAY LONG, WSTY 942-4314  
S/T HOWARD BAKER, WSAS 721-5453  
EDITOR: ROBERT RUNYON, AA00 373-1818

**13 KAY COUNTY ARC**  
MEETS: 7:00PM THIRD THURSDAY  
PONCA CITY EDC  
PR PAUL DAVIS, WSHIC 765-2227  
VP MARSH PRONKEKE, W5UBD 363-2526  
S/T DAVE LAND, KD5FX 762-8616  
EDITOR: DAVE LAND, KD5FX 762-8616

**14 CIMMARON ARS**  
MEETS: 7:00PM FOURTH MONDAY.  
PLACE VARIES. SEE CLUB SECTION.  
PR JACK DAY, WNSI 227-3462  
VP LEO PEIL, KASBUD 886-2996  
S/T REETA MARTIN, KASSLY 227-3013  
TR DEDE BAILEY, NSFUM 227-2061  
EDITOR: RUTH SIMPSON, NSFUR 227-2791

**15 SOUTH CANADIAN ARS**  
MEETS: 9:30AM SECOND SATURDAY, RED CROSS BLDG.  
NORTH OX CAMPUS, NORMAN  
PR DAVE EGLE, KDSIT 321-7570  
VP KEN ESADODAH, NSBEN 329-4667  
SE JOE GREEN, KASAXQ 364-4301  
TR MONTE BATEMAN, WBSRIZ 329-7485  
EDITOR: SAM BARRETT, W5RPP 321-2601

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  
SECTION FOR LOCATION AND TYPE  
PR MARK NORTHCUTT, W5DYI 755-4672  
VP ROW CROM, W5EAI 681-0896  
S/T KAY NORTHCUTT, W5DYJ 755-4672  
EDITOR: MARK NORTHCUTT, W5DYI 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, WSKFK 256-2111  
SE LOIS FORD, KASPYA 923-7683  
TR FREIDA PATTERSON, W5EOI 256-2111  
EDITOR: LOIS FORD, KASPYA 923-7683

What have you done for ham radio today?

**20 ARDMORE ARC**  
MEETS: 7:30AM 2ND SATURDAY, CORRAL RESTAURANT  
IF INFORMAL: EVERY WEDNESDAY, 221 9TH HW  
PR GENE SOUTH, W5IJA 223-8252  
VP HOWARD ROBINSON, W5FAJ 223-5726  
SE JIM CHILCOAT, W5JCX 226-6816  
TR JOHN MERLYN, W5FZO 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, WDSISS 751-0404  
VP JIM BUSWELL, NSBEO 236-0368  
SE KATHY WHITED, W5NDO 799-1457  
TR SUSAN ST LAURENT, W5GVK 324-8180

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EDITOR: Joe Harding, W5ZNF 737-1044  
CIRCULATION: Bob Graham, W5MSV, 677-8685



Club  
NEWS  
W5LW  
The Radio Club's Newsletter

### Minutes of October Meeting

Meeting was called to order at 10:00 A.M. by president Jerry; and Ellard, W5KE gave the treasurer's report. It was requested that the following be distinctly set off from the minutes:

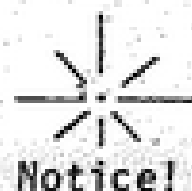
### NOTICE

Weiner Roast!  
Saturday, Nov. 9  
North Shelter  
Will Rogers Park  
(N.W. 36 and Portland)  
6:30 P.M.  
Coffee furnished  
Bring your own grub  
and utensils.

All CORA members invited!

November Meeting will be cancelled.

Ellard, W5KE, and Bob, W5HXL, were reappointed as CORA representatives. Here is some more stuff they wanted set off so you could find it.



Notice!

### Christmas Party

Saturday, December 14  
7 P.M. at ARC Headquarters

Cover Dish; bring deserts, snacks, utensils. Coffee and punch will be furnished.

All  
CORA members invited!

Meeting adjourned at 10:58 A.M. (Minutes courtesy of Bob, W5HXL, for the Secretary who was messing with S.E.T.)

### Packet Radio and S.E.T.

A great time was had by the packet radio operators during the October 19 Simulated Emergency Test. Three packet radio stations were set up in the field and staffed with about ten operators. Another seven stations were used to network and link the field stations together. The value of packet radio was pretty well explored during the exercise.

When Paul, N5PT, asked me if packet radio might be available for a simulated emergency drill, I didn't recognize at first that he was talking about the S.E.T. I got all the details wrong regarding times, etc. but

found that there was some interest between the packeters. Bob, AF5Z, spark plugged some of the operators into volunteering to help him at some unspecified location and I recruited WA5FLT to help me set up at Red Cross HQ downtown. It was the Thursday night before S.E.T. before Bob knew that he was going to operate from the County CD headquarters at the Oklahoma County Court House. He arranged with Larry, W5EIU, County Radio Officer, to scout out the area for antennas, etc., on Friday.

The other packeters who were not going to be able to participate on Saturday arranged to have their stations on so they could be used as digipeaters. Other packet radio stations were set up at "simulated" locations by Stan, WB5UIY; Jim, KB5XN, Tuttle; Bob-Robert, WA5BQX, Edmond; Dave, KB5NV, MWC, Lee, W5HLZ, MWC; and, Ron, N5DEW, Edmond. The latter four didn't handle any traffic but the log on one of the machines at home revealed them lurking out there ready to go if needed. Lee, W5HLZ, in Midwest City had his equipment on for digipeating with the antenna pointed at Norman.

On Friday night I carried a digipeater consisting of an IC-22S and GLB TNC, over to AF5Z's house and we hooked it to his beam antenna. The plan was to have the antenna pointed at Norman to enable connects with S.E.T. participants there. He was going to use his equipment down at the Court House and his home packet station would be disabled for the duration. No sense in having a perfectly good antenna up in the air with no packet system connected to it, we reasoned.

I re-arranged things at my house so I could take my favorite TNC, the TAPR TNC-2, with me down to the Red Cross. I fired up the old Kenwood TS-700A and amplifier and connected it to the omni antenna. The other rig, an Icom IC-27H, was connected to the beam pointed across Edmond to Enid. The IC-27A was packed up for the trip to the Red Cross.

Saturday morning found AF5Z ready to go at the Court House, Mark, N5H2R, at the Cleveland County Red Cross building in Norman, and me at Red Cross in downtown Oklahoma City. Jerry, KD5IS, was kind enough to get up, without complaint, in the middle of the night to open up the Red Cross Radio Room at 8 A.M. Assisting me at Red Cross was Joe, WA5FLT. Assisting Mark at Norman were Justin, KA5W1J, and Aaron, KA5W1K. Assisting Bob at the Court House were Jay, KB0QJ, Larry, W5EIU, and T.J., N5ILR. T.J. brought his computer & printer (more on that later). I heard Larry say something on 94 about it being earlier than he was used to on the drive downtown, but he wasn't really complaining! Stu, KD5DL, came down to Red Cross to handle Public Relations, and it was a good thing he did because we couldn't have done justice to the S.E.T. and answered questions simultaneously.

As a result of suggestions made after the California fires where packet radio was used extensively, we decided to have enough equipment at each high volume traffic site to prevent bottlenecks. Just as in phone or CW traffic, it is difficult for an operator to handle the radio side of things and work with the customers sending and receiving traffic. In packet radio, there is another problem. Message traffic has to be typed so it can be transmitted. The only practical way to do that is use a computer and store the traffic until time to transmit. Paper tape stuff is just not that readily available anymore! We decided that if two computers using compatible storage media were used at each traffic location, one could be used for message composition and the other for maintaining the radio link and guarding the frequency for incoming traffic.

Joe (FLT) and I tried a couple of different methods but the original plan worked out the best. In a couple of cases I "borrowed" the printer and dumped messages without saving them to disk but I wish I hadn't. It would have been nice to have magnetic copies afterwards, though the printed copy is satisfactory to meet the legal requirements regarding third party traffic.

Both Bob and I created handy dandy little programs on the computers to make message composition a little easier and quicker. His was a "fill in the block" approach and mine was an "edit the screen" approach and they both worked pretty well. We both thought of "features" to add to the programs after the exercise and I am sure copies will be available for the Apple 2 and R-S Color Computer, after we add the "features" and remove some of the "undocumented features". (har!) Bob sent a copy of his BASIC program to Mark, N5H2R, in Norman via packet on Thursday. Mark effectively modified it and used it with a Compaq during the drill.

In setting up the packet radio network we gave little thought to liaison with the other modes and frequencies. With the assumption that someone else was setting up to operate phone, we concentrated on the digital side of things. As it turned out, the only location in our packet network that was prepared to act as liaison with other modes was at the Oklahoma City Red Cross station. Roger, KWOZ and Richard, KA5TTH, responded to the call for operators and opened the 2 Meter FM and HF stations. This worked effectively for the exercise but in a real situation there would have been so much activity originating and terminating at the Red Cross it would have been difficult to effectively link bands and modes. It is always better, if possible, to locate net control and liaison stations away from the traffic terminals.

The Court House station decided not to assume a liaison role, though they were listening to the action on 2 Meter FM. We also ignored calls unless directed



towards the 2 Meter Phone operator. Otherwise we would have been totally confused!

Traffic count wasn't as good as it could have been. The time flew and by the time we really got in the swing of things the two hour exercise was over. Bob, AF5Z, originated 14 and received 7. K5JB-2 originated 8 and received 14. Never did get a count from N5HZR but the log showed 4 that were transmitted from his station. Mark reported that he was being prompted by traffic generated by Howard, N5HZU, and James, N5HLJ. (Of course he got some prompting also from KA5WIJ and KA5WIK who were with him at ARC in Cleveland Co.) One of the unattended stations, which was needed for AF5Z to link into Norman, went belly up. K5JB, the 100 watt Omni station at my house was logging and a computer disk filled up, the computer buffer filled up and the TNC's buffer filled up. A TAPR TNC-1 does what you or I are prone to do when our bellies are full. It takes a nap! I had made a mistake when I set it up before leaving and turned a trace function on. It is a diagnostic tool that displays the contents of undigested packets that have been transmitted. The trace fluffed up the amount of stuff that had to be stored and it just ran out of room.

Channel 4 TV filmed some of the action at the Oklahoma City Red Cross Headquarters for the 6 o'clock news. FLT put on his best profile for the folks at home and I tried to explain why a bunch of crazies would go to so much trouble to provide communications after disasters.

Personally, I was more engrossed in the mode than the exercise and my messages lacked the originality and substance they needed to make a more effective S.E.T. Oh well, it takes experience to do something comfortably and maybe the next time the "means" won't interfere so with the "end".

Joe, K5JB

#### Packet Radio Developments

The following came from the ARRL special interest newsletter, Gateway, Vol. 2, No. 3:

The availability of several commercial TNCs has spurred the growth of packet radio. In most areas, several new calls are heard on the air each week, and Gateway is getting between 50 and 100 new subscribers per issue. How will these new users be served by the existing network? Moreover, how will network continue to offer more services in the face of a steadily growing user community? The single-frequency amateur packet-radio network is already nearly overloaded in many metropolitan areas. When the network becomes overloaded, the packet community will look to its experimenters for new hardware and software to keep packet radio growing. Several groups of experimenters, both formal and informal, are investigating the various

hardware and software choices that face the amateur packet-radio community. The necessary software includes protocols for network (also called ISO layer 3) and transport (ISO layer 4) services, and standards for addressing, routing and mail forwarding. Hardware will be needed for sophisticated mountain-top digipeaters, remotely operated PBBSSs, satellite teleports and HF-to-VHF gateways.

One of the groups interested in what is broadly called "networking hardware," is TAPR. Now that several hundred TAPR TNC 2s have been shipped, TAPR is turning to the design and debugging of a Network Node Controller (NNC). TAPR president Lyle Johnson provides the following overview of the TAPR NNC project.

"To keep everyone in the loop, here is the present status of the TAPR NNC hardware project. The schematics are in St. Louis at Interconnections, the company that does all the CAD (computer-aided design) layout work for TAPR. If all goes well, we should have artwork for all three boards by the end of the month! Board 1 is the NNC itself. Its present configuration is:

1) HD64180 microprocessor. This is the CMOS Z80 superset chip with on-chip DMA (direct memory access), dual UARTs (for asynchronous communications), 16-bit timers, MMU (memory management unit) (to manage 512 kbytes of memory) and a clock. This is the same microprocessor that is featured in "Build the SB180 Single-Board Computer" in the September issue of Byte magazine.

2) Dual SIO/2s. This allows four channels of HDLC (high-level data link control) capability. (HDLC is necessary for packet operation.) One SIO may be configured (via push-on jumpers) to have either or both of the channels operate DMA.

3) One PIO (parallel I/O) chip. This provides a parallel printer port and several lines to fiddle with (for bells, whistles, buzzers and item 4).

4) A battery-backed-up real-time clock.

5) An SCSI interface, which allows this board to communicate at high speed with other nearby devices. This will allow the NNC to be a smart Level Two "front end" for a later board that can handle all the networking and transport functions when the network outgrows the capacity of the 64180.

6) Eight byte-wide sockets, for 64 kbytes of battery backed-up RAM (bbRAM) with jumper selection for 256k bytes of bbRAM!

7) Eight more byte-wide sockets mapped for 32-kbyte parts...This allows the full 1/2 Mbyte of memory to be put on the board.

8) Expansion interface for Board Three (described below). "This will run on 5 v, DC and has RS-232 compatible ports

for the two asynchronous channels that are part of the 64180 microprocessor. The serial interface will meet the proposed WESTNET standard. "But, you may ask, what good is a NNC without modems? Glad you asked that! "Board Two, to go to St. Louis next week, consists of: 1) Multiple XR2206/XR2211 modems. (Like the modems in existing TAPR TNCs.) Each modem will have a clock generator, a state machine and a tuning indicator. Board size constraints will determine whether we only get two modems or if we can squeeze on four modems per card. "Yes, these are only 1200-baud (or 300-baud) modems. But, the local users need a port or two to get in (1200 baud) and long-haul stuff is going to be HF for a while to come (300 baud now, perhaps 1200 later).

"Both of these boards to be sized per the WESTLINK standard, so that they can screw on the side of a 5.25-inch floppy-disk drive. "Why a floppy drive? I'm glad you asked that, too! "Board Three is a plug-in floppy-disk interface! The I/O is mapped to be compatible with the SB180 to allow a simple port of the "Z" system (disk operating system). Thus, the NNC can become its own software development engine, and the hard work of placing a decent operating system on the NNC is already done and readily available at a reasonable price. "If we are lucky, all boards will be laid out by the end of September. Prototype boards should be populated in October, then debugged by hardware types while the software types (I hope) will get cranking on some level-three (networking) software. "Thank you each and every one for your inputs to date. Keep the comments coming. Happy packeting!"

Now that several of us have had some experience with the TAPR TNC-2 I think we are pleased. They seem to have a better modem than the TNC-1 and are able to extract information a little better from marginal signals. There are a lot more operating features such as date and time stamping of connections, etc.

Bob, AF5Z, put together this comparison of TAPR TNC 1 and TAPR TNC 2 Version 2 command differences. The following is just as he transmitted it to me via packet radio (with a few additions where I knew the answers. Asterisk marked commands are ones on the TNC-1 that are not on TNC 2. # marked commands are TNC-2 commands that are not found on the TNC-1.):

#8BITCONV	OFF	Send 8 bits to term in converse mode
*ABAUD	1200	Terminal baud rate
*ABIT	1	Number of stop bits
*AX25	ON	Select AX.25 or VADCG
#AX25L2V2	OFF	Use AX.25 Level 2 Version 2 protocol
#BUDLIST	OFF	Display LCALLS packets
#CMMSG	OFF	Send CTEXT as first packet after connect
#CTEXT	"text"	Up to 120 connection message characters
*CWID	OFF	TNC-1 has optional CW ID

#DAYTIME yymmddhhmm Display or set real time clock  
 #DAYUSA ON Format date as above or ddmmyy  
 \*DEBUG \$05 Enter and leave debug  
 \*HBAUD 1200 Set radio baud rate. On TNC-2 dipswitches set radio & terminal baud rates  
 #HEADERLN OFF Put monitored callsigns on separate line  
 #HID OFF Enable HDLC ID during digipeating  
 #ID Send an immediate identification packet  
 \*IDTEXT CALLSIGN  
 #LCALLS CALLSIGNS List of up to 8 calls for BUDLIST use  
 #MCOM OFF Monitor Con, Discon, UA & DM or only info  
 MCON OFF Enable monitor while connected  
 #MFILTER \$00 Up to 4 characters to filter from monitor  
 \*MFROM NONE Selective calls mon.  
 #MHCLEAR Clear list of stations heard  
 #MHEARD Display list of stations heard. \*=digptr  
 #MRPT ON Display digipeaters in monitored links  
 #MSTAMP OFF Enable timestamping of monitored frames  
 \*MTO ALL Calls monitored option  
 \*MYVADR \$FF VADCG address  
 #NEWMODE OFF Enable automatic data xfer mode upon connect  
 #PASSALL OFF Accept packets with invalid CRC (errors)  
 #TRFLOW OFF Allows software control to TNC in Transparent  
 \*VDIGIPEA ON Permits this TNC to digipeat VADGC packets  
 \*VRPT OFF Enables VADCG digipeating of packets from this TNC

This is not a complete list of TAPR TNC commands, only the differences between the TNC-1 and -2. We didn't want to bore the old timer packeteros!

#### New From AEA

The following came from Compuserve's Hamnet, Pete, WB9FLW, extracted it from an AEA commercial announcement telling about the new PK-80:

#### PK-80 UNIVERSAL PACKET CONTROLLER

AEA is pleased to announce the model PK-80 Terminal Node Controller which is designed for use with any dumb ASCII terminal. The PK-80 will also work with any computer having a serial RS-232 port and a terminal software program.

The AEA model PK-80 is the same design as the famous TAPR TNC 2 kit. With the PK-80, you will receive a completely wired, tested, and calibrated unit having a one year warranty.

#### PK-80 SOFTWARE FEATURES:

- \* AX.25 VERSION 2.0 IS FULLY IMPLEMENTED
- \* MULTIPLE CONNECT WITH UP TO FOUR STATIONS SIMULTANEOUSLY FOR NET OPERATIONS OR ROUNDTABLE DISCUSSIONS

- \* SPECIAL "CONNECT CHECK" FEATURE TERMINATES PATH IF CONNECTION IS LOST (POLL FINAL BIT IS FULLY IMPLEMENTED)
- \* USER DEFINABLE MESSAGE FOR AUTO RESPONSE TO A CONNECT
- \* DATE/TIME STAMP OF INCOMING MESSAGES OR CONNECTIONS \*MONITOR REJECT COMMAND \* 82 SOFTWARE COMMANDS POSSIBLE FOR ACCOMMODATING THE MOST DEMANDING REQUIREMENTS
- \* ONLY THREE COMMANDS ARE NECESSARY TO MAKE STANDARD "CONTACTS"
- \* MHEARD COMMAND LISTS LATEST STATIONS HEARD AND TIME THEY WERE MONITORED

#### HARDWARE FEATURES:

- \* Z-80 ONBOARD CPU \*16K PROGRAM EPROM, EXPANDABLE TO 32K
- \* 8K RAM \*HARDWARE HDLC FOR FULL DUPLEX (ESPECIALLY NICE FOR SATELLITE OPERATION)
- \* TRUE DATA CARRIER DETECT (DCD) DISTINGUISHES BETWEEN ACTUAL PACKET DATA AND INTERFERING QRN
- \* WORKS WITH 300, 1200, 2400, 4800, AND 9600 BAUD TERMINALS
- \* BATTERY BACKED-UP RAM FOR STORAGE OF ALL SELECTABLE PARAMETERS (INCLUDING BEACON TEXT MESSAGE)
- \* BUILT-IN FREQUENCY COUNTER AND SOFTWARE FOR SELF-CALIBRATION
- \* MODEM TUNING INDICATOR PORT ALLOWS ADDITION OF EXTERNAL TUNING INDICATOR FOR HF AND SATELLITE OPERATION
- \* OPERATES FROM EXTERNAL 12V DC
- \* PCB LAID OUT WITH LATEST COMPUTER AIDED DESIGN (CAD) EQUIPMENT
- \* FRONT PANEL LED INDICATORS:

CON- Indicates when you are connected to another station. A hardware connect signal also appears at terminal connector for bulletin board use

DCD- Shows when packet data tone is received

STATUS-Indicates when last packet has been acknowledged

PWR- Power on/off indication

The cost of the PK-80 will be \$ 219.95 Amateur Net.

Many folks will ask "Why buy a TNC 2 from TAPR?". Good question! TAPR will continue to produce the TNC 2 kit until AEA can produce the PK-80 unit in quantity. It should be noted that all TNC 2 kits now shipped have 32K ROM and 16K RAM, double that of the PK-80. One last little surprise is that all remaining units will be sold with all CMOS parts at no increase in price (except for the modem chips which are only available in NMOS) this make the TNC 2 current drain below 100 ma.

This is in no way meant to "upstage" AEA PK-80 we (TAPR) are DELIGHTED that AEA will be making this product available. Mike Lamb N7ML, President, and the entire AEA gang are FIRST CLASS folks and TAPR has made some very close friendships up in Lynnwood Washington in the last couple of years. TAPR still has a sizable debt to pay

off, by buying a TNC 2 you will be helping TAPR go forward to networking. On the other hand if kit building isn't your bag and you want a full featured unit, your wait is about over!

TAPR is moving on. We are in the prototyping stages of our Networking Controller, hang in there folks some exciting times are ahead!

Best Wishes & 73 For TAPR.

Pete, WB9FLW

#### PK64 "PACKRATT" SURPRISES

The following was extracted from Gateway, Vol.2 No. 4:

For a couple of months, AEA has been running advertisements for the PK64, a TNC and terminal program for the Commodore 64 computer. None of these ads, however, prepared us for the number of advanced and useful features that the PK64 will display when it is released at the upcoming ARRL National Convention. A discussion with Mike Lamb, president of AEA, revealed that the PK64 will be an integrated digital communications package capable of running CW, Baudot and ASCII RTTY, AMTOR, and packet radio.

AEA did not sacrifice any packet-radio features to make the PK64 cover the other modes. It runs AX.25 Version 2, and can manage up to 10 simultaneous connections. Like the TAPR TNC 2, the PK64 will "stamp" monitored packets with date and time, and you can set the PK64 to accept or reject packets from specific stations. The PK64 can automatically send a message to any station that connects to you. If you want to be out of the shack, but still know when someone connects to you, the PK64 sounds an alarm "like a submarine claxon" when you receive a connect request. All TNC operating parameters can be saved in a disk file and retrieved with a single command; up to 10 such "NOVRAM files" can be saved.

The terminal program is like other AEA "MBA-TOR" offerings, providing a split screen display with a status line, a large text buffer and the ability to save, print, edit or transmit the text in the buffer. One feature that should be useful for those who receive bulletins or messages on RTTY and put them on packet radio systems is the PK64's ability to receive text on one mode and transmit it on another without using a disk drive or cassette recorder.

The standard modem in the PK64 uses the common EXAR PLL (phase locked loop) demodulator. HF or VHF tones can be selected from the keyboard, and a tuning indicator is displayed on the screen of the C 64. As an option (necessary for receiving CW), AEA will offer an enhanced demodulator that the user can install in the PK64. This is a dual-channel, filter-type demodulator with AM detector, adjustable squelch and an LED tuning indicator.

Jeff Ward, K8KA, Gateway Editor

## GREAT PLAINS A.R.C.

W5HGH Repeater 146.13/73

The October meeting of the Great Plains Amateur Radio Club was held the first day of the month with eleven members and four guests present. We have missed several of our members for the last couple of sessions and hope to see them at next month's meeting. Some are still traveling, some are busy around the house and others are still recuperating from a very busy summer's activities.

A Novice Class is scheduled to commence on November 7th. It will be held on Tuesdays and Thursdays from 7-9 pm. Myron, N5HRA and Gayla, KA5UYR will teach the classes. Our hats are off to these two for their efforts.

It was decided at the October meeting to continue with 9 pm as the time for opening the Northwest Oklahoma Service Net. This net, sponsored by our club, is on Friday at 9 pm (local time) on the 146.13/.73 repeater. Myron, N5HRA is the net manager and can be contacted for further information. Any hams visiting in our area are urged to check in.

## CHRISTMAS ALREADY ???

Our annual Christmas Party will be held at K-BOB'S Steakhouse, Woodward OK on December 7, 1985. Visiting will start at 7 pm and the meal at 7:30. The large dining room has been reserved. Let's make a supreme effort to fill it up to capacity this year. In addition to the usual fun and games, the Board of Directors are to act as a nominating committee and come up with a list of prospective amateurs to fill three upcoming vacancies on the board. For an evening of fun and fellowship please mark December 7th on your calendar and make plans to attend.

## OLD ACQUAINTANCES RENEWED

Recently, while Rod and I were in Oklahoma City, we were talking to James, N5HLJ on one of the local repeaters. Much to our surprise K5YZK, Jim Phares broke in. Both of these gentlemen are former GPAC members, past officers and are now residents of Central Oklahoma. Our loss is downstate's gain!! At any rate, it was very nice to hear these familiar calls again.

## CLUB PROFILE

### BEAVER AMATEUR RADIO QSO

This part of the column is normally reserved for news about members of our club. However, we

feel that a noteworthy ham event has been taking place in our area for several years and that apparently not many outside this area would know about it.

Several of those instrumental in producing this affair are, or have been, members of the Great Plains Amateur Radio Club.

Sunday, October 13th was the date of the 9th Annual Beaver OK Amateur Radio QSO.

What a great time we had! Everything, including the weather was super. Let's take a little closer look at this affair.

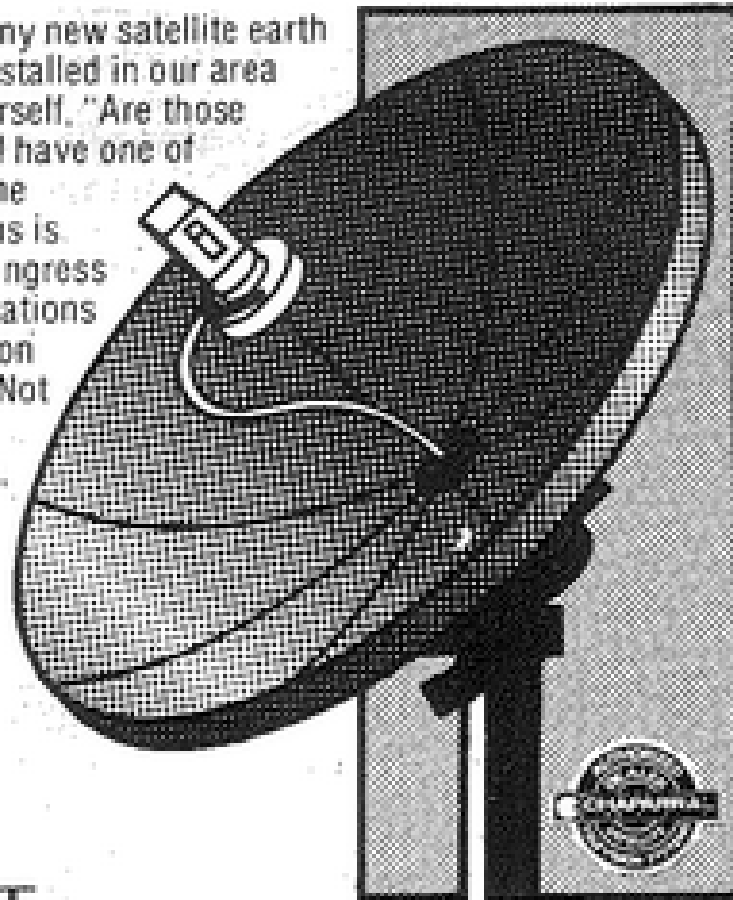
The Beaver Amateur Radio QSO was born nine years ago as the result of several informal meetings of amateur from the concerned area. It has never been a large affair ranging from a high of about 100 to a low of 60 in attendance this year. The small number has not altered the quality, everyone enjoys themselves and usually make plans to attend next year. Excellent facilities, dealers and vendors in attendance, an ample supply of trading gear, VE Testing, warm hospitality and a great meal make for a memorable day.

It sounds like everything is set for another great Sunday in the middle of October out at Beaver next year. Right?

(CONTINUED NEXT PAGE.)

## YES, YOU CAN!

You may have seen many new satellite earth stations, or "dishes", installed in our area recently and asked yourself, "Are those dishes legal?" or, "Can I have one of those?" Well, happily the answer to both questions is YES. In 1984, the U.S. Congress approved home earth stations designed for the reception of satellite broadcasts. Not only are dishes legal to use, they are affordable, too. You can enjoy the freedom and wide variety of satellite television today.



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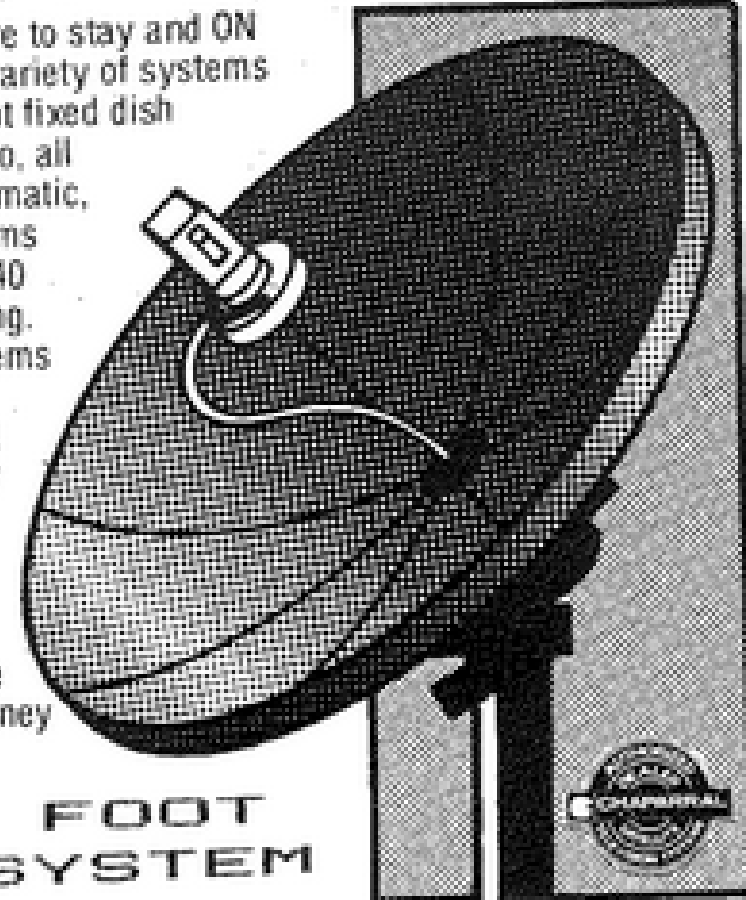
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Well--maybe not. Perhaps things aren't as definite as they seem. Many of the original enthusiastic helpers are no longer available to help. Through the years more and more of the responsibility has fallen on the shoulders of a few and now rests almost entirely on John and Stella Shaw, WB5UOE and WB5VUN. Facility charges are increasing almost yearly. The nominal \$2.50 per person charged this year went almost entirely to pay rent and postage. Probably the most discouraging thing and the cause of several problems, is the decrease in attendance. Amateur radio is growing rapidly in this area and as a result many other amateur activities and hamfests have been started. This reason, together with the location being away from any populous area is apparently why the decline.

We, speaking for all the members of the Great Plains Radio Club, appreciate all the work necessary in putting on a hamfest. We also realize that this event was started to fill a void in our amateur radio social life in this area. We wish that more knew how much fun, good food and excellent fellowship was available at the Beaver Amateur Radio QSO. Hopefully, invitations will be extended for everyone to attend the 10th. If so, tell a friend, and let's all plan to be there.

73

Lois, KA5PYA

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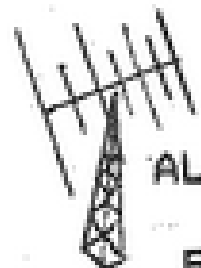
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ALL WORK GUARANTEED

Look on page 3 for the new CORA officers - and support them in their efforts to make CORA a better organization.

Now let's look at last years officers:

Reggy, WN5NWX, the outgoing two year president is to be commended for his handling of the office. He did a great job on Ham Holiday both years as well as the other items that came up.

Don, WD5ISS, substituted a few times for Reggy and acted as facilities chairman at Ham Holiday. Good job.

Jim, N5BEQ, did his usual good job as secretary. Kept the records and wrote a lot of letters.

Linda, WDOFTM, handled a lot of money, the Ham Holiday funds and those for the Collector & Emitter. In spite of a full time job and raising a daughter she somehow made it.

Best of luck to the old officers and to the new ones.

The next issue of the C&E will be pasted up on November 18 (That's a week early, on account of Thanksgiving).

"AMATEUR RADIO" FOR AUGUST

World War I wireless equipment and its use by ANZAC troops gets a play as well as WW II sub rosa radio construction (and use) in Jap POW camps.

Add to that an account of tests to arrive at the actual effect of antenna polarization on HF transmission and reception, and you have an interesting issue. Read it in the ACARC clubroom.

FOR SALE: Make an offer for my Apache transmitter AM/CW, SB-10 sideband adaptor and HQ-129 receiver. Ideal novice beginning station or backup for an established operator. Contact Frank Martin, K5KCJ in Altus at 482-1439.

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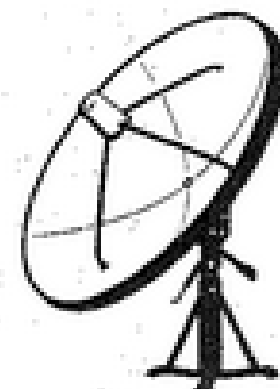
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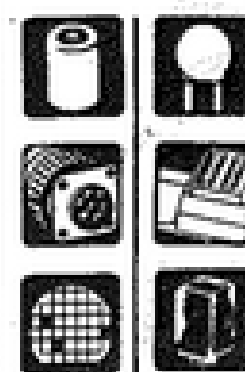
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# Salem

## PRB-1, A LITTLE HELP FROM OUR FRIENDS (For Antennas, that is)

Last Month, I mentioned that the FCC had finally issued a declaratory ruling on September 19, 1985 involving a request by the ARRL for guidance in controversies between local communities and amateur radio operators on antenna heights. At the time that I wrote the article, I only had a very brief summary that had been provided to me by Chris Imlay N3AKD, general counsel for the ARRL. Since that time, I have managed to get a copy of the full text of the Order and decision. The text has been published in full in the November 1985 issue of QST. For nonmembers of the League, a copy of the Order can be obtained by making a trip to a local library where the Federal Register is housed. I haven't located the date it was published, but it is generally done within a week or so after the order is issued. If space permits, I will attach a copy of the entire order to this article.

What is PRB-1? To the gentle readers of this column in C & E, that question has been answered a dozen times before and they must subjected to another several pages on the subject or simply turn the page. To the new initiate to amateur radio or the first reciprocal licensee from Mars, PRB-1 is an administrative proceeding before the Federal Communications Commission dealing with a proposed preemption of local regulation by cities and counties of the heights of amateur radio antennas within those communities. It began with a request filed with the FCC by the American Radio Relay League on July 16, 1984. That is just the formal beginning. Actually, the controversy has been brewing under the surface for years as countless amateurs have had to face the usually unbearable challenge to the local power of cities when attempting to construct towers suitable for the effective use of their amateur license. The problem is that many of the local authorities take the challenge to their authority in a personal manner. And since they are spending the public nickel or have attorneys on staff, you find that they tend to fight these things to the bitter end. Nobody can afford to outspend the government and in the end, the amateur finds that he must limit the use of his radio system rather than take the challenge to a fight.

Some of those who have chosen to fight find the odds very much out of their favor. The only saving grace generally is that the cities have gone into the radio regulation business or written tower ordinances so restrictive that courts are generally aware that the restriction is improper. Two recent examples of this are the Burbank case and Oelkers where restrictions effectively terminated the effective use of amateur radio by amateurs within the community. Both of these cases had useful and beneficial results for amateurs within those communities, but are only persuasive to amateurs attempting to use them as authority to persuade their cities to "loosen" up.

In addition, the federal courts have become increasingly reluctant to state that Congress had taken the control of the height of amateur radio antennas away from local communities when it passed the Communications Act of 1934 (47 U.S.C. §151 et. seq.). There simply is not an explicit statement regarding amateur radio towers anywhere in the Act or in the Federal Regulations passed by the FCC. As a result, a recent line of cases have held that Congress had not preempted local control and the FCC had never acted to exercise the authority to preempt, therefore there was no preemption and the local control was not altered. This was especially true when there had been cases which held that the FCC had not preempted and the FCC took no step after the case had been decided to reverse the decision of the Court by preempting. A recent case which followed this line of reasoning was the Guschke v. City of Oklahoma City, No. 83-2599 (Tenth Circuit). This is the so-called "Oklahoma City Antenna Case." It involved a city ordinance which permitted antennas to 35 feet and 50 feet with a special permit. Obviously, this is a case which seems, at first glance, to present a much more difficult challenge to the City's authority since communications can be maintained with a 50 foot antenna. In other words, the degree to which the City's ordinance restricted amateur radio seemed reasonable (at least to city fathers) although restrictive on effective communications.

The Tenth Circuit in its order issued on June 7, 1985 found that the Commission and Congress had not acted to preempt local regulation:

The FCC, however, has taken no action concerning local regulation of amateur radio antennas. Our inquiry, thus, deals with the more preliminary question whether

the Congress and the FCC have attempted to preempt local regulation. We find that they have not.

Guschke, p. 8

It is probably no small coincidence that the Commission's decision in PRB-1 followed the decision in Guschke. The decision by the Tenth Circuit actually threw down the gauntlet to the Commission to either put up or shut up as far as preemption of amateur radio antenna height was concerned. To that challenge, the Commission put up.

### The Decision in PRB-1

We read material from the FCC all the time in the amateur radio magazines. The form and formula of their orders become familiar. They generally begin with a background summary which include a discussion of various issues affected or considered by the order. They then discuss Supporting comments and Opposing Comments, and finish with a discussion. It is logical and precise. No doubt part of the "plain language" effort of several years back.

In the background section, it is most important to note a single fact which probably more than any other single factor contributed to the relative success of PRB-1. The last sentence of paragraph 2 noted that "Over sixteen hundred comments were filed." That is a lot, especially for a proceeding involving amateur radio. It is also safe to say that most of the comments were favorable to the amateur's need for an order of preemption. One basic rule of good government should be "If it aint broke, then don't fix it." Had the number of comments been insignificant, or had the comments not recited horror stories of what cities and counties were doing, it is doubtful that the Commission would have undertaken to exercise its power in such a delicate and politically charged area of federalism. This may truly be a situation where amateurs saved themselves by filing comments to show the Commission that "yes", a problem does exist and "yes", it would be helpful if you entered the fray. This is as much acknowledged in paragraph 3 where they recite that the inevitable conflicts between

amateurs and local authorities are common. As a part of shoring up the argument regarding the conflict, many amateurs submitted copies of the ordinances in various cities. Two of the examples recited by the FCC in its order are especially helpful. While San Diego limits antennas to 30 feet (something that is clearly restrictive), Mundelein, Illinois has a restriction that limits an amateur tower to 53 feet (for the particular individual). The Commission's recitation of a restriction of 53 feet is a tacit recognition that 50 feet or even 55 feet may not be a reasonable accommodation for the amateur radio operator in some instances. A 50 foot restriction is very common in many cities.

The comments also raised several other factors such that aesthetics, for example, is frequently used as a justification for restrictions on height when there is no reasonable basis for the restriction according to the normal powers given to the cities of health, safety and the public welfare. Additionally, while amateur towers are singled out for discriminatory treatment merely because of height when other residents engage in activities or keep installations such as RV's, solar equipment and the like clearly less aesthetically pleasing.

A curious section of the order addresses "Restrictive Covenants" which are also known as "deed restrictions." These are restrictions added to residential plats by developers to limit certain types of structures. The ARRL never requested a ruling on deed restrictions. It would have been foolish to have done so. These deed restrictions are a private matter of contract between the developers and purchasers of homes. A person has notice of the restrictions before he buys the home (at least he should). He cannot move into an area and later complain that the restrictions keep him from building an antenna. He should have checked the abstract of record prior to purchase since he is legally bound by those restrictions. The Commission, more likely than not, addressed the issue of restrictive covenants since there were so many of them mentioned in the comments. They are essentially responding to the material contained in the comments.

The FCC's refusal to include restrictive covenants within their order is probably legally proper and politically astute. It just simply is outside their authority to interfere with the private right of contract. But, to deal with ordinances made by public officials is another story. Especially when those ordinances impinge upon an interest of the affected federal

agency.

The supporting comments quoted by the Commission probably form the core of what support the FCC was looking for in its order. A multitude of important agencies including the Department of Defense, the American Red Cross, MARS, CAP and others came to the defense of the amateurs.

The nature of the opposing comments also give some indication of the kinds of concerns that the Commission intended to address in its order. Many of the cities were clearly worried about an absolute and total ban on local control, something again not part of the request initially filed by the League. The ARRL initially wanted only a limited preemption which would have prevented local regulation unless the local ordinance was clearly limited to health, safety and public welfare. Thus, a city could still prevent an antenna from becoming a public nuisance when it blocks a view of a traffic hazard or an attempt is made to build it on a lot so small or in such a manner that there might be serious question regarding its safety. Lot size, to my way of thinking, may be a moot point. I have seen antennas and towers constructed on very small lots in a clearly safe manner. The best example I can think of is WA5TOO's installation. Darrell's 70 foot tower is built on a lot probably 50 foot across, yet from the size of the materials used and the solid method of construction, it will be a long time before it comes down. The same can be said for another amateur who built a 60 foot tower on top of his business. Although guyed only on a 12 foot radius the antenna has survived several structurally stressful windstorms over the last several years with nary a hiccup. The amateur who uses commercially available tower (Rohn) and follows the simple techniques of construction will have a "hell for stout" installation that will defy local attempts to write an ordinance that declares it unsafe.

The opposing comments also reflect a recognition on the part of some of the national organizations of cities that the national interests in amateur radio must be accommodated, but the suggestions that the issue should be left to the local governments and state and federal courts is simple foolishness. The Courts and local governments had already proved their lack of sympathy in view of the FCC's previous inaction. If there was a problem with antenna ordinances, the Commission should deal with it now rather than allow recalcitrant cities and unsympathetic courts to have another chance.

Why did the cities not put up a larger fight with the FCC? The answer is unknown, but more likely than not, the bottom line is money. This case is not the biggest fish to fry before the FCC in the city's minds. They are more concerned with issues such as continued local control (i. e. , right to raise revenue) of cable TV franchises. Quite simply, the exercise of their police power over radio antennas just doesn't add up to the fear that the Commission might shut down their clinking cash registers. And the Commission has indicated a desire to look into just that. While the FCC has indicated a desire to "deregulate" a corresponding deregulation does not imply that the locals can step in and fill that vacuum. The "free market" concept of the current administration leaves many activities on their own free from regulation from both local and federal authorities. Viewed in this light, the FCC's order in PRB-1 may just seem consistent. It is an exercise of federal authority that does not assume direct and substantial authority of the subject matter while at the same time preventing or limiting local intrusion. Ultimate resolution of the problem may be left to the Court, surprisingly enough, perhaps the least capable organization to judge the effectiveness of antennas. But this is a political and practical necessity. First, the FCC should not be policing local zoning disputes between amateurs and municipalities. Paragraph 26 of the Order makes it clear the FCC has neither the staff or budget to review all state and local laws.

The Commission did not specify any specific height, but only said that local regulations which "involve placement, screening, or height of antennas based on health, safety, or aesthetics considerations must be crafted to accommodate reasonably amateur communications, and to represent the minimum practicable regulation to accomplish the local authorities legitimate purpose. "

This is not an ultimate boost for the amateurs, but it is a reasonably useful statement to waive in front of the local city fathers when they are contemplating an ordinance that

affects antenna height.

The Order will assist with language which states ". . . there is a strong federal interest in promoting amateur communications. . . ." (Para 24). and especially after reciting some of those federal interests, the FCC stated, ". . . Upon weighing these interests, we believe a limited preemption policy is warranted. State and local regulations that operate to preclude amateur communications in their communities are in direct conflict with federal objectives and must be preempted."

The FCC also engaged in a little fact-finding that will make explanations of the interests involved a little easier. "Because amateur station communications are only as effective as the antennas employed, antenna height restrictions directly affect the effectiveness of amateur communications." (Para 25). Court's will not have to wring their hands over whether height affects the effectiveness of amateur antennas. The Commission has said it is so. They also appear to leave a little discretion with the individual radio operator by the discussion between HF and VHF arrays and the type of communications sought to be achieved.

How will this Order be made effective? Well, it can be waived under the nose of a city councilman when he is considering antenna height ordinances, but that might not do a lot of good especially if a little smugness creeps out of the amateur. No, it is better to continue the political exercise that this is. Emphasize the positive aspects of amateur radio and how the local community actually benefits by the presence of an amateur radio operator.

If they feel that they need a nudge, show them a copy of the Order in PRB-1. Many local officials will back off, especially if it involves the federal government. The federal income tax has conditioned them to think that if it involves the federal government, it must be too complicated to worry about, so just do it.

If a city does not want to work any such problem out and litigation is considered, think long and hard before attempting to reverse such a decision. Make sure that the restriction that is chosen is something that is worth fighting about. It may be some time before the 50 foot height of Oklahoma City is worth fighting about.

Remember, to pick a fight with an ordinance that doesn't need overhauling but only fine tuning, you must be care-

ful to make sure that you don't lose the sympathy vote. People who might think that 30 feet is a terrible height restriction may not feel so sympathetic to 55 foot.

The adventure begins now with a search for a proper case to test the FCC's order. Eventually, the Courts will set about to resolve some of these disputes. It is our job to make sure that the restrictions facing an amateur will make a compelling case. It will also be a good idea to have the expert testimony located and ready to go so you can prove to the judge that the restrictions of the city really hurt. After a body of caselaw develops, it will still be necessary to fight a case or two under PRB-1 to ensure that there is definite advantage when using high antennas.

The ARRL should be justifiably proud of itself. PRB-1 will be an important step in the construction of effective antennas. There is still quite a bit of work to be done and it should be done carefully. But it is a start. And thanks should also go to Barry Goldwater who made an important contribution in the introduction of a Senate Resolution supporting PRB-1. Although never passed by the Senate, it showed the support of a very important Senator. If and when Goldwater decides to leave the Senate, he will be sorely missed by amateurs.

Micheal Salem N5MS

#### THE MEXICAN ANTENNA CONNECTION

Nowhere has there been a more vivid demonstration of the need for effective antennas than the recent disaster in Mexico City. And I must begrudgingly admit that some of this garbage I have heard on the bands during Dxpeditions or while the locals were working DX might actually have a purpose in its occurrence.

I spoke to W5UXR, who spent some time after the Mexico City earthquake trying to get some health and welfare messages out of the disaster area. It was not just a matter of whipping into the ham shack and flipping a couple of switches and it was on to Mexico City. I think that Vince spent almost 8 full hours carefully listening waiting to get a message in and then standing by for the reply. Because of the extreme amount of traffic and the QRM, Vince had to get through with a relay because the station in Mexico

City could not hear him direct. This underscores several points. Vince uses a dipole. It is very effective and he has worked quite a few countries, but the problem is that those countries were worked over a period of several months during peak conditions of band openings and optimum circumstances. The need here was effective communications in spite of band conditions and other circumstances. Getting recognized on the band in competition with all of the others is also a problem. And Mexico City is not really a long way off. What if the disaster had been in South America or Europe? The person with the dipole probably would still get through but only after band conditions had favored him or traffic had died down.

The ability to communicate is not really the same as the ability to effectively communicate. I am not saying that only those with towers and beams will get through. I have seen numerous instances where the 100 watts and the dipole can be very effective, but that is just not the norm. The mere existence of beams and towers is proof of their effectiveness.

Amateurs also got a lot of positive publicity out of the Mexico City quake. Appearances on national television programs like Nightline and radio programs like NPR's "All Things Considered" probably help improve the public image overall of amateurs and no doubt should be a prime example to the amateur talking to a city council about antenna height ordinances.

An important thing to realize is that Mexico is a neighbor. One of the reasons that the publicity potential was so great was because there were a lot of people who had friends and relatives in Mexico City. There was just a natural interest.

So I must confess that DXing which I had frequently considered a scourge might actually have a use. Of course, I know a lot of DXers breathe a sigh of relief as if they really cared what I think. That still may not be an excuse for some of the things I have heard on the bands, but who knows.

Micheal Salem N5MS

Before the  
Federal Communications Commission  
Washington, D.C. 20554

In the Matter of )  
 )  
Federal preemption of state and ) PRB-1  
local regulations pertaining )  
to Amateur radio facilities. )

MEMORANDUM OPINION  
AND ORDER

Adopted: September 16, 1985;  
Released: September 19, 1985  
By the Commission: Commissioner Rivera  
not participating.

Background

1. On July 16, 1984, the American Radio Relay League, Inc. (ARRL) filed a Request for Issuance of a Declaratory Ruling asking us to delineate the limitations of local zoning and other local and state regulatory authority over Federally-licensed radio facilities. Specifically, the ARRL wanted an explicit statement that would preempt all local ordinances which provably preclude or significantly inhibit effective, reliable amateur radio communications. The ARRL acknowledges that local authorities can regulate amateur installations to insure the safety and health of persons in the community, but believes that those regulations cannot be so restrictive that they preclude effective amateur communications.

2. Interested parties were advised that they could file comments in the matter. With extension, comments were due on or before December 26, 1984,<sup>1</sup> with reply comments due on or before January 25, 1985.<sup>2</sup> Over sixteen hundred comments were filed.

Local Ordinances

3. Conflicts between amateur operators regarding radio antennas and local authorities regarding restrictive ordinances are common. The amateur operator is governed by the regulations contained in Part 97 of our rules. Those rules do not limit the height of an amateur antenna but they require, for aviation safety reasons, that certain FAA notification and FCC approval procedures must be followed for antennas which exceed 200 feet which are to be erected near airports. Thus, under FCC rules some amateur antenna support structures require obstruction marking and lighting. On the other hand, local municipalities or governing bodies frequently enact regulations limiting antennas and their support structures in height and location, e.g., to side or rear yards, for health, safety and aesthetic considerations. These limiting regulations can result in conflict because the effectiveness of the communications that emanate from an amateur radio station are directly dependent upon the location and the height of the antenna. Amateur operators maintain that they are precluded from operating in certain bands allocated for their use if the height of their antennas is limited by a local ordinance.

4. Examples of restrictive local ordinances were submitted by several amateur operators in this proceeding. Stanley J. Cichy, San Diego, California, noted that in San Diego amateur radio antennas come under a structures ruling which limits building heights to 30 feet. Thus, antennas there are also limited to 30 feet. Alexander Vrenios, Mundelein, Illinois wrote that an ordinance of the Village of Mundelein provides that an antenna must be a distance from the property line that is equal to one and one-half times its height. In his case, he is limited to an antenna tower for his amateur station just over 53 feet in height.

5. John C. Chapman, an amateur living in Bloomington, Minnesota, commented that he was not able to obtain a building permit to install an amateur radio antenna exceeding 35 feet in height because the Bloomington city ordinance restricted "structures" heights to 35 feet. Mr. Chapman said that the ordinance, when written, undoubtedly applied to buildings but was now being applied to antennas in the absence of a specific ordinance regulating them. There were two options open to him if he wanted to engage in amateur communications. He could request a variance to the ordinance by way of a hearing before the City Council, or he could

obtain affidavits from his neighbors swearing that they had no objection to the proposed antenna installation. He got the building permit after obtaining the cooperation of his neighbors. His concern, however, is that he had to get permission from several people before he could effectively engage in radio communications for which he had a valid FCC amateur license.

6. In addition to height restrictions, other limits are enacted by local jurisdictions—anti-climb devices on towers or fences around them; minimum distances from high voltage power lines; minimum distances of towers from property lines; and regulations pertaining to the structural soundness of the antenna installation. By and large, amateurs do not find these safety precautions objectionable. What they do object to are the sometimes prohibitive, non-refundable application filing fees to obtain a permit to erect an antenna installation and those provisions in ordinances which regulate antennas for purely aesthetic reasons. The amateurs contend, almost universally, that "beauty is in the eye of the beholder." They assert that an antenna installation is not more aesthetically displeasing than other objects that people keep on their property, e.g., motor homes, trailers, pick-up trucks, solar collectors and gardening equipment.

Restrictive Covenants

7. Amateur operators also oppose restrictions on their amateur operations which are contained in the deeds for their homes or in their apartment leases. Since these restrictive covenants are contractual agreements between private parties, they are not generally a matter of concern to the Commission. However, since some amateurs who commented in this proceeding provided us with examples of restrictive covenants, they are included for information. Mr. Eugene O. Thomas of Hollister, California included in his comments an extract of the Declaration of Covenants and Restrictions for Ridgemark Estates, County of San Benito, State of California. It provides:

No antenna for transmission or reception of radio signals shall be erected outdoors for use by any dwelling unit except upon approval of the Directors. No radio or television signals or any other form of electromagnetic radiation shall be permitted to originate from any lot which may unreasonably interfere with the reception of television or radio signals upon any other lot.

Marshall Wilson, Jr., provided a copy of the restrictive covenant contained in deeds for the Bell Martin Addition #2, Irving, Texas. It is binding upon all of the owners or purchasers of the lots in the said addition, his or their heirs, executors, administrators or assigns. It reads:

No antenna or tower shall be erected upon any lot for the purposes of radio operations.

William J. Hamilton resides in an apartment building in Gladstone, Missouri. He cites a clause in his lease prohibiting the erection of an antenna. He states that he has been forced to give up operating amateur radio equipment except a hand-held 2 meter (144-148 MHz) radio transceiver. He maintains that he should not be penalized just because he lives in an apartment.

Other restrictive covenants are less global in scope than those cited above. For example, Robert Webb purchased a home in Houston, Texas. His deed restriction prohibited "transmitting or receiving antennas extending above the roof line."

8. Amateur operators generally oppose restrictive covenants for several reasons. They maintain that such restrictions limit the places that they can reside if they want to pursue their hobby of amateur radio. Some state that they impinge on First Amendment rights of free speech. Others believe that a constitutional right is being abridged because, in their view, everyone has a right to access the airwaves regardless of where they live.

9. The contrary belief held by housing subdivision communities and condominium or homeowner's associations is that amateur radio installations constitute safety hazards, cause interference to other electronic equipment which may be operated in the home (televisions, radio, stereos) or are eyesores that detract from the aesthetic and tasteful appearance of the housing development or apartment complex. To counteract these

negative consequences, the subdivisions and associations include in their deeds, leases or by-laws restrictions and limitations on the location and height of antennas or, in some cases, prohibit them altogether. The restrictive covenants are contained in the contractual agreement entered into at the time of the sale or lease of the property. Purchasers or lessees are free to choose whether they wish to reside where such restrictions on amateur antennas are in effect or settle elsewhere.

Supporting Comments

10. The Department of Defense (DOD) supported the ARRL and emphasized in its comments that continued success of existing national security and emergency preparedness telecommunications plans involving amateur stations would be severely diminished if state and local ordinances were allowed to prohibit the construction and usage of effective amateur transmission facilities. DOD utilizes volunteers in the Military Affiliate Radio Service (MARS), Civil Air Patrol (CAP) and the Radio Amateur Civil Emergency Service (RACES). It points out that these volunteer communicators are operating radio equipment installed in their homes and that undue restrictions on antennas by local authorities adversely affect their efforts. DOD states that the responsiveness of these volunteer systems would be impaired if local ordinances interfere with the effectiveness of these important national telecommunication resources. DOD favors the issuance of a ruling that would set limits for local and state regulatory bodies when they are dealing with amateur stations.

11. Various chapters of the American Red Cross also came forward to support the ARRL's request for a preemptive ruling. The Red Cross works closely with amateur radio volunteers. It believes that without amateurs' dedicated support, disaster relief operations would significantly suffer and that its ability to serve disaster victims would be hampered. It feels that antenna height limitations that might be imposed by local bodies will negatively affect the service now rendered by the volunteers.

12. Cities and counties from various parts of the United States filed comments in support of the ARRL's request for a Federal preemption ruling. The comments from the Director of Civil Defense, Fort Arthur, Texas are representative:

The Amateur Radio Service plays a vital role with our Civil Defense program here in Fort Arthur and the design of these antennas and towers lends greatly to our ability to communicate during times of disaster.

We do not believe there should be any restrictions on the antennas and towers except for reasonable safety precautions. Tropical storms, hurricanes and tornadoes are a way of life here on the Texas Gulf Coast and good communications are absolutely essential when preparing for a hurricane and even more so during recovery operations after the hurricane has past.

13. The Quarter Century Wireless Association took a strong stand in favor of the issuance of a declaratory ruling. It believes that Federal preemption is necessary so that there will be uniformity for all Amateur radio installations on private property throughout the United States.

14. In its comments, the ARRL argued that the Commission has the jurisdiction to preempt certain local land use regulations which frustrate or prohibit amateur radio communications. It said that the appropriate standard in preemption cases is not the extent of state and local interest in a given regulation, but rather the impact of that regulation on Federal goals. Its position is that Federal preemption is warranted whenever local governmental regulations relate adversely to the operational aspects of amateur communication. The ARRL maintains that localities routinely employ a variety of land use devices to preclude the installation of effective amateur antennas, including height restrictions, conditional use permits, building setbacks and dimensional limitations on antennas. It sees a declaratory ruling of Federal preemption as necessary to cause municipalities to accommodate amateur operator needs in land use planning efforts.



15. James C. O'Connell, an attorney who has represented several amateurs before local zoning authorities, said that requiring amateurs to seek variances or special use approval to erect reasonable antennas unduly restricts the operation of amateur stations. He suggested that the Commission preempt zoning ordinances which impose antenna height limits of less than 65 feet. He said that this height would represent a reasonable accommodation of the communication needs of most amateurs and the legitimate concerns of local zoning authorities.

#### Opposing Comments

16. The City of La Mesa, California has a zoning regulation which controls amateur antennas. Its comments reflected an attempt to reach a balanced view.

This regulation has neither the intent, nor the effect, of precluding or inhibiting effective and reliable communications. Such antennas may be built as long as their construction does not unreasonably block views or constitute eyesores. The reasonable assumption is that there are always alternatives at a given site for different placement, and/or methods for aesthetic treatment. Thus, both public objectives of controlling land use for the public health, safety, and convenience, and providing an effective communications network, can be satisfied.

A blanket ruling to completely set aside local control, or a ruling which recognizes control only for the purpose of safety of antenna construction, would be contrary to ... legitimate local control.

17. Comments from the County of San Diego state:

While we are aware of the benefits provided by amateur operators, we oppose the issuance of a preemption ruling which would elevate 'antenna effectiveness' to a position above all other considerations. We must, however, argue that the local government must have the ability to place reasonable limitations upon the placement and configuration of amateur radio transmitting and receiving antennas. Such ability is necessary to assure that the local decision-makers have the authority to protect the public health, safety and welfare of all citizens.

In conclusion, I would like to emphasize an important difference between your regulatory powers and that of local governments. Your Commission's approval of the preemptive request would establish a 'national policy'. However, any regulation adopted by a local jurisdiction could be overturned by your Commission or a court if such regulation was determined to be unreasonable.

18. The City of Anderson, Indiana, summarized some of the problems that face local communities:

I am sympathetic to the concerns of these antenna owners and I understand that to gain the maximum reception from their devices, optimal location is necessary. However, the preservation of residential zoning districts as 'liveable' neighborhoods is jeopardized by placing these antennas in front yards of homes. Major problems of public safety have been encountered, particularly vision blockage for auto and pedestrian access. In addition, all communities are faced with various building lot sizes. Many building lots are so small that established setback requirements (in order to preserve adequate air and light) are vulnerable to the unregulated placement of these antennas.

... the exercise of preemptive authority by the FCC in granting this request would not be in the best interest of the general public.

19. The National Association of Counties (NACO), the American Planning Association (APA) and the National League of Cities (NLC) all opposed the issuance of an antenna preemption ruling. NACO emphasized that federal and state power must be viewed in harmony and warns that Federal intrusion into local concerns of health, safety and welfare could weaken the traditional police power exercised by the state and unduly interfere with the legitimate activities of the states. NLC believed that both Federal and local interests can be accommodated without preempting local authority to regulate the installation of amateur radio antennas. The APA said that the FCC should continue to leave the issue of regulating amateur antennas with the local government and with the state and Federal courts.

#### Discussion

20. When considering preemption, we must begin with two constitutional provisions. The tenth amendment provides that any powers which the constitution either does not delegate to the United States or does not prohibit the states from exercising are reserved to the states. These are the police powers of the states. The Supremacy Clause, however, provides that the constitution and the laws of the United States shall supersede any state law to the contrary. Article III, Section 2. Given these basic premises, state laws may be preempted in three ways: First, Congress may expressly preempt the state law. See *Jones v. Rath Packing Co.*, 430 U.S. 519, 525 (1977). Or, Congress may indicate its intent to completely occupy a given field so that any state law encompassed within that field would implicitly be preempted. Such intent to preempt could be found in a congressional regulatory scheme that was so pervasive that it would be reasonable to assume that Congress did not intend to permit the states to supplement it. See *Fidelity Federal Savings & Loan Ass'n v. de la Cuesta*, 458 U.S. 141, 153 (1982). Finally, preemption may be warranted when state law conflicts with federal law. Such conflicts may occur when "compliance with both Federal and state regulations is a physical impossibility." *Florida Lime & Avocado Growers, Inc. v. Paul*, 373 U.S. 132, 142, 143 (1963), or when state law "stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress." *Hines v. Davidowitz*, 312 U.S. 52, 67 (1941). Furthermore, federal regulations have the same preemptive effect as federal statutes. *Fidelity Federal Savings & Loan Association v. de la Cuesta*, supra.

21. The situation before us requires us to determine the extent to which state and local zoning regulations may conflict with federal policies concerning amateur radio operators.

22. Few matters coming before us present such a clear dichotomy of viewpoint as does the instant issue. The cities, counties, local communities and housing associations see an obligation to all of their citizens and try to address their concerns. This is accomplished through regulations, ordinances or covenants oriented toward the health, safety and general welfare of those they regulate. At the opposite pole are the individual amateur operators and their support groups who are troubled by local regulations which may inhibit the use of amateur stations or, in some instances, totally preclude amateur communications. Aligned with the operators are such entities as the Department of Defense, the American Red Cross and local civil defense and emergency organizations who have found in Amateur Radio a pool of skilled radio operators and a readily available backup network. In this situation, we believe it is appropriate to strike a balance between the federal interest in promoting amateur operations and the legitimate interests of local governments in regulating local zoning matters. The cornerstone on which we will predicate our decision is that a reasonable accommodation may be made between the two sides.

23. Preemption is primarily a function of the extent of the conflict between federal and state and local regulation. Thus, in considering whether our regulations or policies can tolerate a state regulation, we may consider such factors as the severity of the conflict and the reasons underlying the state's regulations. In this regard, we have previously recognized the legitimate and important state interests reflected in local zoning regulations. For example, in *Earth Satellite Communications, Inc.*, 95 FCC 2d 1223 (1983), we recognized that

... countervailing state interests inhere in the present situation ... For example, we do not wish to preclude a state or locality from exercising jurisdiction over certain elements of an SMATV operation that properly may fall within its authority, such as zoning or public safety and health, provided the regulation in question is not undertaken as a pretext for the actual purpose of frustrating achievement of the preeminent federal objective and so long as the non-federal regulation is applied in a nondiscriminatory manner.

24. Similarly, we recognize here that there are certain general state and local interests which may, in their even-handed application, legitimately affect amateur radio facilities. Nonetheless, there is also a strong federal interest in promoting amateur communications. Evidence of this interest may be found in the comprehensive set of rules that the Commission has adopted to regulate the amateur service.<sup>1</sup> Those rules set forth procedures for the licensing of stations and operators, frequency allocations, technical standards which amateur radio equipment must meet and operating practices which amateur operators must follow. We recognize the Amateur Radio Service as a voluntary, noncommercial communication service, particularly with respect to providing emergency communications. Moreover, the Amateur Radio Service provides a reservoir of trained operators, technicians and electronic experts who can be called on in times of national or local emergencies. By its nature, the Amateur Radio Service also provides the opportunity for individual operators to further international goodwill. Upon weighing these interests, we believe a limited preemption policy is warranted. State and local regulations that operate to preclude amateur communications in their communities are in direct conflict with federal objectives and must be preempted.

25. Because amateur station communications are only as effective as the antennas employed, antenna height restrictions directly affect the effectiveness of amateur communications. Some amateur antenna configurations require more substantial installations than others if they are to provide the amateur operator with the communications that he/she desires to engage in. For example, an antenna array for international amateur communications will differ from an antenna used to contact other amateur operators at shorter distances. We will not, however, specify any particular height limitation below which a local government may not regulate, nor will we suggest the precise language that must be contained in local ordinances, such as mechanisms for special exceptions, variances, or conditional use permits. Nevertheless, local regulations which involve placement, screening, or height of antennas based on health, safety, or aesthetic considerations must be crafted to accommodate reasonably amateur communications, and to represent the minimum practicable regulation to accomplish the local authority's legitimate purpose.<sup>2</sup>

26. Obviously, we do not have the staff or financial resources to review all state and local laws that affect amateur operations. We are confident, however, that state and local governments will endeavor to legislate in a manner that affords appropriate recognition to the important federal interest at stake here and thereby avoid unnecessary litigation in this area. Amateur operators who believe that local or state governments have been overreaching and thereby have precluded accomplishment of their legitimate communications goals, may, in addition, use this document to bring our policies to the attention of local tribunals and forums.

27. Accordingly, the Request for Declaratory Ruling filed July 16, 1984, by the American Radio Relay League, Inc., IS GRANTED to the extent indicated herein and, in all other respects, IS DENIED.

FEDERAL COMMUNICATIONS  
COMMISSION  
William J. Tricarico  
Secretary

#### Notes

<sup>1</sup>Public Notice, August 30, 1984, Mimeo No. 6299, 49 F.R. 36113, September 14, 1984.

<sup>2</sup>Public Notice, December 19, 1984, Mimeo No. 1498.

<sup>3</sup>Order, November 8, 1984, Mimeo No. 770.

<sup>4</sup>MARS is solely under the auspices of the military which recruits volunteer amateur operators to render assistance to it. The Commission is not involved in the MARS program.

<sup>5</sup>47 CFR Part 97.

<sup>6</sup>We reiterate that our ruling herein does not reach restrictive covenants in private contractual agreements. Such agreements are voluntarily entered into by the buyer or tenant when the agreement is executed and do not usually concern this Commission.



# -FILE ZERO-

In my collection of trivia, I have a small poster inscribed as follows:

AGE and TREACHERY  
Will Overcome  
YOUTH and TALENT

I'd like to modify that to change the word "treachery" to "experience". I'm just now getting to the place in my life where I think I know a little about a few things. In my youth, I was virtually certain I know just about all there was to know about everything. That attitude was subsequently changed in the "school of hard knocks" which I often attended (and still do, more often than not). Those "knocks" have a way of instilling caution in a person, as we all know. At one time, I was able to give what I considered to be quite high quality advice to others quite freely. One group I advised frequently, often without being asked, were my elders. I went through a fair portion of my life believing that no person of any age greater than mine could, by any stretch of the imagination, have as good a grasp on the world as I. There was a correlary effect of my advisory service to my elders that I've just now begun to recognize. That is, that while I was engaged in dispensing from my largess of knowledge, I was failing to acquire the habit of listening to my elders. This was, I suppose, the result of a youthful mindset that what my elders had to say would be largely meaningless (at least to me). I've lived to regret that egocentered view more than once during the ensuing years.

Now I am "elder" for a number of youthful associates, and have been allowed to receive a fair portion of the same kind of advice I once dispensed with such generosity. I find myself, in turn, dispensing advice and counsel. The interesting thing is that my advice is received in much the same way I once did. So, nowadays I find myself a little more reserved in the advice giving arena. Occasionally, I find myself entering into great dialogues with folks, but only in those areas where I know damned well I possess superior knowledge, and can hold my own. After all, time shouldn't make

you any dumber, should it?

There is one area in which I still dispense advice. I still insist that people quit trying to increase CW copy speed by copying those idiotic five or seven letter groups. CW is just another language that is not native to a person. To learn any new language, one requires a basic understanding of the structure of the language, and a familiarity with the looks and sounds of the language. In the case of CW (or Morse code) the sounds of individual letters are important. However, once the ability to discern individual letter character sounds is mastered, then the syntax of the language must be acquired in order to communicate with it. Any language is, after all, a communication medium which means the passage of some intelligence is intended with its use. So why try to improve your communication skills by using the media to transmit gibberish? One doesn't learn German or French by listening to or reading gibberish. The same principle should apply to the Morse code. So, in the advice area, improve your CW copy speed by either copying message format text if you want to become a hot-shot traffic mandler, or by copying conversational text. I advise trying to copy solid while you are getting your speed up, but then convert to "note taking" if you are going to move on up with the burnout artists who hang around forty and twenty meters. - end of soapbox -

Chapter 63 is growing. And, so is it's birthday list for November. This month, we have a long and illustrious list for your information.

## NOVEMBER:

4 Lynn E. Scott W5FMO  
5 Joe McKinsey W5YPN

## NOTICE

To all Persons, Exchanges, New Subscribers, Correspondents, etc. who desire to correspond with the CORA C&E - PLEASE - address your communications to:

CORA Collector & Emitter  
1020 Arthur Drive  
Midwest City OK 73110

We have cancelled our P.O. Box.

5	Gene Nailon	K5DLE
6	Laura Cash	XYL-W5PML
7	Ken Jessup	W5EIO
7	Ron Twelves	W5QOZ
8	Sam Isaacs	W5UGA
10	Fern Scott	XYL-W5GPD
11	John Dalby	W5COE
15	Paul Kovar	W5CDG
16	Norman Wilson	W5FLO
19	Verginia Scott	XYL-W5FMO
22	George W. Bunce	W5DKC
23	Sophia Ard	XYL-W5JME
24	Al Rauscher	K5CXP
26	Raymond Willis	W5ATO

Now, That's a bunch of birthdays! Congratulations to all of you from all of us.

Here is the traffic report for September 1985 as provided by our Sec/Treas Howard, W5AS:

SESSIONS	5
CHECKINS	177
TRAFFIC	17

Please note this month you once again got treated to another ration of "Rob's Ramblings" in lieu of anything better to publish in this spot. If you want to improve the tone of this column you, gentle reader, must contribute something. Meanwhile, this editor refrains from comparing himself with the Maytag repairman, but the temptation to do so is great.

Very 73 to all, and happy turkey day to all the turkeys out there, and happy Thanksgiving day to all the rest of you.

Rob, AA00.

## -FILE ZERO ADDENDUM-

I finished FILE ZERO early this month, and transmitted it to Joe. Immediately thereafter I was requested by Chairman Fred to report on the Quarterly Meeting held on Sunday October 20. The following is that report written on the afternoon of the meeting, and transmitted immediately thereafter to Joe.

Chairman Fred called the group to order with 42 members and guests in attendance. Ralph, W5AA lead the group in the opening prayer, and Fred, W5NL lead the Pledge of Allegiance. Our featured speaker was Detective "Sugar" Smith of the Oklahoma City Police. His subject was to have been something on the Crime Stoppers program, but Detective Smith was unable to locate our group assembled in the meeting room in the motel. Our plans for an interesting program were thus thwarted because the

(CONTINUED NEXT PAGE.)

detective could not locate us...

Self introductions were made among those gathered, and we discovered Dave, W5YDY, has returned to town for a little training at the FAA Academy, and had joined us for the day. Dave was put to work as the "drawer" for some nifty door prizes made by Mrs. Bunce, XYL-W5DKC. Only the ladies present were given tickets for the drawing, and that made it pretty special. The Grand Prize really was! Howard, W5AS, and Sec/Treas. for the Chapter made a very nice little kindling (or magazine) holder which was won by Meg Benson, XYL-KA5DGY. Thanks to both fine folks for their clever creations, and for donating them to the Chapter. We understand Mrs. Bunce is quite well known for her lovely, and useful creations.

Ellard Foster, W5KE was recognized for his 50 year continuously licensed status, and Ralph Rea, W5AA for being chosen for the international nominating committee next year.

We have had a new Constitution and By-Laws in circulation for several months, and W5AS moved we adopt them as written, the motion carried.

CORA has raised it's contribution requirements for C&E publication to \$4.20 per Chapter member per annum. Since our dues are only \$5.00 per annum for the local chapter, the increase has precipitated a financial crisis. Fairly spirited debate was held with most of us having opinions getting them expressed. The net result is as follows:

QCWA Chapter 63 will continue it's affiliation with CORA, and continue to contribute to the publication of C&E at the new rates. Concurrently Chapter dues will increase to \$8.00 per annum for local dues plus whatever the International requires. The new dues structure will be effective with 1986. There are 17 chapter members who are prepaid through 1986, and 3 who are prepaid through 1987. The By-Laws prohibit retroactive increases, so it was decided that those members will be "requested" to make up the \$3.00 increases with no penalty if they don't. (This editor is one of those paid through 1987, so I'll be getting "billed" for \$6.00 which I will gladly pay.)

Having decided those issues, the members turned to a

preliminary discussion of Chapter activities in connection with HH-86. A vote was taken, following discussion, with these results:

1. We will again host a QCWA breakfast (assuming facilities are available at the HH-86 site.
2. We will again volunteer the Chapter to man the ARRL booth.

In the same vote, an unrelated issue was also discussed and adopted. Chapter 63 will advise the International that we will once again tally the election when our turn rotates around again. (there are over a hundred chapters, so that means that in a hundred years we are committed to again tally the election - slick move, Howard.) Chapter 63 was highly praised for it's work in the last international election.

Jerry Broudy, W5MCJ brought some rare old telegraph apparatus to the meeting for show-off. He had to wrap an old "side-swiper" hand key in plastic to keep me from drooling on it too much. I made him promise to put me in his will for that one! I would like to have it, but hope never to receive it under those conditions Jerry. Jerry also showed up with a beautifully preserved (restored?) "listening stick", a simple device used by old-time relay operators working around multiple line sounders. I couldn't believe I was the only one there who recognized it. The game was sort of like "WouffHoung" identification used to be. It was fun, and I enjoyed seeing one of those things again. When Jerry first showed it to me, I knew it was familiar, but it took a bit to recall it. Thanks Jerry for the show. Dick, W5FW and I got to talking after the meeting, and Dick said he recognized it, but it was for a different purpose. Dick avowed the device was used by his people years ago to listen for white men coming. Someone else wondered if the device could be used to detect stuck valves in a truck engine.

The last item on the agenda had to do with the place for the next meeting. The Airport Sheraton charged us for use of the meeting room even though quite a few people ate lunch there before the meeting. It was decided after discussion, that the Executive Committee would investigate alternate arrangements, possibly at one of the local cafeterias such as Dobsons. Watch this space for further developments in that

## EDMOND AMATEUR RADIO SOCIETY

Our most interesting meeting was last Saturday for the H. B. Buffs. We worked on verticle antennas and loading coils. Our success was dattered by a later discovery that our aluminum was insulated and we were not getting our SWR was as high as 3 to 1. Well they tell me that by buffing the alminum both externally and internally that the problem was solved and the SWR was broughtdown to as low as 1.5 to 1. We did succeed in getting on 15 Meters with the HW 101 and talked to CX2FV Italo in Tararriras, Uruguay which is about 100 miles North West of Montivideo. So much was learned and happiness felt by our DX contact. I hope we can have another one of these events as I believe we will accomplish much more next time from what we learned from our errors this time. Thanks to KA5UOS Don Kelly for locating the problem with the bad contact on our aluminum verticle antenna material.

Remember code practice is at 8:00PM Mon.Tues. and Weds. every week and goes from 7WPM to 13WPM each session and is conducted by Bob KA0CVK.

The Novice classes have about 18 students and the General Code class has about 12 students. The teachers who keep this going are Robert Thomason, Steve Stepp, Don Kelly and Ken Stepp.

Also remember the CPR classes and contact KA0CVK Bob Thomason for further information as the times have been altered since they were published previously.

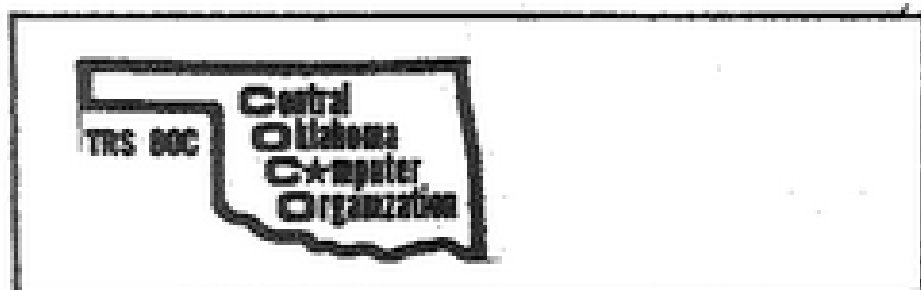
We all had a very good time at Pepes Pizza and we had about 26 people present. It seems as though that things just seem to get better and better for the Old EARS Club. Bill K5SKA

department. Chairman Fred passed the hat to cover the extra charges levied by the motel. (I won't publish the amount they charged, but it was substantial.-.ed)

In the Last-But-Not-Least department, this editor must post a disclaimer for accuracy or completeness of the forgoing, since I'm neither a good note taker or listener, as almost anyone who knows me will attest.

Any corrections or omissions will be either corrected, or de-omitted in next month's issue of this column.

Very 73 - Rob AA00



Club Dues: \$10.00 per year

Meeting called to order by Bob Pace at 9:10 A.M. 112 members/guests attended the meeting on October 12, 1985.

1. Elections - new officers will be elected at the December meeting. Bob Pace announced the nominating committee members at the October meeting. Jim Seals, Al Ward, Larry Griffin, or Harold Todd may be calling YOU to serve as an officer for 1986!

2. Hardware and Software Problems - a) There seems to be a problem loading and reloading Spectrum cartridges. b) Disconnect your disk controller (with your system OFF) before trying to use the program "ORANGE" from HOT COCO. The program must be tape-based. c) MABEL uses the upper 32K of RAM for the buffer.

d) Herb needs an operators manual for an ANADEx (heavy) printer. e) Sam Murr is seeking operating instructions for VIP Calc. f) TV interference may be controlled with a Magic transformer. A channel 33 UHF modulator box may help, also. g) Does anyone out there have or know of a trigonometry program for the COCO? Let us know.

3. David Coburn and his wife have produced an excellent program of graphics and music for the Christmas holiday season. The program will run on 1 or 2 disk drives with more selections available on 2 drives. David is offering this program for only \$5.00 for 1 disk (if you have 2 drives bring him a blank for the second part of the program).

4. Paul Asplin has been selling the Gold C coupon books to benefit COCO. At last report Paul has raised \$154.00 for the club. Thanks to Paul.

5. Door Prizes - lucky winners included:

Clyde Mapes - keyboard  
Paul Asplin - power strip  
Dale Goad - disk file box  
Dwayne Woodson - Rainbow  
Kevin Roberts - cooling fan  
Ruthann Roberts - Chromacassette  
Howard Wilson II - Flight Simulator  
Sam Murr - OS9  
Rick Garner - Satellite Dealers Guide  
Jason Walter - Low Band Communicator Kit

Thanks to Nathan Roberts for drawing for the door prizes. Many of the door prizes are purchased with profits from the coffee/donut fund. Others are donated by individual club

members.

6. MABEL - MABEL may be purchased by club members. See one of the club officers if you need a copy. Please, do not upload MABEL on the net. Cost is \$20.00 to non-members.

7. Many thanks to Bill Holland for his excellent program on the disk system.

8. A big thanks to Larry Griffin for presenting his program on Easy Sort, a sort utility.

9. A special note of thanks to Bob Pace and the club for allowing Michael Haworth to have the 16K expansion module for his MC-10. Michael was thrilled to say the least. He sends every one his thanks.

10. A reminder - All dues will be due at the December meeting. Since we will be closing our set of books prior to the new officers' taking the reigns in Jan. - we would like to have accurate records.

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

Secretary/Treasurer  
Kaye Derryberry

#### Judy's Goodies

Have you ever wished you had the knowledge and experience of a professional chef in your kitchen?"

These bold words are the introduction to CookBook, the new software from Tandy for tomorrow's homemaker. It sounds like a pretty lofty promise, but believe me, CookBook comes close to living up to it. Follow along while we run it through its paces.

In addition to your Color Computer and monitor (preferably color) you will need at least a single disk drive. A serial printer is a "nice to have" option for this program also. Ready? Run!". The display will ask you if you have one or two drives available. If you have two single drives, you will need to have the program and the recipe files on two separate disks. If you want to put everything on a double sided disk and do not have a double sided drive, then tell the program that you only have one drive available (even if you have more). The program will prompt you to turn over the diskette at the proper time. In fact this program is fairly user friendly with its prompts so I will skip over a lot of the commands that the program itself will prompt you for.

The Main Menu comes to the screen giving you a choice between Menu Planner and Recipe Index. Let's explore Menu Planner first. Now the following options will appear: Create a Meal, Select Beverage, and Create a New Dish. First we will Create a Meal.

Have you ever had your spouse call home saying he/she is bringing home a few friends or, worse yet, the boss for

dinner and you wonder what to fix? Perhaps you want to invite over some influential socialite-types to impress people in the right places by throwing an elegant dinner party. Maybe you are just too burnt out from making supper night after night to be able to come up with some new ideas. Whatever the occasion or time of day, Create a Meal can be a helping hand out of any hole you or your loving family have dug for you. First, Create a Meal will quiz you to find the exact circumstances being thrust upon it. Tell it what meal type you need (breakfast, dinner, late supper, formal, informal, etc.), what you want primarily in the recipes (meat, seafood, cheese - whatever you have a craving for or whatever you need to get out of the refrigerator before it becomes green and fuzzy), whether you want a light or heavy meal (are you inviting over your aerobics instructor or your bridge partners) and what cost range to stick to. If you tell CookBook "Do Not Worry About Price" then YOU better be prepared to worry about it - a lot. The documentation for CookBook gives the definition for the various meal types to aid in the proper selection. It also warns that selecting a Formal meal (to be served formally and in courses) will require 1. skill and 2. help, with emphasis on number 2. Do not attempt a formal meal without two or three assistants (preferably all caterers while you soak in a tub and relax).

After answering all these questions CookBook will conduct a file search. This entire program is in basic so it is fairly slow. Now is your chance to go bathe the baby or finish "War and Peace". At some time it will finish looking at the data bank to find recipes that meet the criteria you set forth and sorts them into categories (Hot d'oeuvre, soup, salad, etc) and will issue forth 4 menus. Scroll through the menus using the arrow keys and jot down the names of the items that interest you in order to retrieve them from the Recipe Index, which I will cover later.

Now go back to the Menu Planner menu. Choose Select Beverage. This option seems a little frivolous as most people have a pretty good idea what they wish to drink, but maybe you would like something new or would like some guidelines as to what is "proper" for one of those Formal meals. I hope you aren't a teetotaler though, because about the only non-alcoholic beverage it suggests with a formal meal is water (optional).

After you have played with Select Beverage for a while go back to the menu and choose Create a New Dish. This is for the times when you don't want an entire menu but want some help camouflaging ground beef for the third time this week, or the leftover leftover pork chops. Tell CookBook what main ingredient you wish to disguise - er - cook. It offers a complete selection. CookBook will suggest ways to prepare it, such as broiling, frying,



etc, and suggest sauces to accompany it. A word of caution though. Some of the sauces it suggests are not found within the Recipe Index so an encyclopedia of cooking may be needed. If you don't like any of the suggestions then return to Choose a Main Ingredient and try again. It will continue to give you new suggestions. Or give up and tell your husband he's forgotten what day today is and while he's trying to remember what anniversary or birthday he has forgotten he can take you to Applewood's for dinner while Fido has the leftover leftovers.

That pretty well covers the Menu Planner. Now we can investigate the Recipe Index. From the Main Menu for Recipe Index let's select Browse Listings. From this you can scan the entire list of recipes in the data bank. When the Browse Listings Menu appears you can access a full listing, food category or meal type. After selecting an option the computer will prompt you as to whether or not you want a printout. If you select N(no) the recipes are listed on your screen only. If you select Y(yes) then the printer will print the information as it appears on your screen. If you select full listing a page of recipe names will appear. Press the spacebar to view the next page. At the end of the listing or at any time you wish to discontinue viewing the recipes push the up arrow key. This returns you to the Browse Menu. Selecting the Food Categories option lets you view the recipes by category such as meat, seafood, soup, hors d'oeuvres, etc. The up arrow key again will return you to the Browse Menu whenever you wish. If you wish to use the Meal Type option you are once more given a choice of informal lunch, late supper, outdoor dinner, etc., and those recipes will be displayed.

Once you have looked over the recipe names and have decided which one you want to work with you are ready for the Retrieve Recipe option on the Recipe Index Menu. Once the "chef" finishes loading that portion of the program (and remember it's slow) the screen will say "Enter a recipe for file search/(enter) for last recipe. If you want to recall the last recipe you entered before searching for a new one, simply press enter. To search for a new recipe, simply type the exact name of the recipe you wish to view. If the name you enter is not exact the screen will display the six closest alphabetical matches to your input. At the bottom of the list the program asks if you wish to insert another disk to continue searching.

(NOTE: I just remembered something very important! When retrieving the recipe from the index the recipe is then "written" onto the program disk for the manipulation for the various options, therefore you must have the write protect tab OFF of the program disk. I know this is very risky but necessary, so be sure to have a backup disk just in case.)

Okay. Now you have retrieved a recipe. Each recipe listing will include: Number of servings, serving size, calories per serving (ouch), preparation time (better allow a little extra time until you get used to the program), meal categories, food groups present, food categories, cost, size (light, moderate or heavy recipe), ingredients, utensils, and preparation instructions. All this information will whiz by on your screen without control so just relax. Once it finishes another menu appears. This displays the title of the recipe and gives a choice of scrolling through the recipe on your screen at your own pace, printing out the recipe on your printer, creating a shopping list to stick in your purse, scaling the recipe up or down, return to retrieve recipe menu, or return to recipe index menu. In the scroll through recipe mode there are two additional features available: HELP and SET TIME.

If the instructions use a term with which you are not familiar (suppose you aren't sure what they mean by saute) press "H" and enter the term you want defined. The definition is retrieved from a cooking term glossary and appears on the screen. Press the spacebar to return to the recipe. To SET TIME press "T". Enter the amount of time using the HH(enter) MM(enter) SS(enter) format. For Example, to set 10 minutes you would enter 00(enter) 10(enter) 00(enter). After verifying your entry a clock will appear set for the time you indicated. The program then automatically returns to the recipe. If you wish to check on the time while in the scroll mode, simply press "T". When the time has lapsed the clock reappears and a little tune is played to let you know the time is up. The Print Out Recipe option will print the entire recipe with all information and instructions on your printer. The Create a Shopping List will ask if you want a printout from your printer. If not, the shopping list will appear only on your screen.

A nice option of this program is the Scale the Recipe Up or Down. The screen will display the number of people the recipe will currently serve and ask how many people you want it to serve. You can enter any number between 2 and 99. If you try to scale it down smaller than is feasible for the ingredients the program will tell you to enter a different value. When the scaling process is complete all measurements will reflect the new amounts when scrolling through the recipe. Unfortunately this handy option is available only when accessing the recipes that come with Cook Book's original recipe files, and not for your own recipes. Where do I put my own recipes in the first place? you ask. Return to the Recipe Index Menu. (Remember that up arrow key!) Now we can explore the final feature of Cook-Book. File New Recipe.

You must have a separate, formatted diskette. After the program is loaded you enter the name of your recipe, up

to 30 characters, and press enter. The name of the recipe will appear at the top of the screen. At the prompt, enter the number of people the recipe will serve and press enter. The screen will now prompt for ingredients. Press enter after each one with one additional enter when all the ingredients are used. Now you can list the utensils needed, or press enter twice to bypass. Finally you enter the preparation instructions. When you are finished press the up arrow key to end the recipe. The recipe name will appear along with the option to continue input, edit the recipe, file the recipe, abandon and restart or return to the menu. If you choose to continue you can add additional information at the end of the recipe only. If you wish to edit the recipe, the last for lines of the recipe will appear, from which you can scroll up or down using the arrow keys. When you find the line that needs changing, place it between the two blue lines in the middle of the screen. Press clear. Move backwards through the line using the arrow key and correct where necessary. When it is correct press enter. You can only change in this mode, not add to, so be careful! To return to your options press shift clear. To File the Recipe on your diskette press F. The screen will prompt you through to place your recipe on the disk. When it is saved the program returns to the Recipe Index Menu. To erase the recipe you entered instead of saving it choose the Abandon and Restart option. Press the up arrow key if you have no recipe to re-enter. If you return to the Recipe Index Menu you now have all the options available with your own recipe file disk as with CookBook's own file disk, except the scale and shopping list options.

And there you have it. I know that this is a pretty lengthy review but it's a pretty versatile little program. At least it is a step in the right direction for the homes and homemakers of today. I don't know if I can top this program but I'll search for something else to review next month. If it's this lengthy again maybe I'll break it up into a couple of month's. If you have any you would like to see reviewed, let me know. Until then. Judy

FOR SALE: 64k greybox COCO w/new COCO 2 keyboard, RS disk controller w/RS-DOS V 1.0, RS single drive. All like new. System documentation. \$300. Bob Finley, 691-5800.

HAVE YOU  
WORKED  
PUBLIC  
SERVICE  
LATELY ?

# VOLUNTEER EXAMINER PROGRAM

V.E. TEST SESSIONS ARE HELD THE 4TH MONDAY OF EACH MONTH 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. SEPTEMBER'S SESSION WAS A SMALL ONE WITH ONLY 8 CANDIDATES, BUT WE ARE PLEASED TO ANNOUNCE THAT WE HAD 2 PEOPLE UPGRADE FROM NOVICE TO TECH, ONE PERSON FROM TECH TO GENERAL, ONE PERSON FROM ADVANCED TO EXTRA, AND ONE CODE CERTIFICATE.

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).
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).

THE 30 DAY RULE BETWEEN TEST ATTEMPTS NO LONGER APPLIES.

HOPE TO SEE YOU AT THE NEXT TEST SESSION.

RON -- NDSS

Here is another VE Exam. There will be Amateur Tests given, Novice thru Extra, November 16th, 1985.

DATE November 19 (Sqturday)  
TIME 10:00 am  
PLACE KF Industries Lunch Room  
1500 SE 89th  
Oklahoma City OK  
Pre-Registration not required!  
(Walk - ins Only)  
Phone Contact:  
(405) 794-7398 HAL (After 5 pm)  
(405) 672-5564 GEORGE (after 5)  
(405) 631-1533 ORLIE or HAL

( 8:00am to 5:00pm)  
Talk-in: 146.55 Simplex  
Results of 10-19-85 session, 11 applicants with pass rate of 80 per cent. Seven of these applicants tested before we appreciate their determination.

## THE VSWR CONUNDRUM

On week-day mornings, about 9:30 or ten, you'll find at the Warr Acres Senior Citizens Center a table ringed with Radio Amateurs. (and an occasional well-informed non amateur -.ed) Most of these are retired Electronics Engineers, mostly from the FAA Aeronautical Center. Listening, you'll hear all sorts of subjects being discussed... horticulture, auto-mechanics, high(?) finance, state of the art world-politics, and even, on rare ocassions, matters pertaining to electronics in general, and Amateur Radio in particular.

Such moments, rare though they be, are worth lending an ear to. ( My college English instructor would turn over in her grave if she saw that sentence ending in a "to".)

Back on the subject. The matter of measuring the VSWR on a coaxial transmission line came up. Most of us had spent many hours sticking a probe detector into the holes in a fluted line, measuring the relative E(max) and E(min) prior to computing the VSWR and thus were all-too-familiar with the plotted curve of those voltages over a couple of half-waves on transmission line. The conversation drifted to the use of modern "SWR Meters" that are based upon the principle discriminating between the Incident Wave and Reflected Wave. (It's a rare instrument indeed that can discriminate more than 20 decibels between the two waves.) Keeping in mind that the so-called "Standing Wave" actually is a depicting of the interference pattern (or vectorial addition) of the counter-rotating vectors of the Incident Wave and the Reflected Wave, one can approach the answer to the oft-asked question: Does it make any difference where along the transmission line one places the "SWR Meter"?

Here's where we must lay a few Ground Rules (in order to continue the discussion intelligently -.ed). These deliniate the frequency in use to be in the HF spectrum and the transmission line to be lossless (a reasonable assumption for a short line).

The answer is simple, terse, and emphatic: NO!.

WHY?

Just so everyone will know what we are doing I am listing below the number of copies of the C&E that we mail each month.

1	AERONAUTICAL	130
2	V H F CLUB	27
3	HORI, Inc.	232
4	AUTOPATCH CLUB	131
5	O U CLUB	28
6	ALTUS CLUB	26
7	BICENTENNIAL	12
8	SUBSCRIBER & EXCH	57
9	WHEATSTRAW CLUB	35
10	C O C O	143
11	EDMOND SOCIETY	33
12	QUARTER CENTURY	81
13	KAY COUNTY ARC	26
14	CIMMARON ARC	11
15	SOUTH CANADIAN	67
16	EDMOND CLUB	49
17	CP/H USERS	61
18	GREAT PLAINS CLUB	28
19	OKLA INDEPENDENT	14
20	ARDMORE CLUB	26

The next issue of the C&E will be pasted up on November 18 (That's a week early, on account of Thanksgiving).

FOR SALE: RG-217 coax, about 200 ft @ .25c a foot. Just what you need for long runs or UHF. W5JJ, 789-3788.

## SILENT KEY

Leon Johnson, WA5OYY, aged 49 died of a heart attack 22 October 1985.

## MY LOSS IS YOUR GAIN !

KANTRONICS at half price  
Ham Soft Atari \$24.95  
Ham Soft VIC-20 24.95  
Ham Soft Color Computer 29.95  
Ham Text C-64 49.95  
The Interface 84.95  
Quantities Limited

INTECHNICA/MEGAMART  
Stan Bolin, WA5XFI 732-0183

Go back to the definition of the type of measuring device we're considering. Remember that it measures the relative values of the Incident Wave and the Reflected Wave. On a lossless line the vector of the Incident Wave has the same magnitude all along the line. On a lossless line the vector of the Reflected Wave has the same magnitude all along the line. So, you see, the position along that line where you sample those two vectors for their relative magnitude is of no consequence.

You may have heard (or read) differently. You may have heard, too, that the moon is made of green cheese.

How's your appetite for cheese?

W5JJ

# Q. R. Zedd

## THE READERS ASK QUESTIONS

From time to time we get letters from readers of our reports of the exploits of Q. R. Zedd, the world's greatest DXer, who lives just a hoot and a holler south of Norman.

Some letters say the column is so stupid, why do we keep doing it, and all, but every once in a while we get nice letters, and even questions about your humble reporter. So if you will take my word for it that Zedd is off the air at the moment, working on his walk-in linear and writing his Christmas want list, I'll humbly answer a few of the questions addressed to the author.

**QUESTION:** Are you really a ham? You don't act like you know much.

**ANSWER:** Yes, I really am. Which only goes to prove that even the FCC can make mistakes. I got into amateur radio about 10 years ago, after dreaming about it since my youth (mostly on nights when I had eaten too much pizza.) I moved right up and only failed the Technician once, the General three times, the Advanced three times, and the Extra three times, but Zedd told me to keep trying and I finally passed them all, I don't know how, luck, I think.

**QUESTION:** What do you do for a living, or are you a welfare parasite?

**ANSWER:** I wish I were, but I do the next best thing, I teach over at the University of Oklahoma and write books sometimes, and my hobbies besides amateur radio are tennis and trying to figure out if I'll ever get a raise.

**QUESTION:** Tell us about your background.

**ANSWER:** I don't have much of a background and it's real dull, actually. I was born poor and have tried a lot of things to make money but have never done very well at any of them. I think I missed my calling in 1955 when I quit selling Fuller Brushes. I sold the hell out of those toothbrushes. I had my horoscope cast once and the lady told me I was destined to be a failure all my life. That knowledge has helped me greatly by contributing to a more relaxed attitude on my part.

**QUESTION:** What makes you think you can write humor?

**ANSWER:** I never tried to write any. All my stuff is heavy, technological, and most serious.

**QUESTION:** Who inspired you to create Q. R. Zedd?

**ANSWER:** Questions like this really upset me. Oh, ye of little faith. Zedd is real. He is as real as love and Christmas and Braums ice cream. God bless you, child, better to say the Easter Bunny isn't real. Or Tondelayo. He lives just a hoot and a holler south of town. He invented radar and the plastic milk bottle. No one could make up Q. R. Zedd.

However, if I had made him up, I would have to say three people would have been the inspiration.

First would be WA5MLT, who used to live in Norman, and to this day still holds the microphone-swallowing record for the southwest region, as well as the coveted Yodar Kritch. H.O. got the rf bug bad a few years ago when he borrowed a Swan 350 from N5MS. Later he started chasing DX. He infected me with that. Thanks to H.O., I went from having a Swan 700CX and a random wire to having a Kenwood 820S and a Dentron Linear and a big beam and a Drake TR7 station and linear and a Datong and a speech processor and debts in excess of \$7,000, all due to amateur radio. When my wife threw me out, I think my interest in amateur radio was listed as one of her reasons, and I owe all this to WA5MLT.

My second inspiration was W5OU. When I first got into DX, I would call him breathlessly on 2 meters to report something like, "Gordon! Guess what! I just worked Italy on 20 meters!" Gordon has a logbook the size of the World Trade Center, and he would always be polite, and riffle back through the pages, and tell me the last time he worked that country on 75. He taught me humility... a lesson I later, thank God, forgot, or I couldn't have stayed a DXer.

My third inspiration was W5NUT, who took me with him to St. Maarten once. From Gillie I learned how to work a pileup, tune the Collins S-line, and drink canned iced tea all morning without going to the bathroom. I learned a lot of other stuff from W5NUT and had the time of my life down there with him. At the risk of being maudlin, I hope I get the money scraped up to go back with him some day.

**QUESTION:** What was your own greatest DX thrill?

**ANSWER:** I think it was the first time I worked A5A. That was on his Vietnam DXpedition right before the border war wrecked his campsite and he had to hike out through Tibet.

**QUESTION:** Why don't you put the Zedd adventures into a book?

## TRAFFIC NETS ARE WHERE ITS AT

The Oklahoma Section is fortunate to have one of the best National Traffic System (NTS) networks in the nation. We have several phone and CW nets in operation daily, with excellent participation in most areas. But we are always looking for additional operators to fill the gaps. If you are interested in becoming involved in net operations there is a place for you. Its not nearly as mysterious as it sounds, and it can really be quite rewarding. Following is a listing of the OK Section HF nets currently in operation. If you would like information regarding any of the nets, contact the Net Manager (NM) listed or the Section Traffic Manager, Sam Sitton, KV5X.

NET	FREQ	DAY	UTC	MGR
RACES	3997	Sn	2100	WA5JGU
OLZ	3682.5	Dy	0100	NG5O
OPEN	3900	Sn	1400	W5ZTN
OTWN	3900	M-S	2345	WA5OUV
STN	3850	M-S	2330	WD5IFB
OCWN	3740	TTHSSn	0200	N5HIH

NEXT ISSUE OF THE C & E WILL BE PASTED UP ON NOVEMBER 18 (THATS A WEEK EARLY ON ACCOUNT OF THANKSGIVING).

Can a BALUN be inflated? If so, to WATT size?

My wife has political ambitions-she wants to be speaker of the house.

INFLATION: When those that have saved for a rainy day get soaked.

**ANSWER:** No demand from publishers that would pay, or do it for free, and I'm too cheap to pay for it myself. I told you I've always failed at most stuff; this whole Zedd thing is just another example. I dreamed it would make me famous and rich. But that's another story.

**QUESTION:** How long have you been writing about Zedd now?

**ANSWER:** A little over four years. This is No. 44 on the computer, and there were a few done before I got the machine.

**QUESTION:** How long do you plan to keep writing about Zedd?

**ANSWER:** I dunno. Until he makes me stop or I run out of gas or some famous biographer comes along and signs him up for a real life story and I get threatened with a lawsuit if I don't stop, or something.

**QUESTION:** Do you have any advice for regular readers of the C&E?

**ANSWER:** Yep. Keep them cards and letters coming. And regularly take time out to thank the good lord for Joe Harding.

-- KU5B

SUN	MON	TUE	WED	THU	FRI	SAT
<b>NOVEMBER</b> The managing editor assumes no responsibility for the data contained herein.			CODE PRACTICE 8:00 PM MON-TUE-WED		<b>1</b>	2
3	4	MORI 5 Great Plains	<b>6</b>	Aeronautical 7	VHF Club WEINER ROAST 8	ARDMORE COCO SCARS 9
Wheatstraw AT CALUMET 10	EDMOND Club 11	76'ers U U 12	<b>13</b>	ALTUS AREA 14 CP/M	15	VE EXAMS KF INDUSTRIES 16
EARS 17	CIMARRON COLLECTOR - EMITTER 18	AUTOPATCH 19	<b>20</b>	KAY County 21	22	23
24	VE EXAMS RED CROSS BUILDING 25 6 PM	CORA 26	<b>27</b>	<b>28</b> THANKSGIVING	29	<b>30</b>

Here is a list of places where they have warning sirens. Please listen each Saturday at 12:00. Call Jim Buswell, N5BEQ, at 236-0368, after 6. (Where is the map? I must have misplaced it. Joe)

- 12 Water Tank, SW 89 @ Linn
- 13 Fire Station 25, 2642 SW 59
- 14 John Adams School 3416 SW 37
- 16 Woodrum Addition, W Reno and Czech-Hall Road
- 17 Westbury Addition, 10200 SW 15 @ Brinkenhead
- 21 Southern Hills School, 7800 S Kentucky
- 23 Rancho School 1401 W Johnson
- 24 Plumbers 344, 5318 S Shartel
- 25 fire statn 3416 S Robinson
- 27 Penn-Moore Sch 9400 S Penn
- 28 OCPD Brief SW 89 @ Santa Fe
- 31 Hayes School 6900 S Byers
- 32 Hathaway Park SE 38 @ Linds.
- 34 Bodine School 5301 S Bryant
- 41 Lythe Park, NW 7 @ Greenville
- 42 Canadian River 1500 S Portld

- 43 Jackson School 2601 S Villa
- 45 Westwood School 1816 SW 10
- 47 easement 901 N Oakdale
- 51 County Court, 320 W Kerr
- 52 Woodson School 600 N High
- 53 Crooked Oak, SE 15 @ Eastern
- 54 Shidler School 1515 S Byers
- 61 4529 NW 36
- 62 Harlow Park NW 19 @ Harlow
- 63 OCPD, 3801 NW 10
- 64 Madison 3117 N Independence
- 65 Sequoyah School 2400 NW 36
- 71 Memorial Park 1236 NW 36
- 72 Hawthorne Sch 1510 N Billen
- 73 Wilson School 2216 N Dewey
- 74 2101 N Lincoln Blvd
- 75 Fire Station 18, 700 NE 36
- 76 Fire Sta 12, 2121 N Eastern
- 78 easement rear of 3045 NE 16
- 81 Surrey Hills School
- 82 Post School 6904 W Britton
- 83 Harvest Hills 3215 NW 104
- 85 jct Hefner Rd @ MacArthur
- 86 Northridge School 8501 NW 82
- 91 Longfellow School 1201 NE 48
- 92 Fire Station 17, 2716 NW 50
- 93 Burbank School 3232 NW 65
- 94 Fire Stat 22, 1105 W Britton
- 95 Fire Station 15, 2817 NW 122
- 96 Coronado Hgts 5911 N Sapulpa
- 97 Highland Park 8212 N Harvey

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WA5CZN says,

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Spiritual Batteries Need A Charge?

GET  
REJUVENATED



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Call Johnny Ore 632-5098

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