

THE BIG SIGNAL
OKLAHOMA CITY AUTOPATCH
ASSOCIATION, INC.



kay

The South Canadian
Amateur Radio Society

The topic for this month is the SEVERE STORMS NET.

Someone inquired as to why the Net had not been activated during some of the recent periods of storms wrought upon the communities by "Mother Nature".

The 1986 program was designed for the Net to be activated upon notification from the National Weather Service when a Severe Storms Warning for Oklahoma County was issued.

Warnings are different than Watches. The term "Watch" means there is a possibility of severe weather conditions in a general (usually broad) area. The term "Warning" means that certain cells are very likely to produce strong winds, hail, and possibly tornados; and persons within these areas should take the necessary measures to protect themselves and property from possible injury.

On several occasions this year some of the Watches developed into very severe storms right over the top of us and there just wasn't time to do anything except jump for cover.

That is not to say that we were not adequately organized or prepared to respond in an appropriate manner, but a tornado in October???

The success of the program can be measured only by how well the individuals within the group fulfill their commitments.

Burn-out is being experienced by the relative few who in the past have assumed the major share of the responsibility and fulfilled their responsibility in a very admirable manner.

What is needed, now and in the future, is more people to

Continued INSIDE BACK COVER

Well your regular editor NSEYD has been in the hospital so the column hasn't been in the last couple of months. But Charly's doing alot better, in fact he's back to clippin' ears off at the old barber shop.

Nov. Mtg. Notes

I'm writting this ahead of the meeting so I can only say what's supposed to happen. KL7MA, Dean from Perry America will present a program on his trip to Brazil to work with sounding rockets for NASA. Also, we will have pictures from the October Jamboree On The Air that we did for the Boy Scouts.

DECEMBER MEETING/CHRISTMAS DINNER

The dinner this year will be a very nice one at the Marland Mansion on Dec. 18th at 7:00 PM. The menu will be baked ham and baked potatoes with lotsa goodies on the side. The cost will be \$10.00 each person. We must have your PAID reservation in by Dec. 12th. Send it to the club p.o. box, or give it to WDSDFR or me.

Continued INSIDE BACK COVER

C H R I S T M A S

Is just around the corner, right after Thanksgiving.

Next pasteup will be early, so everyone can enjoy it (Christmas, not the pasteup).

December 19 is the magic date so get your copy in early, if nothing else at least wish everyone Merry Christmas.

Joe, WA5ZNF

SCARS

held its regular monthly meeting on Saturday, November 8, at the Norman Red Cross. The meeting was called to order by President Jeff, KE5EB, at 9:50 am. Secretary Linda, N5DWN, read the minutes of the October meeting. There were 35 members, one guest and a teddy bear present.

There is now

\$135.90 in the club treasury according to the treasurer, Monte, WB5RZX. The one expenditure during the month was for the raffle prize.

Dorinda & Andi

discussed the plans for the Christmas party. This capstone event will be on December 13 at the Jack Santee lounge high atop the OU football stadium. It will start at 7:30 pm. One gets to the Lounge by entering the stadium on the West side(gates 1 and 2, I think) and riding the elevator which is just inside the gate. Ken, KA5EFJ can give more precise directions or you could use your HT to get instructions.

The menu will have ham and turkey provided by the club and appetizers, salads, bread and rolls, veggies, and desserts provided by the participants.

There will be one or more door prizes. The major prize will be a 10 m FM transceiver(2m conversion) donated by Ken, N5BEW. Any excess funds will be used purchase other door prizes.

There will also be a gift exchange. Each person coming is asked to bring an inexpensive

Continued PAGE TWO

SCARS CONTINUED

sive gift(good chance to get rid of a white elephant) and a Christmas card for the club.

Each member of SCARS is invited and may bring one or more quests(good chance to impress the XYL with a nite out). Kids are welcome. The charge for the party will be \$5 per person. If you want spirits, you must BYOB.

In order to plan the dinner, Andi and Dorinda need your RSVP's, the \$5 in advance, and volunteer for the potluck dishes. This is going to be the s event of the year so be sure to get your reservation in now. Either clip out the following RSVP and mail or call the numbers.

Yes, I'm coming to the SCARS Christmas party and I'm bringing ____ guests. My call is _____ and a check made out to SCARS for \$5 x no of persons is enclosed.

Send to: Andi Wolfe
416 S. Bouziden
Moore, OK 73160

or call: Andi 799-5150
or Dorinda 799-5363
to reserve your seat.
The deadline for RSVP's is December 3 so do it NOW.

QR, A5A

was narrowly defeated in the second straight attempt by an indeterminate number of dissident SCARS members to mount a gentlemanly coup d'etat and elect QR Zedd president of the club. The nominating committee, which consisted of Dave, K5PL and Gary, WB5ULK, placed the name of Mark, N5HZR, in nomination for president. A5A was nominated from the floor by a person who shall remain anonymous to prevent possible libel charges(Having been sued once for \$17000000, this reporter? takes no chances, first amendment not withstanding). After three recounts, Mark was declared the victor and will assume the throne on January 1. The other officers elected unanimously were:

Vice-Pres: Andi KA6PKJ
Treasurer: Monte WB5RZX
Secretary: Linda N5DWN

The Prez, Jeff named WB5ULK chair of the swap meet committee appointed last month. Steve, N18W, was added to the committee. The other members are: W2OCM, Frank; Ken, KA5EFJ; Ken, N5BEW, and Davis, KD5IT. This group is charged with coming up with a plan for a swapmeet in Norman.

A fine program was presented at the meeting by Larry Mooney, Deputy Director of the National Weather Service. Larry, WB5PWY, will be the person responsible for the forecasting operation to be located at the NEXRAD site in Norman. This is now under construction on Halley Drive just 500 yards north of the Red Cross. The operations are scheduled to begin next summer. Larry described how he got amateur radio weather nets into the NWS forecasting loop in San Antonio and OKC. He also described the NWS/NSSL DOPLIGHT87 program and the planned packet WX info system. Gary, WB5ULK, made the arrangements for Larry to talk to the club and it was a great program.

Dave, K5PL,

gave the following report on planned repeater projects to the club.

Repeater Projects for SCARS

1) Back-up transmitter project.
Estimated cost: \$200.00.

Parts required: two batteries, miscellaneous hardware and parts; 15 amp. 12 volt power supply.

Donations required: A coaxial relay capable of handling 150 watts and operating on 12 volts.

2) Link to 147.39 Repeater in Edmond.

Estimated cost: \$100.00
Project description: circuitry to enable and disable link from either end with local receiver priority selection. Link will enable the use of the autopatch and other functions from either repeater. The control circuitry addition will be made with the Back-up transmitter project.

Equipment required: 1 PL encoder, 1 PL decoder and a crystal for the link receiver (to be donated by K5PL).

3) Construction of an Eight Receiver Voter.

Estimated cost: \$150.00.

Project Description: circuitry capable of voting up to eight receivers based on signal quality, with lock out function and audio equalizers for each receiver, and an external function to set the system squelch level to 20 db quieting. Project to be built in two stages. First stage is the voting of the two existing receivers with a flip-flop/EPRM network. Second stage is the addition of microprocessor control for the control of up to eight receivers.

4) Addition of Receiver Sites.

Est cost: \$250.00 per site.
Project Description: addition of two receiver sites. Proposed sites are: Blanchard and North Moore. First two sites can be built with UHF equipment currently owned by the club and receivers donated by K5PL. More sites will require the purchase of additional RF equipment at an undetermined cost.

5) Ten Meter Remote Base.

Estimated cost: \$600.00.
Project description: construction of a two meter repeater with ten meter remote base link. System will be constructed with the G.E. Progress Line station owned by the club and a 110 watt Motorola Compastation to be donated by K5PL.

6) Six Meter Repeater.

Estimated cost: \$500.00.
Project description: construction of a six meter repeater to be linked to and located with the 147.06 repeater. UHF link equipment or a duplexer will be required. Cost estimate is for the use of a UHF link. Link equipment will have to be purchased. Six meter RF equipment to be donated by K5PL.

(By David K5PL via packet)

VE Exams

will be held in Norman on Wednesday, December 3, at 6:30 pm. The exams will be held in room 140 of Kaufman Hall on the OU campus. All levels of exams will be given. The fee for exams other than Novice is \$4.25 and you must bring a copy of your present FCC license with you and some form of ID(driver's license is OK). Walk-in OK but preregistration preferred. To preregister, send completed form 610, \$4.25, and copy of license to:

Continued INSIDE BACK COVER

1 AERONAUTICAL CENTER ARC

MEETS: FIRST THURSDAY, FLIGHT STANDARDS
BUILDING, FAA, SOUTH MACARTHUR 7:00 PM

PR BOB PACE, WASCJG 376-3569
VP
S/T JACK IMAN, WBSNV 377-3537

EDITOR: BOB PACE, WASCJG 376-3569

2 CENTRAL OKLAHOMA VHF

MEETS: 10:00AM THIRD SATURDAY, RED CROSS
10TH & HUDSON (BACK DOOR) OKLA CITY

PR JERRY METHORE, KDSIS 524-5080
VP HUGH BENSON, KASOGY 946-0023
SE JOE BUSHNELL, K5JB 732-0676
TR ELLARD FOSTER, W5KE 789-6702
EDITOR: JOE BUSHNELL, K5JB 732-0676

3 MID-OKLA REPEATER

MEETS: 8:00PM FIRST TUESDAY, OKLA CIVIL
DEFENSE, WILL ROGERS BLDG., STATE CAPITOL

PR TIM RAUSCHER, K5MUG 848-9910
SE MIKE SAMBUCCO, KASTSD 672-9176
TR SID GERBER, W5K02 737-1050
EDITOR: MIKE SAMBUCCO, KASTSD 672-9176

4 OK CITY AUTOPATCH

MEETS: 7:30PM 3RD TUESDAY (7:00PM MEAL OPTION)
GOLDEN CORRAL RESTAURANT 7000 NW 23 (ROCKWELL)

PR CHARLES HOFFERBER, W5FMU 340-4468
VP DAVE HOLDER, W5G0Y 524-4711
SE DAVID CARM, KFSEB 751-5672
TR ART HERNANDEZ, KF5DK 354-9724
EDITOR: DAVE HOLDER, W5G0Y 524-4711

5 OKLA UNIVERSITY ARC

MEETS: 7:30PM SECOND TUESDAY (SEP-MAY)
119 WILSON CENTER, 1334 S JENKINS

PR FRANK DONALDSON, W5IQJ 329-4172
VP JOHN MUSTENBERG, KESN 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, WBSKRX 482-2498
VP
S/T MIKE SCHENKLE, KBSXN 482-1797
EDITOR: MIKE SCHENKLE, KBSXN 482-1797

7 BICENTENNIAL (76er) ARC

MEETS: 7:00PM SECOND TUESDAY, OGAE BLDG,
SE 3RD & E. K. GAYLORD BLVD.

PR DONALD DUCK, AESH 691-4199
VP TED VANLANINGHAM, WDSJNT 262-1675
SE JERRY SPROUL, WSAUH 354-2061
TR
EDITOR: JIM SEALS, KBSXN 381-2005

9 WHEATSTRAW ARC

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

PR JOE GARLAND, W5FLT (CALUMET) 893-2660
VP JOHNNY FISH, K5GBN (CALUMET) 893-2227
S/T GEORGE MASCHIND, K566L (OKARCHE) 263-7614

EDITOR: VIRGINIA BENEDA, W5EMD (MATONGA) 623-7935

10 CENTRAL OKLA COMPUTERS

MEETS: 9:00AM SECOND SATURDAY, RED CROSS BLDG
NW 10 & HUDSON. BACK DOOR.

PR SAM MURR 324-6443
VP TOM HANSHAN, KSLDI 677-5291
S/T MARTIN SCHIEL 670-6891

EDITOR: MARTIN SCHIEL 670-6891

11 EDMOND AR SOCIETY

MEETS: 000 MONTHS, 3RD SUNDAY, 2:00PM EDMOND
EOC. DINNER, EVEN MONTHS, 3RD FRIDAY.

PR BOB MCCOY, W5BUJ 348-2032
VP LEE VAUGHN, K5MIS 348-2961
S/T AMBER THOMASON, K5VEK 478-4615

EDITOR: AMBER OR BOB THOMASON 478-4615

12 QUARTER CENTURY W A

MEETS: QUARTERLY AT VARIOUS PLACES.
NET: 3855 KHZ SUNDAY AT 8:00AM.

CHM ROBERT RUNYON, AA0D 373-1818
VCH GENE NAILON, K5OLE 341-8289
S/T HOWARD BAKER, W5AS 721-5453

EDITOR: ROBERT RUNYON, AA0D 373-1818

13 KAY COUNTY ARC

MEETS: 7:00AM THIRD THURSDAY
PIONEER DRIVE-IN BANK, PONCA CITY OK

PR DAVE LAND, KDSFX 762-8616
VP STEVE SCOTT, KAS6K 762-0117
S/T HARRY BEATTIE, W5DPP 765-3862

EDITOR: CHARLES NORTH, W5EYD 762-8136

14 CIMMARON ARS

MEETS: 7:30PM THIRD THURSDAY, W5FUD SHACK
827 S 13, FAIRVIEW

PR STEVE SCHOONMAKER, W5FUP 886-3274
VP BILL SIMPSON, W5HOK 883-5523
SE MADINE PAINTON, W5FMH 764-3599
TR BETTY DAY, KASRTW 227-3462
EDITOR: JACK DAY, W5SZ 227-3462

15 SOUTH CANADIAN ARS

MEETS: 9:30AM SECOND SATURDAY, RED CROSS BLDG
NORTH OU CAMPUS. NORMAN

PR JEFF WYKE, KESEB 329-6762
VP FRANK RIZZO, W2OCM 321-2899
TR MONTE BATEMAN, WBSRZY 329-7485
SE LINDA BRANDT, W5DWH 321-5081
EDITOR: DAVIS EGLE, KDSIT 321-7570

16 EDMOND AR CLUB

MEETS: 7:00PM SECOND MONDAY. SEE CLUB
SECTION FOR LOCATION AND TYPE

PR MARK NORTHCUTT, W5DYI 755-4672
VP BOB MOORE, KASETA 799-1765
S/T KAY NORTHCUTT, W5DYJ 755-4672

EDITOR: MARK NORTHCUTT, W5DYI 755-4672

17 OK CPM USER GROUP

MEETS: 7:30PM SECOND THURSDAY OSU,
ROOM 307

PR WILLIAM COOTER 360-2141
VP JIM WHITE 364-5289
S/T JOY MELTON 789-0280

EDITOR: WILLIAM COOTER 360-2141

18 GREAT PLAINS ARC

MEETS: 2:30PM FIRST TUESDAY
WOODWARD PUBLIC WORKS BLDG.

PR HINDLE HATCHETT, W5SPLH (FT SUPPLY) 766-3541
VP LEWIS PATTERSON, WSKFK 256-2111
SE LOIS FORD, KASPYA 923-7683
TR FREIDA PATTERSON, W5EOX 256-2111
EDITOR: LOIS FORD, KASPYA 923-7683

19 OKLA INDEPENDENT ARC

MEETS: 7:00PM SECOND TUESDAY
SOUTHWESTERN BELL OFFICES, PONCA CITY

PR DAVE WHITE, WNSLUI 765-5707
VP VERNON TREIBER, W5ANV 767-1571
SE GLEN BISHOP, JR, KASPUB 767-1031
TR BIZ WICHY, W5HCO 762-3297
EDITOR: DOUG EVERITT, W5DUB 359-0069

20 ARDMORE ARC

MEETS: 7:30AM 2ND SATURDAY. CORRAL RESTAURANT
INFORMAL: EVERY WEDNESDAY, 221 9TH NW

PR GLENN HAMILTON, KESES 226-4379
VP KEN FRANKS, W5MPC 226-1950
SE ROBERT GRIFFIN, W5SVKA 223-8741
TR JOHN HERLYN, W5SF2D 223-9543
EDITOR: JACK GANT, W5GN 223-2619

21 TRI-CITY ARC

MEETS: 1ST THURSDAY OF THE MONTH.

PLACE:
PR LLOYD WILLIAMS, KASUKG 382-3231
VP RON PHILLIPS, W5SUPU 382-1856
S/T J. D. BILLS, KESMU 379-3992
P.O. BOX 655, HOLDENVILLE OK 74848
EDITOR:

CENTRAL OKLA RADIO AMATEURS

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

PR JIM BOSWELL, W5BEQ 236-0368
VP FRANK TASSONE, KASWGS 341-4945
SE LEE WARD, W5HIR 789-0681
TR SUSAN ST LAURENT, KF5L6 324-8180
COM/COM: CHARLES HOFFERBER, W5FMU 340-4468

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EDITOR: JOE HARDING, W5ZHF 737-1044
CIRCULATION: BOB GRAHAM, W5NSV 677-8695



What is a net?? There are all kinds of nets. To name a few: hair net, fishing nets, volleyball nets, and amateur radio nets. The net I would like to comment on is the amateur radio net.

Looking up the definition of the amateur radio net, I looked through my vast library (2 books) and found this piece that describes what a net is about.

Nets are on the air clubs, folks coming together to discuss or engage in favorite activities of mutual interest. There are nets for traffic handlers, ragchewers, computer fans, DXers, historians, aviators, philosophers, county hunters, and hosts more for countless other hams.

Nets meet regularly on prearranged days, times and frequencies, and can attract scores of members and passerbys at any time. One merely must open the pages of the ARRL NET DIRECTORY to see just how much formal net activity exists for public-serviceminded hams alone.

The EARS Club has five such nets. Everyone is invited to make use of the nets. Your participation is more than welcome.

The EARS information net meets each Monday evening at 8:00 p.m. local time. (0200 UTC) The net was established to inform members of the amateur community of activities of amateur clubs within the range

of our repeater. (KC5GN 147.135+600) And to bring bulletins and information of interest to the amateur community. If you have a message or a question or information of interest, announce it on the net! The net manager is Frank Tassone, KASWGS.

Frank has done a great job in getting the net going. And now is in the process of training several amateurs to

be net control operators.

Our newest net to be added to the list is the EARS Teen net. We hope this will stir interest from the younger amateurs around town. This is a general information net. If you have something to say, say it on the teen net. The net will meet each Wednesday evening at 8:00 p.m. local time. You don't have to be a teen to join the fun. If you feel young at heart then you're the right age.

The first net was held 11/19/86. Net control operators are Robert Thomason, NSIJX and Stephen Stepp, KASWJW. They will alternate each week until others join and take on the position.

The EARS code practice net meets each Thursday evening at 7:00 p.m. The code practice is for anyone who wishes to brush up on their code, or needs help to upgrade. Check in and give it a try, who knows maybe it could help. We sure hope so. Code is being sent at 7,10,14,18, and 22 words per minute. The text is taken from the current issue on the C&E. The location of the text will

be given at the end of each five minute block.

The code is presently being sent via a Commodore 64 (this may change). The net control operator is Lee Vaughn, KASWIS.

The first Saturday of each month EARS works with the Edmond Civil Defense to conduct a siren test. Weather permitting, the test is held at 12:00 noon. The purpose for the test is to insure the proper function of each siren. The net control operator is Edith Vaughn, KASYPX.

EARS also has a weather net. Activated only when severe weather is expected, this net is operated from the Edmond EOC with trained spotters in the field. All communications are for the purpose of providing the Edmond Civil Defense and the National Weather Service with information about severe weather in far northwest OKC and Edmond area. The EARS Coordinator is Don

Stepp, NSDBM. Assistant net control operators are John Thomason, WB5SYT and Bob Thomason, KAOCVK.

There are many other nets around town. Hopefully, this article has enlightened you on our nets. Whatever your desire, I'm sure there is a net for you.

Whatever the occasion, come and join us on our nets!!

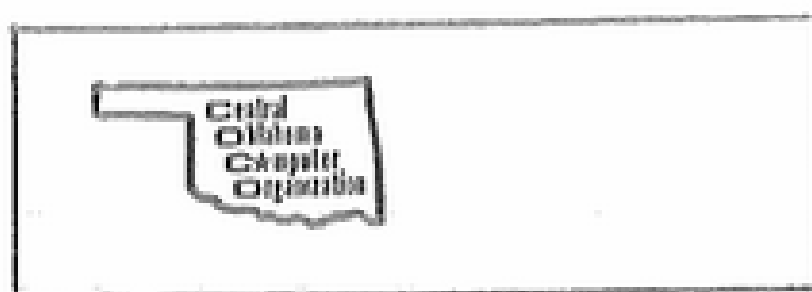
Thanks.... 73
Lee Vaughn, KASWIS

How could one organization take on so many projects and all be successful? What a treat to be allowed to work on some of these adventures with the fine people we have in this organization. Every time I read an article in the C&E I wonder if we have topped out, or reached our peak. As we go into the fall we are embarking on even more new challenges. Congratulations to our new board!! Phil N5HIP, President, Lee, KASWIS, Vice-President, Jana, KB5AOP, Secretary, and Edith, KASYPX, Treasurer, Bob, N5BUJ, Past President, Bill, KC5GN, Trustee, and Ken, NSDBM, E.C. Donna, KASYSF has been appointed as the ARRL Public Information Officer. On behalf of the club, I would like to thank each of you for taking on the challenge of running our club this next year. As usual, your club will support you in whatever needs to be done. One thing that can be said about the EARS group is that they are doers. The "Can Do" attitude stands out at any function where this group is together.

UPDATE ON CLASSES: As of this writing, we have 30 students who have passed their code, of this 30, 23 have also passed their theory test. The technician class started Nov. 16th. and will go through mid-February. We appreciate all of the support personnel that have made the classes get off to a great start. From table and chair arranging to teaching, each of the people involved have made this a truly successful activity.

EXPLORER POST: EARS is co-sponsoring with the American Red Cross an Explorer Post. We will have an Open House or an

Continued NEXT PAGE



President Sam Murr called the meeting to order at 9:00 AM on November 8, 1986. 97 members and guests attended.

Old Business

1. Don't forget that we will elect officers during the December meeting. The nominating committee has made its selections and will present them at the next meeting. Be sure to attend and cast your vote.

2. Erik Petrich will modify the old DATALINK telecommunication program to work with the new CoCo 3.

3. Herb Reed has touched base with some of the other computer users groups in town about collaborating on a computer show at some time in the future. None of the groups would commit to anything, but Herb hopes to have more info by next month's meeting.

New Business

1. Next month's meeting is guaranteed to be hectic. In addition to electing officers, December is when we collect your \$10 annual dues. Take heed: if you don't renew on time, this may be the last issue of the C & E that you receive. I passed out membership forms and 25 people renewed in November.

2. Speaking of dues, it never seemed quite right to expect people to pay \$10 for dues in, say, September only to have to turn around and pay them again in December. To that end, Duane Woodson moved that the dues be \$10 per year when collected up through June 30 and \$15 when collected after July 1. The \$15 would cover the remainder of the current year and all of the next. The motion carried, but just barely in the closest vote of the year. The suspense was almost unendurable.

3. Bob Pace recommended placing a message to the sysop on drive 0 to prevent files from being prematurely deleted from CoCoNet.

4. Harold Todd had a tip for uploading BASIC programs

to CoCoNet. First save them in ASCII format and then upload them. Thus, CoCo 3 users can download them.

5. Hollis Holcomb has another tip for CoCoNet users. Use your favorite word processor to compose your messages, save them in 32 column format, and then upload them to CoCoNet. This reduces the amount of time you spend on CoCoNet, so more people can have access to it.

6. Holly further recommended that the club provide CoCoNet instructions at each meeting. Sam Murr volunteered to print up some copies of instructions and bring them to future meetings.

7. Lost and Found Dept. Found: 1 smoke gray Flip-N-File 10 with two diskettes inside. One of them has a small tag which reads "editor/assembler". The other is October's swap disk. Notify Sam Murr to claim your merchandise.

8. This month let's welcome four new members: Douglas Bell, Robert Jones, Dennis Kurz, and Ralph Sexton.

Hardware Problems

1. Steve Moore was curious if anyone had been on the hardware hackers' section of Delphi and seen the J & R RAM-disk modification. True to form, no one had.

2. Joel, one of our youthful members wanted to know how to clean his keyboard because, when he pressed some of his keys, no characters appeared on the screen. Tom Mangham came to his rescue with some very helpful advice. Here's the procedure. Turn the keyboard upside-down. Remove all 327 screws and pull the back off. Clean the mylar backing with a cotton swab soaked in rubbing alcohol, taking care not to touch the mylar surface. Then, reassemble everything without spilling all the keys.

3. An inventor named Don Hartman, Don Hartman demonstrated his PAGE MATE, a non-magnetic device designed to hold open reference materials. He was selling the gadget for \$19, a \$6 price break. It looked like an ingenious and very handy device. And, it makes a great gift. It's available through Radio Shack if they can figure out how to order it, which is doubtful.

Software Problems

1. Byron Hutto raved about COLOR WINDOWS from Other Guys' Software (\$19.95). It's a program which allows up to three other programs to be open simultaneously. Then, you can switch back and forth between applications without closing any of them out. Sounds similar to Microsoft Windows for IBM PCs. It's very handy.

2. While we're raving about software, ULTRA TELEPATCH, reviewed in the November issue of RAINBOW received praise. Any program which improves TELEWRITER 64 is worthy of inspection.

3. Duane Woodson's drive 1 hangs up when VIP FILE uses it for sorting. Ronn Folk confirmed the problem with his own experience. No one could offer a solution, however.

4. Erik Petrich has a fix for some color graphics problems occurring on a CoCo 3 equipped with a composite monitor. His fix will display true colors or beautiful shades of gray.

5. Byron Hutto had a problem with a program called the TEACHER'S DATABASE. The program, written in BASIC, can't handle more than 20 grades per student. He asked if anyone could help him modify the program to increase the number of grades allowed.

6. One of our friends from Enid has a DMP 130 printer hooked up to his CoCo 2. He can't dump graphics to his printer. Doug Bell recommended using a DMP 100 printer driver which has worked for him in the past.

7. Bob Pace cautioned against using a 12-volt CoCo 1 disk controller on a CoCo 2 or 3. You can, however, use it with a Multipack. Bob is working a deal with J & M to swap out the old controller for a new one for less than \$50.

8. Ronn Folk volunteered to take over the monthly swap disk program from Harold Todd, who was running out of programs.

Doorprize Winners

Keyboard - Ralph Rea
Keyboard - Hollis Holcomb
OS9 & PASCAL - Chris B*****
Musica 2 - Chris Bell
Musica 2 - Bill DeMand
CoCo shell - Paul Gates, Jr.
paper - Jack Cochran

Continued NEXT PAGE

paper - John Bigler
 stapler - Duane Woodson
 used disk - David Sanders
 CoCo 2 dust cover - Nathan Roberts
 Flip-N-File 60 - Ray Barton
 Assembly Language Programming book - Nguyen Huy
 Cookbook - Christina Boyer
 Biosphere - Kevin Roberts
 Color Graphics - Bob Pace
 blank disks - Kathi Coburn
 blank disks - Lewis Sample
 blank disks - Elizabeth Roberts
 blank disks - Bob Jetton
 diskette organizer - Robert Sanders, Jr.
 diskette organizer - Ron Sonheim
 diskette organizer - Homer Fox
 Graphicom 2 - Lee Lash
 Color Logo book - Tom Brewer
 Color Logo - Larry Boettcher
 TRS-80 graphics books - Ruth Ann Roberts
 TI calculator - Jim Stover

Program

This month Kathi Coburn treated those present to a riveting presentation on MUSICA 2. I can't wait to get a hold of a copy and play with it. MUSICA appears to be very easy to use, yet quite powerful. That's generally a good combination.

Kathi began by playing her arrangement of "I Write the Songs" and then went on to explain the program she used to arrange it.

First, LOADM, EXEC, and RUN (don't forget to RUN) MUSICA 2. When the screen comes up, press any key and you'll notice that the cursor is located on middle C. At this point you decide whether to use the joystick (by hitting the right arrow and the <J> keys) or the keyboard.

Next, use the up and down arrows to move up and down the scale one note at a time. Alternatively, you may move one octave at a time by using the <shift> key in conjunction with the up and down arrows. Position the cursor wherever you choose and press <ENTER> to place a note there. The default is a quarter note. However, by hitting a number from 1 to 9 instead of ENTER, you can create anything from a whole note to a hemi-demi-semi quaver (that's a sixty-fourth note).

Kathi talked at length about chords, harmonics, separation (or the lack thereof), and repetition. All the while she also gave us many hints, the fruits of her experience. She recommended saving the file frequently and working on only four to six measures at a time so as not to overwhelm yourself. She provided everyone with handouts listing commands and hints. If you're interested in learning more about MUSICA 2, get your hands on one of the handouts.

Thank you, Kathi, for a fascinating presentation.

See you next month. Don't forget to attend December's meeting so you can vote and pay your dues.

-- Martin Schiel, 670-6891

MORE EARS

organizational meeting on Thursday, Dec. 11, 1986. The meeting will begin at 7:00p.m. and will be held at the City Council Chambers at First and Littler or across the street from the Edmond Police Station. The post will be coeducational and ages from 14 to 20. Main emphasis will be ham radio, disaster training, and first aid. The only requirement for membership is a sincere desire to become involved in any of the above mentioned activities. Please contact any family or friends that may be interested in joining the post. The post committee chairman is Ken, N5DBM and the post advisor is Bob, KA0CVK.

SANTA PROJECT: We are again offering our services to make your Christmas a Super Success. Call 348-2032 to schedule Santa for your holiday parties.

DINNER MEETING: The December Dinner Meeting will be held on Friday, December 19, 1986 at the Pecan Grove Restaurant in Guthrie at 6:30p.m. We will look forward to seeing all of you at the meeting.

MEMBERSHIP: We are proud to welcome to our club, Bill Thompson, John King, and Bill Rutledge. These are new novices and have not yet received their call signs. The total membership for EARS is now at 77.

73s Bob KA0CVK



At this rather late date (Nov. 19) seem to have accumulated quite a dearth of copy for this month's edition-lots of "Poop for the Group". Many thanks to many contributors!! Items via typewriter, hand scribed, telecon's & SSB. The following a repeat from last month: "Have agreed to take on the task as Interim News Editor (INE) & PR person until our January meeting-then, hopefully, some "Person" will take over this most rewarding task". I did mean Jan. '87-not Jan. '88. So far no rumblings or offers!!

Please send your copy hand scribed, typewritten, or other method to: Fred Boardman, W5NL
 2900 Bird Drive
 Oklahoma City, Ok., 73121
 Tel. 427-2505

<W5AS TYPED INPUT>

QCWA, Chapter 63 operation on the air for October 1986
 SESSIONS 4
 CHECK-INS 142
 TRAFFIC 29

Here is our birthday list for December 1986. Special recognition & greetings to Eunice Holt who has faithfully sent birthday & get-well cards over a span of many years-as all of us know!!

01 Bill Malone	W5HIM
03 Shirley Hallmark	YL W5ZWM
04 Judy Garrison	YL N5JDP
10 Cermie Oldfield	YL W5AYL
10 Herman Irwin	W5NBH
17 Harold Soard	OM W5OQT
19 George Clark	W5JKK
19 Eunice Holt	YL
W5DDI/SK	
25 Roy Garrison	N5JDP
30 Charles Shaefer	W5WL

Perhaps/perhaps not, it is appropriate to pat ourselves on the back-as to our chapter's accomplishments; particularly how our members have & continue to contribute to enhancement/goals of Amateur Radio. Just a little "Toot" on Ye-Old-Horn does not seem out

of line. The following list, compiled by Howard, is only a starter. Compiling such a list was aluded to in last month's column-more later.(INE). The list is somewhat in Alpha order.

(1) W5AA & W5AS are very involved in the ARRL 5th District Bureau for inbound QSL service. KX5W, Doc. was active until his sudden departure to Oregon.

(2) W5AS is Net Manager for Oklahoma Nite Owl Net (ONON). Also Bulletin Manager-Okla. ARRL. Sec/Treas Chapter 63.

(3) K5CXP & W5FW are Net Control Stations for the Oklahoma Liaison Net (OLZ).

(4) K5DLE is Assistant Net Control Station for (ONON).

(5) KA5DGY is current Vice President of Okla. Central VHF ARC.

(6) KD5DL is Assistant Net Control Station (ONON).

(7) W5JJ is avowed as a true journalist with his mill showing in QST, CQ, 73 & most regularly in the C&E.

(8) W5JME is a newly appointed Chapter Director. Also Bob is Okla. Awards Manager for ARRL VHF/UHF Century Club (VUCC). See Sep.'84 C&E for detailed description.

(9) W5KE is (many years) Treasurer of Okla. Central VHF ARC plus a recent chapter Director.

(10) N05M is recent (past) President of Okla City Autopatch & a recent Chapter Director.

(11) NG5G is an Official Bulletin Station (ARRL).

(12) W5RB is Official Bulletin Station (ARRL). Also Gil is NCS for the (OLZ) which is the ONLY CW NTS in Oklahoma. CW enthusiasts pls note!!!

(13) W5EJ-Ted is General Manager of QCWA International & many, many other Amateur Radio activities.

(14) W5KL-Leland is past QCWA International Vice President & our current President. We know & read of his many Amateur Radio activities & contributions.

(15) More than 30 members have checked into the (ONON) 2 meter FM Net. Some regularly & some just once in a while-but they/you do show up.

(16) Must add the activity of a member of Ft. Worth Chapt.72. K5BDX, Don, is most active as a QSL Manager for several overseas DX stations.

Don handles thousands of QSL cards per year. Howard, W5AS, knows, as Howard services all of his cards in the QSL Fifth Bureau Office. Howard, Tnx for this FB support & service-from all of us (INE).

There could be more, but space for this issue could be premium. More later if this type of info. is of on going interest, to members & other readers.

VY 73, Howard, W5AS

The 1986 annual QCWA International Convention was held in St. Petersburg, Fla., Oct.30,31 & Nov.1,1986. It was well attended from far & near. Social activities included a Saturday morning breakfast and a Saturday night banquet with an attendance of 160 members and guests. Additionally there were St. Petersburg tours, Bingo, Door Prizes, Technical Presentations & activities a-plenty for the ladies present.

In addition to the closed door sessions by the Board, an Open Forum was conducted on Saturday morning. The official Board report on actions taken will be publised in an upcoming Hot Line and in the next issue of QCWA NEWS. Subjects discussed at the Forum included: (1) A recommendation to divide the USA into several regional areas for the purpose of nominating and electing QCWA officers and Directors;making this a more personalized activity since members will presumably be more familiar with the candidates. No formal decision was reached by the Board, but it was agreed that they will take this recommendation into consideration. (2) The high expense of delegates to the Board meetings was discussed and one recommendation was to the effect that the host members might consider furnishing a "guest" bedroom to visiting official. (3) It was announced that Oklahoma City will be the location of the 1988 Convention.

This was my "first" attendance at a National Convention of QCWA. I gave the 1987 Nominating Committee report. Also, Pauline & myself enjoyed meeting and being with such a nice group of QCWA members.

In addition to attending the QCWA Convention, Pauline and I managed to make separate tours of the Busch Gardens in Tampa and Epcot Center near Orlando (Grayline in both cases).

This was a real nice trip and an interesting experience. I'm looking forward to the 1987 Convention in San Diego and of course the 1988 Convention in OKC (close to home).

Vy 73, Ralph, W5AA

We now have an expert to assist in the field of Convention planning. Ralph, feel certain you will be asked as a consultant to get things rolling during 1987. Feel safe to say our Board will be calling on many, many members to assist with this seemingly difficult task. (INE)

<W5PML INFO. VIA SSB>

With the Yuletide season not far beyond Thanksgiving, Cecil provided the following invitation during the Sunday, Nov.16 QCWA Net:

The North Texas Chapter 114 and the Wichita Mtn. Chapter 56 have decided to have a joint Christmas party in Lawton, Friday evening Dec.12 (time 6:30 at Western Sizzler, 6106 NW Cache Road). All Chapt. 56 members please attend. Any & all Chapt. 63-ers are similiarly invited. There will be an exchange of small gifts (\$3.00 Max)-white elephants are appropriate. Men's gifts exchanged to men & Ladies to Ladies. From the cuff, Cecil named W5HXL, W5JJ & W5KE as Chapt. 56 members in OKC area. For Chapt. 63-ers please let someone who checks into Sunday Net know if you plan to attend-before Dec.12th!!!

Vy 73, Cecil, W5PML
Cecil, great to hear your TS520S back on the air (loud & clear) after a many weeks repair delay; brought on by the forces of nature.(ED)

<<VOLUNTEER OPPORTUNITY>>

Some may recall that I have been associated with the Air Space Museum as a volunteer in the Research Library. Recently became acquainted with the "Retired Senior Volunteer

Continued NEXT PAGE

Program (RSVP)-main office also located in the Kirkpatrick Center Museum Complex. As a sort of Inquiring Reporter, wish to pass the following; obtained from Sarah Tompkins at the RSVP office. Merely suggest that some of our chapter-or other readers may desire to participate in this program.

"The Retired Senior Volunteer Program (RSVP) of Oklahoma County is dedicated to providing meaningful volunteer opportunities for persons aged sixty (60) and over", declared Executive Director, Beth Braun.

Currently over 825 local retired senior volunteers contribute their services to over 100 local non-profit and governmental agencies. Average number of monthly hours reported by the membership is over 14,000.

There is no cost for membership in RSVP. The program is, in effect, a service broker; matching senior volunteers with volunteer opportunities according to interests, experience, and geographic location. While serving, RSVP volunteers are covered by excess accident and liability insurance. Assignments are varies with very flexible hours.

The American Red Cross, Oklahoma Blood Institute, City Schools, Oklahoma City Zoo.....are among those agencies benefiting from the services of the (RSVP-ers). As Ms. Braun noted, "our volunteers do make a difference; I am proud of the work they do in our county".

In addition to support from ACTION, RSVP receives funding from the Oklahoma Dept. of Commerce and the United Way. The grantees expect that the program will be partially funded from local sources. "Local donations from businesses, church and civic groups and individuals make a big difference in the level of our service", says Ms. Braun. "We truly appreciate the support".

Any persons aged sixty (60)

and over who are interested in being a member of RSVP, or would like further information, please contact Sarah Tompkins, Associate Director, or Helen Alexander, Volunteer Coordinator, at 424-1416. The Oklahoma County Office is located in the Kirkpatrick Center Museum Complex.

Note: I am working in the "Literacy Link" area; one-on-one tutoring. Can say it is extremely interesting, takes little time & is a learning experience for myself as well. Will be happy to answer questions. Have also been trying to reason how Amateur Radio might play a part in the big picture??(ED)

Vy 73, Fred, W5NL

Mostly on Chapter 63's Sunday Meeting-on-the-Air & the Razorback Sunday Net, the following.

(1) Via K5DLE-My records since Aug. to Nov. show 100% check-ins for W5AS, K5DLE, W5EJU, W5EHR, W5NL. Those who have only missed once are W5FLO, K5DZV, W5HFU, W5HXR, W5VSW, K5WUF. Understand that Gene is well along with a super computer data bank for each member. (ED)

(2) Via W5KL-At QCWA National Convention some Board actions: (a) Next year's Directory will be published & FREE to all paid-up members. (b) The Board voted not to change the QCWA Logo. (c) The nominating committee is still working.

(3) Via W5ATO-At the Las Vegas Ham affair ran into AA00 in the parking lot where his RV was located and also at the one arm Bandito's. We shall expect a detailed account of AA00's super western nomadic trip for next months issue. (ED)

There has to be a way to stop this flow of words. Can only trust that many will glean something interesting or useful within. Since we had no "News Letter" with the ballot, instructions and plea from Howard was asked to say: "Please send Ballot, Pink Slip & of course your USA funds pronto". Howard certainly deserves this & Howard, Tex & Kudos for a job well done. (ED) Vy 73, Fred, W5NL.

SKELETON GETS FLESH

The Slot Antenna is an old design. Probably it was developed for use on aircraft, where it would introduce no additional drag. Its principle is simple! In a large sheet of conductive material you cut out a slot. If you feed RF energy into that slot, usually by tpping the feeders along the edges a bit up from one end, the slot becomes a good radiator. Oh, of course you have to make the slot of the correct dimension for the particular frequency to be radiated. But, the point is, a slot performs as a good radiator.

Some inquiring soul started whittling away on the conductive sheet into which the slot was cut. And he found that the thing would radiate about as well (but with some change in pattern) with the material whittled away to a mere skeleton.....thus the name Skeleton Slot.

Why all these words? The June issue of Amateur Radio carries an article on how some Japanese Radio Amateurs had discovered a new antenna, which they called the Hentenna, hen being a Japanese term for "wild-eyed." The hentenna is just a Skeleton Slot fleshed out with a new name!

QCWA & RCA

No, that's not Radio Corporation of America but Radio Club of America. It's the nations oldest radio organization, having been founded in 1910. Of late years its membership has been limited to only those persons who have made significant contributions to the art.

Chapter 63 has four members who also are members of the RCA. These are! L. F. Heithecker, W5EJ; Carl C. Drumeller, W5JJ; Brig. Gen. Leland W. Smith, W5KL; and C. L. Hallmark, Jr., W5ZWM. There are several other Central Oklahoma Radio Amateurs who are members of the RCA but not, regrettably, of the QCWA.



Minutes of November Meeting

Again, there weren't any. Instead of a meeting, we had a Weiner Roast at Will Rogers Park, Saturday, November 8. There were fifteen members and guests there as we tried to burn up what was left of Jerry, KD5IS's fence. Jim, K5VRL, seeming to think that Jerry wouldn't have much fence left after last year, brought some genuine logs. Didn't need them though. Jerry and I brought portable lights but we discovered the ceiling fixtures had power so we just transferred the bulbs from our lamps to the things and acted like we were uptown. There was plenty of weiners, chili, and dessert, burp! and a lot of good fellowship. Sorry some of you missed it.

I guess this is the last opportunity, as far as the C&E is concerned, for the VHF Club to wish all its amateur radio operator friends and their families a Very Merry Christmas and a Prosperous New Year!

Joe, K5JB, Sec'y

OPRA - Texoma Meeting Minutes

The following OPRA (Oklahoma Packet Radio Association) Hamarama meeting minutes were forwarded via packet radio:

The October 25th meeting of OPRA was begun at 4 P.M. by acting chairman Jay Fields, K8OQJ. This meeting was held at the 1986 Texoma Hamarama.

Following an introduction of what packet radio is, for those in attendance not familiar with packet, chairman Fields opened the meeting for discussion concerning OPRA organization.

MOTION: WB5HLR moved and N5OK seconded to "elect Ron Henson WB5TTU Secretary of OPRA". Motion carried.

As Mr Henson declined to serve as Secretary/Treasurer, K8OQJ was elected to continue serving as Treasurer by common consent. The interim steering committee was introduced and the following motion made:

MOTION: WB5TTU moved and N5OK seconded to "elect present steering committee and for them to proceed with incorporation of OPRA and develop organizational planning." Motion carried.

Remainder of the meeting concerned discussion on the following topics:

1. Path linking
2. Corporate donations
3. NWS packet station presentation by K8OQJ and KB5VP
4. Further discussion on incorporating OPRA.

It was the general consensus of the organization that all haste be made in the direction of incorporation.

As there was no further business, chairman Fields closed the meeting at 5 P.M.

The following were in attendance:

1. WA5MWD GARLAND, TX
2. W5CKG WACO, TX
3. KE5SA ADA, OK
4. WB5TWO KRUM, TX
5. W5KSX FT WORTH, TX
6. W5VCP DALLAS, TX
7. W5ANB NEW MEXICO
8. K5OK OKLA CITY, OK
9. W5BLW ARDMORE, OK
10. KA1CWM COPPELL, TX
11. WD5FUE HUGO, OK
12. WB5JYF SHERMAN, TX
13. W5MKX BEAUMONT, TX
14. N5ETU OKLA CITY, OK
15. W5FRC BONHAM, TX
16. WB5TTU HUGO, OK
17. WB5CVR SHERMAN, TX
18. W5TGP MCKINNEY, TX
19. NW5Q OKLA CITY, OK
20. N5CTR OKLA CITY, OK
21. WJ5Y WALTERS, OK
22. N5JMG MCALESTER, OK
23. K5LDL EL RENO, OK
24. WD5DYI OKLA CITY, OK
25. WD5DYJ OKLA CITY, OK
26. KB5TN WYLIE, TX
27. WA5IJA ARDMORE, OK
28. WA5CJG MUSTANG, OK
29. KB5UP TULSA, OK
30. N5OK CLAREMORE, OK
31. N5FEE CLAREMORE, OK
32. N5IHF ADA, OK
33. WB5AOH FT GIBSON, OK
34. WB5HLR SALLISAW, OK
35. WA5VMS MUSKOGEE, OK
36. N5GIT MUSKOGEE, OK
37. W5IU FT WORTH, TX
38. K5KQG SHERMAN, TX
39. W5BNW TOM BEAN, TX
40. WD5CLB DUNCAN, OK
41. KA5YOM DUNCAN, OK
42. W5IJD SADLER, TX
43. WB5IZL GREENVILLE, TX
44. N5AUX ARLINGTON, TX
45. AF5U RICHARDSON, TX
46. WD5FZD ARDMORE, OK
47. W5NF FT SMITH, ARK
48. WB5CDW TULSA, OK
49. W5GM ARDMORE, OK
50. WB5UHO RICHARDSON, TX
51. no call ADA, OK
52. no call WHITESBORO, TX

(s) Ron Henson, WB5TTU, Sec'y, OPRA
10-26-86

The following footnote by K8OQJ is the result of conversation regarding the Texoma meeting and events that occurred shortly thereafter:

That steering committee may need a bit of explanation. It consists of:

Pres J. F. Fields, K8OQJ
Bethany
VP (NE Rep) Don Price, KB5VP, Tulsa
VP (SE Rep) Joe Perry, KE5SA, Ada
VP (SW Rep) Don Cunningham, WB5HAK
VP (NW REP) Joe Garland, WA5FLT,
Calumet
SECY Ron Henson, WB5TTU, Hugo

There was some discussion on possible new digipeater sites which will permit creating a stand alone network on 145.09, primarily because we need it to be 'controlled' as an emergency network & other states are beginning to get up on 145.05, which is great-for chit-chat, but this is supposed to be different.

The NWS thing was the description that Dick, WB5TMW, and others had presented to those who attended the Sept. 27th meeting as how a computer-driven access to NWS data base would work from boondocks.

All of this assumes we get the incorporation & tax-exempt status!!!

Mike, N5MS, is working on that for us. In the meantime, CORA has graciously agreed to act as our agent to receive equipment donations until all the paperwork on our identity and status can be completed and approved. J., K8OQJ

OPRA -- Regional meetings

K8OQJ spoke to the Great Plains ARC with about 18 members in attendance on Tuesday, November 4th. This discussion began with an explanation about the packet-radio mode and the recent surge in interest, both VHF and HF, and a viewing of the Tuscon Amateur Packet Radio (TAPR) video by Pete Eaton, WB9FLW.

The video provided a basis for further discussion of recent research into the development of digital radios to better handle faster digital communications, higher speed modems, the operation of link layer levels 3 and 4 along with the Network Node Controller (NNC) together with the advantages of error-free communications and hard-copy for emergency communications.

The purpose of OPRA was described and the need for a non-profit, tax-exempt status. This led to an update of the status of that sequence of requirements and steps. Next was a description of the new of

inned

for OPRA. A description of the interface with the National Weather Service Forecast Office, their products offered upon demand through computer-controlled access and the National Severe Storms Laboratory participation.

There are only three packet operators in the northwest region at this time, so the bulk of the interest was in the fundamentals of packet radio and the equipment needed for operation. Several amateurs were keenly interested and stated that they had been following the packet radio articles in the periodicals, but, for the first time, really understood how packet operated and its features. Bill Wyatt, KD5JR, stated a motion that the GPARC support OPRA in every way that was required, and it passed with unanimous approval. Several amateurs were quite interested in providing immediate assistance and seemed a bit disappointed that the situation could not be accelerated at this particular juncture. KBOQJ was assured that GPARC could and would provide personnel to maintain the digipeaters in their region and the Civil Defense EOC would gladly participate in the emergency communications program. All-in-all, the presentation was exceptionally well received and heartily appreciated.

A Southeast regional meeting was held Saturday, November 8th, at the City Hall in Ada with about fifteen in attendance. Amateurs from Ada, Ardmore, Claremore, Hugo and Poteau were present with about half being packet radio operators and the remainder interested in packet. All of the attendees were briefed upon the current status of OPRA and the purpose and plans for development. Since there was agreement for continued support of OPRA, the remainder of the meeting was devoted to the introduction of packet fundamentals and its operation. KBOQJ, who was not present, later learned that the Ardmore Civil Defense office would provide some funds for the establishment of a packet station in their EOC.

The Southwest regional meeting will be held in Lawton on Wednesday, November 12th, at 7 P.M. in Room E of the Public Library and the Northeast regional meeting will be held in Tulsa on Saturday, November 15th, at the West Regional Library at 10 AM. Don Price, KB5VP, will host the NE regional meeting, while KBOQJ will present the program at the SW regional meeting. Because of the state-wide nature of OPRA and because OPRA is attempting to establish a state-wide network of digipeaters which will be operating on the frequency 145.09 Mhz and will be

dedicated to operation during civil emergencies serving the citizens of the State of Oklahoma, all amateurs are invited and encouraged to join OPRA at the nominal annual dues of \$12. This money will only be used for the operation and administration of OPRA, membership in CORA, Inc. and subscriptions to the Collector & Emitter. (The address of the acting Treasurer is J. Frank Fields, KBOQJ, 3820 N. Riverside Drive, Bethany, OK 73008.)

While OPRA will promote the use of packet radio, it will not restrict the membership to those who will operate that mode. It is only necessary that the members share a common interest in public service. 73 & happy packeting, de KBOQJ.

What Antenna? Who Me? (Part 2)

Last month, the article on hidden antennas had gotten too long for one month's C&E so I chopped it in two. The first part dealt with the fundamentals one must grasp firmly if he is to gain much enjoyment out of wire antenna experimentation, construction and fabrication. Being able to understand, perhaps even visualize, the voltage and current patterns on an antenna wire make it possible to make some pretty good choices on ways to string the things using available supports.

This month I want to relate some of the real life experiences I have had in portable operation while traveling on my job, and traveling just for fun.

One of the first portable operations I can remember was from an apartment house in Bethesda, MD. I had planned for the trip by gathering sections of tank whip, bundling them so they could be hung in an airplane closet. I put together a flexible tuning network using a small section of B&W coil stock and a capacitor in a plastic box. It was primarily planned to be used in the L network configuration. I planned to use my noise bridge to tune the antenna circuit so I had all the necessary cables and fittings for that. I think I was using the SB-33 at the time so I could get out a whopping 50 watts. Thus, I didn't take the antenna seriously enough, thinking I could overcome the poor performance of a short whip with sheer power!

As soon as I arrived, I put together the sections of tank whip, about 20 feet long, and proceeded to extend it out the window by tying the inside end to a kitchen chair. While I was fishing for a ground point in the nearest convenience outlet, there came a knock at the door. The apartment manager, after he recover-

ed his initial shock of seeing the apparatus, told me that I was going to have to remove that thing from the window. The police had stopped by and so advised him that things weren't permitted to hang out over the street. I was 10 stories up and sure didn't think it would be noticed from the ground but I guess it was so I quickly agreed to take it down (until after dark).

My operation was a bit subdued that night because I had blown my cover. I did give it a try but don't remember it being too good because it was doomed from the start anyway. I was depending on the building wiring to act as a counterpoise (the other half) of the antenna. I don't think that I have ever had any success using building wiring as a ground when the antenna was going to have a high current feed, as did that one.

The next day, I went scrounging for some wire and found it in a surplus store. Since my apartment extended all along the wall of the building, I had a notion to suspend a balanced antenna along the outside wall and feed it in the center. That I did. I found the ultimate use for the tank whip. I used it to pass the wire from window to window until it was draped from one end of the building to the other. In the approximate center there was a dinky little patio where I went to work with the tuner and the noise bridge.

I rearranged the coil and capacitor into a balanced circuit like Figure 1, so I could transform the 50 Ohm from the coax to whatever the antenna felt like it wanted. As I remember, the length, end to end was in the order of 50 feet so I knew it would be capacitive on 40 Meters and would need some series inductance from the coil. If I got lucky with the coil taps I would be able to make do with the parts I had on hand.

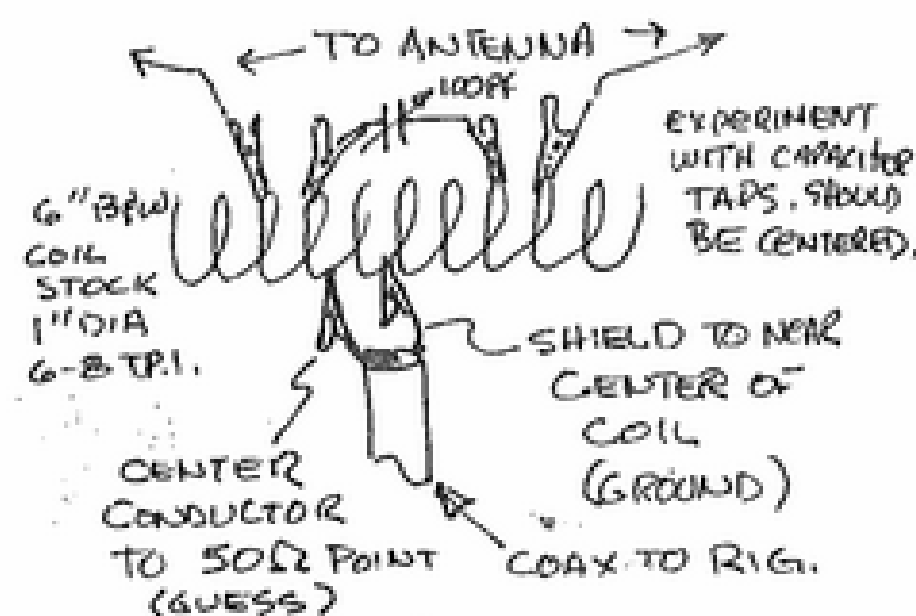


Figure 1. Balanced Tuner

The antenna noise bridge is a device that generates wide band noise that can be heard in the receiver. The bridge part of the thing permits connecting a receiver to one leg of the bridge and an antenna to another.

her. There is a control that sets the impedance of the bridge and when the antenna matches the set point of the bridge the noise in the receiver goes away. With such a device, you don't have to transmit to figure out what the antenna looks like. If you have it at resonance (with my simple bridge) you can determine the resistive part of the antenna's impedance by turning the control until the noise goes away. With a more complex noise bridge there is also a reactance control that lets you tune to see also what the reactance is when it is not resonant.

For this application, the noise bridge is set at 50 Ohms, various taps tried, and the capacitor tuned about until a null is found on the receiver. It is a tedious method because the null occurs at one tiny little point in the adjustment and there is no indication when you are getting closer or farther away. At one point, I found the null and then noticed that if the antenna was disconnected, the null remained. I had tuned the coil alone to a point where the coax tap had a 50 Ohm impedance. Needless to say, it would have been a very poor antennal

With all this messing around I was able to tune it up and make a few contacts. The antenna wire was almost impossible to see from the street during the daytime so I had succeeded in one part of the specification, concealment. Also, by selecting a balanced antenna design, I had no problems with stray RF floating around the shack, looking for a ground to go to. With the tuning network I was able to get on 20 Meters during the day and I think I remember making a contact with Charlie, WA5JGU, on that trip. The only disadvantage with that particular setup was the tuning unit that was necessary to make it work.

The next portable operation I can remember was from that same area when I was in a motel about three stories up. I had prepared to try a kit 40 Meter walkie talkie I had built from a kit and was going to try the loaded whip that was furnished with it. When I finished building it I couldn't make any contacts so I set out to make a wire antenna. At a local electronics store I found a spool of bare number 30 copper wire cheap and some miniature coax. At a variety store I found some monofilament fishing line and some lead sinkers. I paced off the room and unspooled two quarter wave lengths of wire and unreeled a bunch of the fishing line. I lowered just enough of the monofilament line out the window (with one leg of the antenna attached) to reach the ground. Then I went out-

side and tied enough additional line to it to reach a light pole in the parking lot. Repeating the process with the other quarter wave length of wire resulted in an inverted vee with the feed point at my window sill. The coax was attached at this point.

In this case, I chose to try and build a resonant antenna because I had no materials with which to construct any kind of tuning unit. As it turned out the antenna worked fine.

The only contact I made on that trip was with Hoss, WA5ZAI, who was located in Dayton, OH at the time. The kit I had built was defective and was only putting out 50 micro-watts (on 40 M, the rest of its 5 watts output was 455 kHz higher). Hoss heard me whistle some morse and we were able to make a schedule for later but never hooked up again. The antenna was working fine or we wouldn't have made it all under the circumstances. This antenna was virtually invisible from the ground but the monofilament fishing line caught the sunlight and could be seen easily. I had made the mistake of buying monofilament line that was designed to be easily seen. Never the less, I wasn't hassled about the thing because I doubt anybody noticed it.

In Pueblo Colorado I operated from a motel, on the second floor with the same number 30 wire. This time, I spooled out a length of about 80 feet and taped it to the ceiling of the breezeway and tied it to a stake out in the yard, using a short length of fishing line to insulate it from the stake. About 65 feet would have been half wave length on 40 and about 130 feet would have been half wave length on 75 so I just struck a compromise to give it a shot, trying to avoid having 3/4 wave length on 40 (about 97 feet). Again I used an antenna tuner in the form of an "L" network to resonate the thing.

By selecting a length that would be more or less voltage fed on both 40 and 80 meters I didn't have to worry about finding a good ground on the second floor of the motel. I ran a wire to the plumbing in the bathroom and the system was happy. I remember making a lot of good contacts with this thing so it seemed to be a fairly efficient antenna. I was using the SB-33 at 50 watts, I think. Some times I used a TenTec CW rig that ran about 3 Watts and seemed to do pretty good with these kind of motel operations.

What these examples so far show is the desirability of using either a

balanced or a voltage feed antenna to avoid the necessity of finding a good RF ground to get decent efficiency. The ultimate experiment was when Fred, W5NL, and I set up a 1/2 wave vertical 75 Meter antenna in the Colorado mountains one autumn. With all the tall pines around we figured we could find out how a half wave length vertical would compare to a horizontal one. We used the slingshot to get two lines over the tops to two trees and used them, tied together, to hoist up the vertical between the trees. Highest point we could manage was about 90 feet so we made a capacitive top hat by extending the top of the antenna with a couple of wires in the directions of the supporting trees. It was like a tall "T". The top section was, I would guess, about 30 to 40 feet from tip to tip but being in the low current portion of the antenna, and being fed in phase, shouldn't have contributed much radiation to effect our desired vertical E field pattern.

The antenna was brought right into the shack and it was fed with my favorite antenna tuner, a 'T' network. On this trip we didn't have to skimp on the accessories and we had two tuners. One Fred brought and my home brew bread box sized 'T' matcher. The reason I like the 'T' configuration is that it is easy to converge on a match because as soon as you see the SWR start to fall while rolling the inductor, you know which way to turn the capacitor(s) and the thing goes quickly into a resonant condition, minimizing on the air QRM. The 'T' matcher is shown in Figure 2.

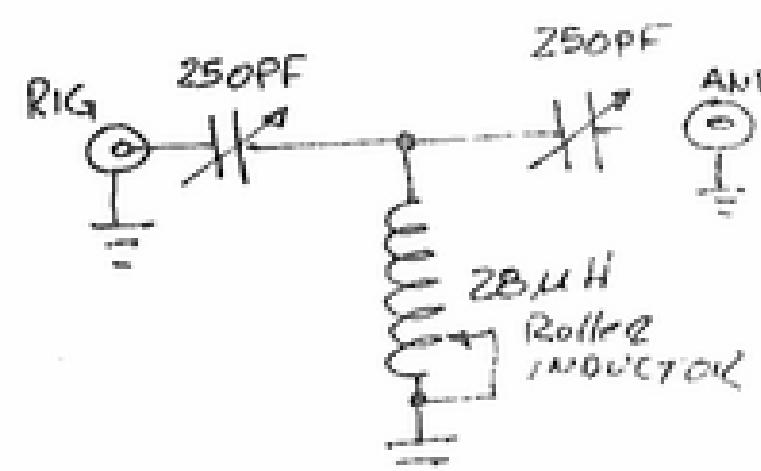


Figure 2. T Matcher

We also put up a couple of horizontal 75 meter antennas at right angles to each other so we could do some real comparisons. Unfortunately, the horizontal antennas were probably only 25 to 40 feet off the ground so the patterns from them was horizontal in some directions and vertical in others. In our tests, we did find some instances where one antenna performed better than another but over the long run, none of them performed better than the rest.

None of these antennas were meant to be clandestine but if the vertical had been made out of fine wire it would have been unnoticeable. The two hardest things to hide are the supporting structure and the coax. What most people call an "antenna" is actually a tower, the supporting structure. If you can get away without that part of it you can probably pull off a clandestine operation. Someone, I can't remember who, was talking to me with a 40 Meter half wave tossed over the roof. I think I remember hearing Charlie, WA5JGU, or Bob, W5HXL, working someone with a half wave lying on the ground. Admittedly not good way to do it but it shows what will work in a pinch.

Since I have no experience with ground mounted verticals, I can't give any personal experiences with them but I must admit that they are pretty inconspicuous and easy to install if you simply drive a ground stake for a ground. I helped Stan, WA5YFI, install one on a roof and we had to string some radials underneath it to act as a counterpoise. We found that lengths of the ground radials was critical. We had to prune them to get his SWR down to an acceptable level. I seem to remember we had a couple of radials for each band and each was approximately 1/4 wave length long. After doing this, you might wonder what the use was of having the vertical in the first place. Well, theoretically, he had a vertical polarization and should have had a low angle of maximum radiation. Who knows?

Fred, W5NL, was persistent with his ground mounted vertical and though I used to heckle him about having a puny signal he was probably as successful. I was in making consistent contacts on our weekly schedules and the proof was in the performance. It did the job. What else could you want?

I visited a home in the Northwest OKC area that had a vertical hidden in the back yard. I thought from looking around that it was the kind of neighborhood that might have a restrictive antenna covenant problem so the Amateur shall remain nameless but I bet that when he wants he can get on HF and do a respectable job. His antenna was unnoticeable from the street.

There is a question of durability when it comes to fine wire. My first dipoles were made from wire stripped out of TV twin lead. It must have been about 22 gauge. It lasted about 4 or 5 years before the first wire broke from ice loading. Even then it wouldn't have broken except I was anxious to meet a

schedule and tried to shake off the ice, breaking the wire. I wouldn't expect smaller wire to stand a collision with a bird, in fact the number 30 stuff I used to use in the motel rooms probably wouldn't stand up to a crash with a bumblebee. The wind in Oklahoma is a force to be reckoned with. I once lost a wire when a small branch blew off a tree in a thunderstorm and snagged it. It is usually not a problem to replace a broken wire except I usually find them when tuning up for a schedule and it is cold and rainy outside!

I guess all this rambling boils down to a couple of "don'ts" and the rest of the laws of nature are fair game. Don't try to current feed a quarter wave length (or odd multiples) of wire unless you are on the ground and have a really good ground connection. If you are going to end feed a wire, try to arrange it to have a length close to a half wave length (or multiples). Tie off the high voltage parts so they don't sway near objects. A very small capacitance change near the high voltage parts of the antenna have a drastic change in impedance. (My 75 Meter mobile whip detunes when I drive under a bridge.)

If you can put out two fairly similar wires, current feed them against each other. Use a balun if you must but it isn't necessary. You can use a 40 Meter antenna on 15 meters as a 1 1/2 wavelength antenna and you can generally use a 80 Meter antenna on 10. For 80 and 20 you can add two more pair of wires to the same feed you are using for 40 with little or no interaction between them. The resonant antenna will be low impedance and all the rest will be high. The low impedance one will draw all the current. Antennas that don't draw current can't influence tuning.

Inverted vee configurations can lie in any plane as well as vertical. If using 50 Ohm coax, I have observed that tuning becomes difficult if the angle between the legs gets less than 90 degrees. It probably has something with the characteristic feed impedance dropping below 25 Ohms, though I never looked into it. By the way, the angle between the legs affects the feed point impedance at resonance, as does the proximity of the ends to ground. I have had good results with the antenna ends as close as 6 feet to the ground.

My friend Stan, WA5YFI, had some experience with a wire tacked to the outside of his house at the second floor level but I don't remember it giving spectacular results. I have had some experience with attic ant-

ennas and all I can say about that is don't bother. In the previously mentioned experiment in Colorado with Fred, W5NL, we tried an indoor antenna on 15 meters and the outdoor antenna beat it all to heck, both on receiving and transmitting.

I would like to here some experiences you have had in fooling the neighbors. Remember to use CW if you really are in a hostile environment and blame the static on the power company, or say that you heard that some burglar alarms make that kind of noise. If that don't work, tell 'em it must be one of them cellular radios and you can't help them track down the noise because it is against the law to have a radio that will pick up those things and the KGB will get 'ya. Joe, K5JB

TAPR to Offer Mode JD Modem

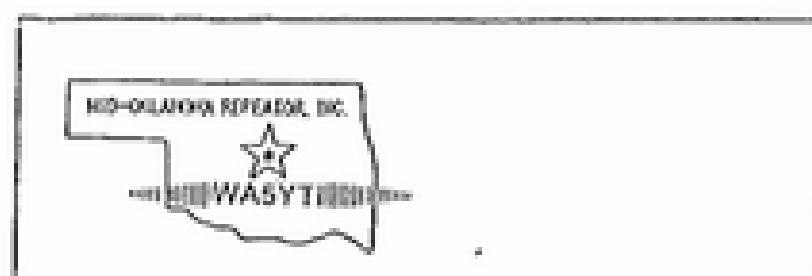
(From 10/24/86 ARRL Letter)
According to Tom Clark, W3IWI, TAPR (Tucson Amateur Packet Radio) will soon offer a modem kit for use with F0-12, Mode JD. The unit will feature a Manchester FSK modulator for Mode JD uplink and a PSK demodulator for the downlink. In addition, it will also include a PSK modulator. The unit is designed to work with the TAPR TNC 1 and TNC 2 as well as several of the TAPR clones. Details available from TAPR and AMSAT soon.

Tidbit Dept

During the weiner roast, Jim, K5VRL, and Hugh, KA5DGY, agreed on a couple of good chemicals for use around the hamshack. One was Extend, manufactured by Duro. It is a rust stopper and cover upper that is useful on automobiles and steel antenna masts that have lost their galvanizing, or never had any. Jim used the Extend on his Honda and Hugh was planning on using it on a worn place where his tri-bander had been mounted and loosened, wearing off the protective coating. Extend has to be brushed on and reacts with the rust present, turning black in the process.

The other chemical they discussed was was an epoxy called JB weld (nice name) that Jim used to repair a Hustler aluminum mobile antenna mast. He fitted two parts inside each other and has had no problem since. By the way, both epoxy and polyester resins have an affinity for aluminum. They work less well on steel.

For steel, if you can get a good fit, Eastman 910, known as Super glue, works better. You can set the glue that oozes out of a joint by putting plain water on it. It will catalyze and no longer be a hazard to your little pliers. Joe, K5JB



My apologies to members who did not get the word of cancellation of the October meeting. For some reason the message announcing the cancellation did not show up on the 07-67 machine, but we did get it on the 34-94 machine. The Civil Defence facilities were in use due to the heavy rains and flooding we were experiencing. We just could not be accomodated in that facility.

I don't know what happened for November. Election of officers is supposed to take place during the November meeting. There are over two hundred fifty members in MORI and we had five members show up for the last meeting, not all five were there at the same time either! Without a quorum the only business that can be conducted is to adjourn which we did. I know interest in club activities is slow in the amateur society, but we must remember we get out of a club whast we put into it. I believe we'll try doing the elections again at the Christmas Dinner.

The Christmas Dinner will again be held at Furr's Cafeteria. The location is NW 63rd & Macarthur. The day is December 2, 7:00 pm. The serving line will stay open 'till 8:00 pm. I for one am looking forward to having the elections and passing the torch on to the successors. We will need a full slate of officers, including a new CORA representatives....

So lets get with the program guys and gals. There really isn't much to holding an office of the club. All you need is an interest in doing it

73 de KA5NUG

CHRISTMAS DINNER

The Great Plains Amateur Radio Club will hold it's annual Christmas Dinner. Saturday, December 6th commencing at 7:00 P.m. The meal will consist of a covered dish dinner with the club furnishing the turkey and ham. Participants are asked to bring a side dish and eating utensils. The festivities will be held at the City of Woodward Public Works Building located at 700 Lakeview Drive on the east side of Woodward. Please try to attend!



The Oklahoma Independent Amateur Radio club held its November meeting on the 11th. The first topic of discussion was the "graduation" of the new Novices from our Ham Classes. The new Novices are:

L. D. Wann, N5JVE (General)

Bob Maier, KB5BBW

Norman Jackson, No Call Yet

Larry lake, No Call Yey

The Novice classes have concluded successfully and we are currently underway with the Technician upgrade class so be prepared to hear new voices on 2 meters real soon. Congratulations guys, I know how hard you worked for it! And..... Thanks go out to the instructors who helped make it possible.....

Lin Jackson, KA5ZJM

Dave White, WN5LUI

Glen Bishop, WN5J (ex KA5PUB)

Biz Wichy, WDOHCO and

speaking about Glen...it seems that he has gotten a job with a CATV outfit in Oak City and will be moving there shortly. Glen is very active on 2 meter sideband and 6 meter FM. We are truly sad to see him go. He has helped in many of the public service events we had these past yars in Ponca and could be counted on to help put up antennas or put together electronic projects that more likely than not will start on Friday evening and end up working on a Saturday morning. We all wish you best DX at your new QTH !

The last item of business to discuss was the .31 repeater. Dave White, WN5LUI reported that the squelch and fan problems have been resolved. A

Hamtronics COR and ID'er have been built and installed on a shelf inside the rack. Everything is up and working and the only thing that needs to be done is to install the unit at the tower. With that the meeting was closed at 8:05

Don't forget the next O.I.D.A.R. meeting is scheduled for 12-09-86.

Biz Wichy, WDOHCO

IT IS A MARK of intelligence, no matter what you are doing, to have a good time doing it.

You've no idea what a poor opinion I have of myself, and how little I deserve it.



A.C.A.R.C. CHRISTMAS DINNER

Well it's almost time to paste up the C & E again. Thanksgiving will be over before we know it. Soon it will be Christmas. For many years the Aeronautical Center Amateur Radio Club got together on the First Friday of December for dinner and a lot of eye ball QSO's.

Well this year will be no different, on the 5th of December we will meet at DODSON'S CAFETERIA, 2150 SW 59th. The cafeteria is located in the shopping center on the SW corner of SW 59th and Penn. We will start going through the serving line at 6:00 pm, and will have a private room so we can talk and have a good time. It is very important for you to call me (Bob Pace 376-3569) and let me know if you are coming so I can tell the cafeteria and they can set enough places for us. By the way, you don't have to be a member of ACARC to join us, we would love to have every Amateur Radio Operator in Oklahoma City to come out and eat with us.

COME ONE COME ALL !!!!!!!!!!!

FOR TRADE: Heathkit SM2260 AMP, VOLT, OHM meter. Power Supply. Powerstrip with circuit breaker. 3" box fan. Trade above items for an air inductor, butternut vert, or shortened 80 meter dipole. Frank, N5JVA, phone 528-5867

KEYER UPDATE

The Dual Op Amp Keyer in the November issue of the C&E made mention of figures 1, 2, and 3. They didn't get printed but they were used for purposes of explaining the operation of the Keyer and you need only build the circuit shown in the article to get a working version. Fig. 1 was an OP amp with a resistor used for negative feedback. See ARRL Handbook or other text for more of this. Fig. 2 and 3 are simply parts of the whole diagram. Ignore the figure number when reading the article and the rest (I hope) will make sense.

Salem

ELECTRONIC PRIVACY ACT NOW (UGH) LAW!!

Will Rogers, our much beloved native son had an explanation. The gentle humorists used to say that whenever he has a joke or story to tell, he was just having fun, but when Congress makes a joke, its a law. And, unfortunately, that is just the way it goes. There really is no need to blame the Republicans or the Democrats (I capitalize these names out of my historic sense of respect for what they used to represent). I would have to say that the buffoonery in this instance in enactment of the Communications Privacy Act was bipartisan.

In a country which prides itself on freedom, it has just taken a left turn at the public airways. And I can assure that this trip toward the privatization of the public ether is off the freeway. This time the cross country jaunt was not justified on the basis of "national security", that garbage can catchall phrase for government by the few, nor did the rationale for limiting access to the airwaves center upon the usual "law and order" scare tactic. No, we sold our freedom to know for a private interest and for a cost less than the 30 pieces of silver paid to a previously well known historical trader.

If it sounds like I am just a little sour, well, so be it. The Electronic Communications Privacy Act (ECPA) is a toothless ploy designed to "guarantee" security of communications to a private group of radio spectrum users. Essentially, the taking of a public right (make that past tense) for a purely private use. It was a bill aimed primarily at a particular industry, those people who make scanners, and a principal group, those people who use scanners. One thing is also clear. The law is not even well written and easily ambiguous in its interpretation. During the hearings, the Justice Department indicated that it could not be enforced without

substantial interference with civil rights, including the right of privacy it pretends to protect. In order to understand why something like this can happen, you must contemplate that it is with particular pride that Congress points to laws that are intentionally vague and ambiguous and somehow considers these orphan children to be proud examples of bipartisan "compromise." If you don't know what it means, that's fine. Everybody will simply think that it means what they want it to mean even though those meanings might be completely different. How neat peacho!! This is how we pass laws that everybody agrees with. But once the law is shoved out the door, it becomes the property of the Executive and Judicial Branches. And they must apply the law in the concrete crevices of the real world where the real rock and the hard spot are represented by actual people. And the policeman who wants to come into your house need only spy that scanner through your window to establish "probable cause" of complicity in a federal crime.

The ECPA amends the Federal Statutes in Title 18, Chapter 119. These statutes involve the interception of "wire" and "oral" communications. The statutes were originally part of the Omnibus Crime Control and Safe Streets Act passed back in the 1960's when there was an intense interest in attacking civil unrest, among other things, by the use of electronic surveillance. There was an advantage, however, the same limitations that made it illegal for the individual to "tap" your telephone or oral conversations, also made it illegal for the government to do so. However, the government has a big advantage which the private citizen does not enjoy and that is that when it wants to, it can go get a search warrant supposedly based on "probable cause" (whatever that is) that allows them to hook onto your phone or listen with a device. The warrant is obtained from a judge, whose salary is paid from the same public till as the police officers salary. They must weigh the evidence placed before them and determine if "probable cause"

exists. Bear in mind that a warrant issued on probable cause is a warrant that permits a search on less than certainty. A layman's definition of probable cause is "more than a suspicion and less than a certainty." A more technical definition centers around the existence of probable cause when "facts and circumstances articulable and reliable lead to the conclusion that a search should be permitted or an arrest should be made." There are not a lot of guidelines in either of these brief explanations and for the most part, probable cause resides in the minds of the judges in the form of some individual application.

The changes to the 1968 Act represented by the ECPA involve "Electronic Communications" which are "any transfer of signs, signals, writing, images, sounds, data or intelligence of any nature transmitted in whole or in part by a wire, radio, electromagnetic, photoelectronic or photooptical system that affects interstate or foreign commerce."

The law itself is intended to close "loopholes" in the previous law and extend protection from unauthorized interception to new electromagnetic uses such as cellular telephone, electronic mail and various video/data communications. The sponsors in the Senate were Patrick Leahy (D-Vt) and Charles Mathias (R-MD) and in the House by Robert Kastenmeier (D-Wis) and Carlos Moorhead (R-Calif), who all apparently are electromagnetic lightweights. Their fault lay in listening to lobbyists of the private radio communications industry that sought and obtained "protection" for these new radio services that were equivalent to the previous protections granted for wireline communications. But the flaw of this argument easily falls out by the application of just a little logic. Wireline and private oral conversations do not occur on readily accessible mediums. Someone who listens to a telephone conversation through the use of a "bug" or intercepts an oral conversation with a listening device is engaging in an activity with equipment intended strictly

for the purpose. Now, the argument can be made that scanners are devices manufactured for the strict purpose of electronic eavesdropping. But the fact is that a person with a scanner can put it to many legal uses whereas a person with a "bug" or other listening device can only use the devices for "mostly" illegal purposes. I suppose that there are some legal uses for bugs, especially those that are used to tape record your own oral or telephone conversations. That is legal. Any person can tape record or intercept his own conversation without telling any other party to the conversation. That is legal. But he cannot tape record or intercept the conversations of a third party. Thus the legality of the device that is used centers on the activity that it is used for and the intent of the person who uses it.

With this in mind, Congress sought to extend this distinction of the "primary" use of a device into the electronic privacy area. It prohibits and makes it illegal to manufacture, assemble, possess, sell, advertise or mail any device "primarily useful for surreptitious interception of electronic communications" (This includes kits). This rather broad band (pardon the pun) language is further hampered by the fact that neither the Senate nor House Legislative History define or suggest what devices fall into this category. In addition, if you have a kit of parts which is capable of becoming a prohibited listening device, you are also breaking the law, even though the individual components may have no actual physical construction that renders them capable of operation.

What is wrong? Well, first, Congress' brush is rather broad. We don't really know whether a device is "primarily" useful for breaking the law from just what Congress has written. And without legislative guidelines, the blanks must be filled in by the Courts. However, if you have a kit of parts that, upon assembly, might be used "primarily" for surreptitious interception, you may not know it until a court says it is so. That scanner that listens

on all bands and all modes might have some legal uses, but if the perception to a lawman is that it is primarily capable of being used for an illegal purpose, it is off to the pokey.

This stinks for several reasons. First, the determination of whether a device is illegal rests on some subjective standard in the minds of, first, the police officer, and then the district attorney, the judge and then the appellate court. Your view is really not important until you get to the jury and then you can speak your mind. But this standard of discretion is so broad that it does not accurately and reasonably communicate to the citizen the types of devices that are illegal. Due Process means at the very least that you should be entitled to know the conduct which is prohibited prior to the enforcement of a law. This vague language just doesn't cut the constitutional mustard.

Application of these principals will have no real guidelines until the courts have had an opportunity to examine them. This simply means more chaos until there are enough decisions to get a general picture of the proper enforcement, if any, of these statutes.

So what can not be monitored? Well, there is a whole list of prohibited interceptions. And there are also some exceptions that include amateur radio. But, basically it is illegal to listen to radio communications that are not "readily accessible" (again, the usage determines the legality and the presumption is that a communication that is not readily accessible that is being accessed with a special device capable of interception is probably a device that is "primarily" intended for illegal use).

"Readily accessible to the general public" means communications that is not:

- scrambled or encrypted
- transmitted using modulation techniques whose essential parameters have been withheld from the public with the intention of preserving privacy "spread spectrum"

- carried on a subcarrier of other signal subsidiary to a radio transmission
- transmitted over a communication system provided by a common carrier (excluding tone only paging signals, but including cellular telephone cellular telephone systems)
- transmitted on frequencies allocated under FCC Rules and Regs §Part 25 (communication-relay satellites); Part §74(e) (aural broadcast auxiliaries, including studio to transmitter links); Part §74(f) (Television broadcast auxiliaries and studio to transmitter links or Part §94 (private fixed microwave.)

W5YI correctly points out some major confusion at this point. Some of these prohibited communications are criminal while some are civil forfeitures. For example, listening to cellular phone calls is criminal, while listening to Remote Broadcast Pickups is a civil offense. This is basically insane. If you listen to a radio station's newsgathering team on their remote aural pickup, you could be subject to a civil fine and forfeiture, but if you monitor a cellular telephone call, you can be charged with a criminal offense.

The prescribed penalties are equally confusing. If you intercept a communications that is scrambled or encrypted (not readily accessible, get it?) or if you intercept the signal for a "bad purpose" (a question of your intent), the penalty is up to 5 years in jail and/or a fine of up to \$100,000.00. If you listen to an IMTS system, the fine is a civil penalty of \$500.00 if the signal is not scrambled or encrypted.

Now, what can be legally monitored? Well, this means radio communications that are generally considered to be readily accessible such as:

- cordless telephones (they are "easily intercepted")
- Any marine or aeronautical communication
- Any Amateur, CB or General Mobile Radio Service trans-

mission

- Any communication transmitted "for the general use of the public, or that relates to ships, aircraft, vehicles or persons in distress"
- Signals causing harmful interference to "any lawfully operating station or consumer electronic equipment, to the extent necessary to identify the source of the interference (dumb, what if the signal is encrypted, thereby making it not readily accessible, or and interferes with a regular broadcast service such as UHF television signals, especially since televisions can be used to hear cellular communications)
- Satellite transmissions of "network feeds", some audio subcarriers and cable programming covered by Section 705(b) of the Communications Act (why are network news feeds not protected and remote radio and televisions pickup are, especially since most of the "network" feeds take place over the common carrier channels of the communications satellites, an expressly protected category under prohibited interceptions)
- Any governmental, law enforcement, civil defense, private land mobile or public safety (including police and fire) radio communications systems which are readily accessible to the public. (what about scrambled or encrypted police communications?)
- Any other electronic communication made through a system configured so that such electronic communication is readily accessible to the general public.

What is especially curious is that many people, including the government, recognize that the law is vague, as well as impractical. It is simply a law passed for a less than important reason that will not serve the public, but will serve only a particular few. The reality is that many people listen to scanners and other radios. And no harm results.

Besides, what harm could it be to listen to a cellular broadcast (oops, not a broadcast, but a transmission) and get in trouble, but to listen to any number of police transmissions and that be perfectly legal, especially in light of many issues of public safety that the police transmission might involve. Or, why protect cellular transmissions and not cordless telephones? People have just as reasonable an "expectation of privacy" with a cordless telephone conversation as they do with a cellular phone. What's the difference, outside of the fact that a person with a cordless phone might be able to pickup a wired telephone and continue a conversation in private and the cellular customer will not be able to do so. So what? People will say the craziest on cordless telephones. Many can not tell or even explain the difference between the cordless telephone and a cellular telephone.

There are many other methods of reaching the privacy that cellular might be due, but it can not be legislated. It must be solved with technology. The ECPA does address this issue by defining a scrambled signal as one not necessarily accessible to the public. But the imposition of stiff fines will not make privacy a reality. During the hearings, the argument was bandied about that it would be prohibitively expensive to encode cellular transmissions. Hogwash! I can't pick up an electronics magazine in the past few days that hasn't featured a single chip scrambler made for communications. Other methods are in place right now. For example, the October 1986 issue of Mobile Radio Technology contained an article on the encryption of cellular phone calls. This system is in place in Washington D.C. right now and commands a \$65.00 monthly fee. The device is shoe box size and retails for \$2550. It works by converting the voice to a digital stream then encoding the stream according to a random stream of digits generated by a "key module." The cryptosync algorithm handles data through a standard RS-232 interface at 300, 1200 or 2400 baud

Anybody familiar with video recorders or compact discs known that with

a growing mass market, the cost of such a device will only decrease. Heck, the costs of the various cellular telephones and the sides they have undergone in the past several years amply demonstrate what will happen when technology gets down to business with mass marketing.

Another article in the May 1986 issue of Mobile Radio Technology describes another narrowband scrambler which combines analog and digital techniques. The cost for these devices now are around \$1,000.00 and up.

Several magazines have editorialized against the legislation, including MicroWave Systems News in their April 3, 1986 issue. The editorial correctly points out that the law is unenforceable and merely passes the buck when sophisticated data-security solutions are already on the shelves.

The ECPA creates a false sense of security to the nonencrypted cellular user. Thinking that they are protected by all the power and force of the Federal government, the user will chat away on the most intimate details completely unaware that their conversations might turn up on UHF television channel 82.

I personally view the vague and ambiguous nature of the act as the most dangerous part. It offers no clear definition to the listener what is prohibited and what is not and what equipment may or may not be illegal. Additionally, a pernicious application by an ardent law enforcement official might find an application broader than intended by Congress or touch on an activity that is inherently harmless, yet technically illegal. Discretion in this instance, especially when it could involve an invasion of the home, is to be exercised only with extreme caution and perhaps not at all. Only time will tell what role, if any, the ECPA will play in our daily lives while providing pseudoprotection to the erstwhile mobile cellular user.

Micheal Salem N5MS

IT'S THAT TIME AGAIN

Yep, it's time to elect some more officers for Chapter 63. Howard soon will have the ballots out. The proposed slate of officers should arouse interest. Now two things are up to you: 1) To make sure your National and Chapter dues are paid and 2) to mark your ballots and ensure that they are given to Howard without delay.

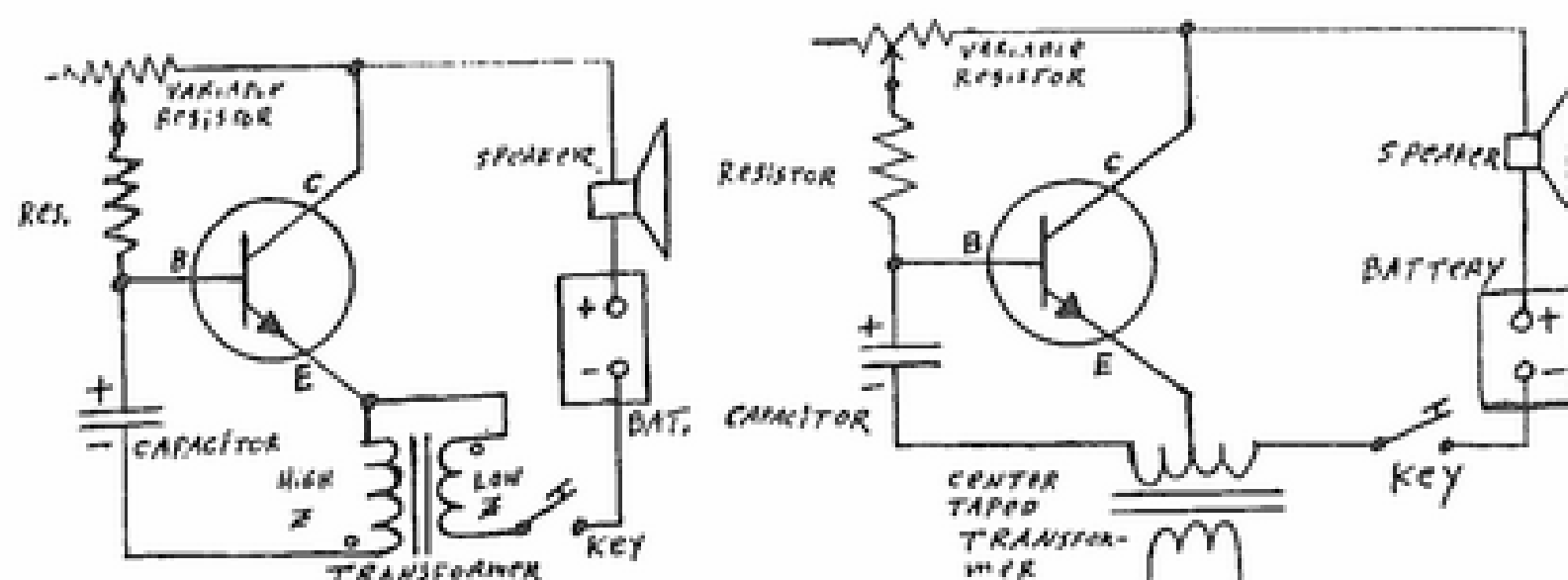
1 (405) 376-3569
BOB WASCJG



PACETRONICS RESEARCH CO.
COMPUTER SALES AND SERVICE
* TRS-80 COLOR COMPUTERS

TRS-80 IS A TRADE MARK
OF TANDY CORP. 1726 W. ROSEDALE DR.
MUSTANG, OK 73064

In health class a teacher asked a six-year-old what he did to protect his teeth. "I watch out for kids pushing at the drinking fountain," he said.



MONITOR YOUR KEYING

The Dual OP Amp Keyer has no side gone generator to give an audible indication of keying and any audio oscillator should do. Just be sure to use a polarity with the ground as negative. If you hook your oscillator up up backwards it will run continuously.

One good code practice oscillator or monitor oscillator can be built with a NE555 Integrated circuit and can be found in most A.R.R.L. handbooks of the past 10 years or so. The one shown in this article is really good for building from junk box components. You can often find all the components needed from a discarded transistor radio.

The unusual thing about this oscillator is it can work with almost any collection of components as long as they are not defective. The transistor can be almost any small general purpose transistor. A PNP can be used too. Just reverse the battery and capacitor polarity. It has no volume control but the variable resistor serves as a pitch or frequency control. The volume control out of a radio will work. The possible range of component values is:

- Resistor 200 to 1000 ohms
- Variable resistor 10K OHMS to 1 meg OHM
- Capacitor .1 to 10 micro farads
- Transformer almost any power or audio type
- Battery or power supply 3 to 18 volts
- Speaker any 4 OHM to 50 OHMS or so

The oscillator should work with many different components when built as shown but it may not put out a tone until the capacitor and resistor are the right values. If the resistor and or capacitor are too large, the oscillation will be at such a low frequency you will get a buzzing or even a popping sound. If they are too small the frequency may be above hearing range and will be inaudible. Turning the variable resistor or "pot" will cause a large change in frequency. Try it and see! In general, larger values of capacitance will give a louder tone because the resistance will have to be decreased to bring the frequency up to the same value as you would have with a smaller capacitor. This will cause the transistor bias to be higher and the transistor will put a larger signal.

If you want even more volume, try the version with a non center taped transformer and use a transformer with a large difference in winding impedances such as an output transformer or a low voltage power or filament tape. Be sure and hook the low impedance winding between the emitter and battery (or Key). If it won't oscillate try swapping connections on one of the windings so that the feedback will be in phase. When experimenting with these circuits I would advise starting with a lower supply voltage such as 3 to 6 volts and play with increasing it later if needed.

I've built a whole herd of these critters and they always work. They make great code practice oscillators and can be used for sidetone monitors, pulse generators, D.C. to A.C. inverters, alarms, signal generators, etc. If you have questions about this or the Keyer call me at 769-3733.

WISW

If all the radio operators were laid end to end, who would be on the bands?

We are waiting for one of the antenna manufacturers to come out with a vertical called the Totem Pole. The SWR would be low nan ... on the Totem Pole.

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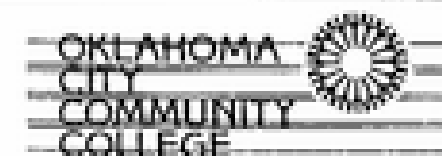
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* CHRISTMAS DINNER PLANS *

Most important first. Right? Right! The Great Plains Amateur Radio Club's Annual Christmas Dinner!! How's that for a beginning, and an ending of another great year for the club? This year's festivities will be held December 6th at the Public Works Building, 700 Lakeview Dr. in Woodward starting at 7:00 P.M. and lasting until who knows when. We will have a covered dish dinner this year with the club furnishing the turkey and ham and we, the participants, bringing all the other necessary goodies. Also we need to bring our own utensils, such as plates, silverware, etc. Along with the dinner we will have a short meeting with the election of four new board members. Those of us retiring this year are: Lewis, WSKFK; Bart, NZST; Kent, N5HID; and myself, Lois, N5JGQ. Those already mentioned as replacements are Bill, KD5JR; Carla, WB00GW; Ron, WB0PGD; Gerry, NC5C; Gerald, W05Z; Kent, N5HID; and Lewis, WSKFK. The floor will be open at the meeting for further nominations. A discussion has been going on regarding the possibility of separating the C&E Editor and Club Secretary positions. Those of us that have held these duties know the strain it requires holding both positions and doing justice to either.

DOOR PRIZES FOR ATTENDING??

I don't want to state anything official, you know, but there is a rumor going around that door prizes are being given away at the monthly club meetings. How else can you explain the fact that Gerry, NC5C came away from the last monthly meeting with a brand new Kenwood VHF Transceiver and amplifier to boot. Pass the word and probably attendance will rise!!

PACKET RACKET PACKETARO's

We were very fortunate to have Mr. J. Fields journey all the way out to Woodward to give us an excellent presentation on Packet radio. Besides an excellent talk he also brought

an outstanding video on Packet operation. I think that we all left the meeting with a knowledge of what Packet radio is all about. Even though I already have my own Packet station, eat your heart out WB5OVT, I still learned a lot at J's presentation. Packet radio seems, at first, to be very confusing and there are a lot of new terms and procedures to be learned. Our thanks to J. for helping us to have a very informative and entertaining evening. J. even coined a new term "Packetaro" while visiting in the far northwest. Who knows, someday that maybe our claim to fame.

SO YOU WANT THE FAX?

John, N5RVV, came by our QTH with a very interesting piece of gear that he had just completed. He walked back to the combination radio room, laundry room, storage room (and mostly OM's - a Pen) and went straight to work. He'd been here several times before, had recently trained Steve to fly a helicopter simulator on the computer, and was consequently used to climbing over dirty clothes, chairs, radio gear and other assorted items too numerous to mention. At any rate, he finally made it to the computer, loaded his program and hooked up the OM's high frequency transceiver. Low and behold we were able to see weather maps printed before our eyes. Just like Christmas in November! John had found an interesting article in "73 Magazine", had sent off for the program and built the necessary gadget (also known as a

tone-detector if you actually gotta know) to receive facsimile weather maps. Now the OM's think he needs one and I must admit it is pretty neat. I'm just glad the necessary equipment doesn't take up much room because I've got to find my washer and dryer one of these days. REMEMBER THIS?

The November, 1972 issue of The Great Plains Ham News contained the following article. "The FCC recently announced changes in frequencies and rules, effective November 22, 1972. Novices will now be able to stash away those old reliable crystals. The FCC rules changes include VFO operation for Novice Operators. The 80-meter frequencies remain unchanged for the Novice, but the 40 meter band was changed from 7.150-7.2 to 7.1 to 7.150. A new 10 meter band was included for the Novice, from 28.1 to 28.2 Mhz; but, the Novice lost the use of frequencies in the 2-meter band. The 15-meter Novice band was changed from 21.2-21.25 to 21.1-21.2 Mhz. General Class operators will have phone privileges from 3.89 to 4.0 Mhz on the 80 meter band, and 7.225 to 7.3 Mhz on the 40-meter band. Phone segments for advanced and extras included: 40-meter--7.15 to 7.225Mhz (Extra and Advanced) and 80-meter--3.775 to 3.8 Mhz (Extra); and 3.8 to 3.89 Mhz (Extra and Advanced)." This took place almost 14 years ago this month. It's amazing how time flies!

Happy Thanksgiving to all and try not to over eat because our Christmas Dinner is December 6th.

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Sam at 321-2601

The SCARS participants were:

The net opened just before 5 pm and closed at 11:11 pm. The group helped the general mgr keep in contact with the rest of the staff and had hams in every area of the operation helping with crowd control and keeping track of candy and supplies as well as passing along info such as when windows were broken, etc. There were 20000 people who participated in this unique community program.
(By Andi, KA6PKJ, via packet)

Don't forget that club has a contest on for the best design of a club logo. Designs are due at the Christmas party on December 13.

the first SCARS raffle held at the November meeting. Chances were \$1 and Lee, W5MCN, won a programmable timer and a new collection of jumper wires. He was the only one of all as he carried the prizes off into the morning sun.

on Saturday, December 13, at
7:30 pm in the Jack Santee
Lounge for the Christmas
party. Get you reservations in
to Andi or Dorinda NOW!! See u
there!
>>>>>>>>>> KD5IT <<<<<<<<<<<

The program will be presented by AD1S. George will show slides of another of his DXpeditions combined with a sailing trip. His last program was really great so bring the XYL and don't miss this one.

There are four people active on packet in Ponca now. KA5ZJM, WDOHCO, WBOQIR, and of course, KDSFX alias PNC. Work is progressing on the Ponca DP. I had it working for awhile, and the xmtr got cranky. If the weather is nice in December maybe we can get on location. Otherwise it will have to wait for warmer weather and we'll continue to use my TNC for DP.

KL7MA has a new packet setup in Perry and should have a good signal with his 160 watts into the omni at 45 ft. Maybe he'll have it on 24 hrs a day by the time you read this. I got a new ROM for my PK232 the other day, they have fixed some of the bugs in the earlier version (the bugs were very minor ones as far as I'm concerned) and added some nice new features. For those of you who haven't yet gotten into packet or the other digital modes (RTTY, ASCII, AMTOR, CW) the PK-232 can't be beat for all around value. It does as well on 2 mtr FM as it does on the low bands. It will work with ANY computer or dumb terminal that has RS-232C connections. Try it you'll like it!

Until next month, 73 from KD5FX.

Here is a list of CB's that use the famous "Cybernet" board, the easy one to convert to 10 Meter FM.

- 1) Hygain - 2680, 2681, 2683.
- 2) Kraco - KCB-2310B,
KCB-2320B, KCB-2330B.
- 3) Midland - 13-830, 13-857B,
13-882C, 13-888B, 13-955.
- 4) Pierce-Simpson - Tiger 23,
MKII, 40A.

There are other models that have the Cybernet board in them, they are identified by the "02A PLL" chip number on the PLL IC. Also etched on the boards are the numbers:

make and keep their commitments to actively participate in carrying out this program for ourselves and our community.

What is needed, now and in the future, is more people to make and keep their commitments to actively participate in carrying out this program for ourselves and our community.

"HOW WILL THE WAGON BE MOVED
WHEN THE MULES WANT TO RIDE?"

With your active and positive support directed to strengthening of the manpower pool, no one person, or a group of persons, are overburdened to the point of burn-out.

I know the Amateur Radio Community can be counted on to continue this program. If we won't do it, who will?

WE CAN MAKE IT WORK !!!!!

ENJOY!... REJOICE!
es 73 Dave, N5GOY

- 1) PTBM033A0X
- 2) PTBM036A0X
- 3) PTBM037A0X
- 4) PTBM039A0X

Be sure the radio has 3 xtals, because there were some boards made after 1977 that may have only 2 xtals on the board. Look for 3 xtals. In my search for these convertible radios I have seen many more Midland's & Kraco's than any other model. Check out your local garage sales & flea markets (ie Old Mary's on N.E. 23rd) The last 4 radios I found were purchased for \$5.00 to \$15.00 per radio - 3 in mint to very good condition. One last hint, read the model number carefully. Example: Midland made a 13-857 & a 13-857B. The B model is the correct model. The other one uses multi-xtal synthesis, not PLL synthesis of frequencies. Several of us in Norman have converted them for our vehicles & we use them for local contacts (therefore freeing up the 2 meter machine.) By the way, with xtals, FM detector board & radio it's less that \$30.00.

SUN	MON	TUE	WED	THU	FRI	SAT
DEC. 1		GREAT PLAINS MORI 2	SCARS NOVICE CLASS 3	AERONAUTICAL 4		GPARC CHRISTMAS DINNER 6
7	EDMOND CLUB 8	OIDAR OU 76'ers 9	10	ALTUS AREA OKC/PM 11	CHRISTMAS DINNER 12	ARDMORE SCARS COCO 13
WHEATSTRAW 14	VE EXAMS Red Cross 6:00 pm 15	AUTOPATCH 16	SCARS NOVICE CLASS 17	CIMARRON KAY COUNTY 18	EDIT NIGHT FOR C & E EARS 19	VHF CLUB 20
21	22	CORA 7:30 23	24	MERRY CHRISTMAS 25	26	27
28	29	30	31	Every one is having a Christmas Party. See your club section for details. The managing editor assumes no responsibility for the data contained herein.		

Q. R. Zedd

CHRISTMAS EVE AT HONOR ROLL

Twas the night before Christmas
And all through the shack
Not an eyelid was open --
Not even a crack.
And Zedd in his nightshirt
And Tondelayo so cool
Were all settled down
For a nap ere the Yule.
The rigs were scanning,
The Benchers were quiet,
And a station in Fuji
Was causing a riot
When out on the lawn
There arose such a clatter,
Zedd sprang from his bed
To see what was the matter.

The moon on the wires
Of the towers and beams
Gleamed like the best
Of a DXer's dreams.
When what to Zedd's

Wondering eyes did appear
But a Kawasaki 1000
And a bag of ham gear.
With a little old driver
So unfamiliar with trauma,
Zedd knew in a moment
It must be his Momma.

To save you some time
We'll get right to the best,
And skip how she'd cycled
From Mena on west.
For as Zedd barely saw her,
And was about to call,
Through the window she came
-- Rigs, cycle and all.

She was dressed all in satin
From her head to her feet,
Red nails and spike heels
Helped make her more neat.
Her hair, it was frizzy,
And her eyes were so bright
That any cowboy would know
That this was the night.
Her dimples were laughing,
She was covered with wiggles,
And Zedd, just seeing her,
Was convulsed by his giggles.

She said not a word,
But gifted the DX hog
With new rigs and keyers
And a 1,000-page log.
Then, leaving Tondelayo
10K of Pampers and a computer,
She fired up the cycle
With a roar and a hooter.
And rolling the throttle
And popping the clutch,
She blasted on out of there
Doing wheelies and such.

But Zedd heard her exclaim
As she roared out of sight --
"Work 'em all again, honey!
And keep on being the best!
Happy Yuletide to you --
And cheers to all the rest!"

-- KU5B

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come true. Neither do your
nightmares.

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like a horse is when the boss
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WA5CZN says,

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