

AN INFORMATIVE MAGAZINE
PUBLISHED MONTHLY BY AND
FOR OKLAHOMA RADIO
AMATEURS

AND ANYONE INTERESTED IN LEARNING ABOUT IT

Volume 6

JANUARY 1981

Number 72

THIS IS THE LAST ISSUE OF COLLECTOR EMITTER

(See Page 5)

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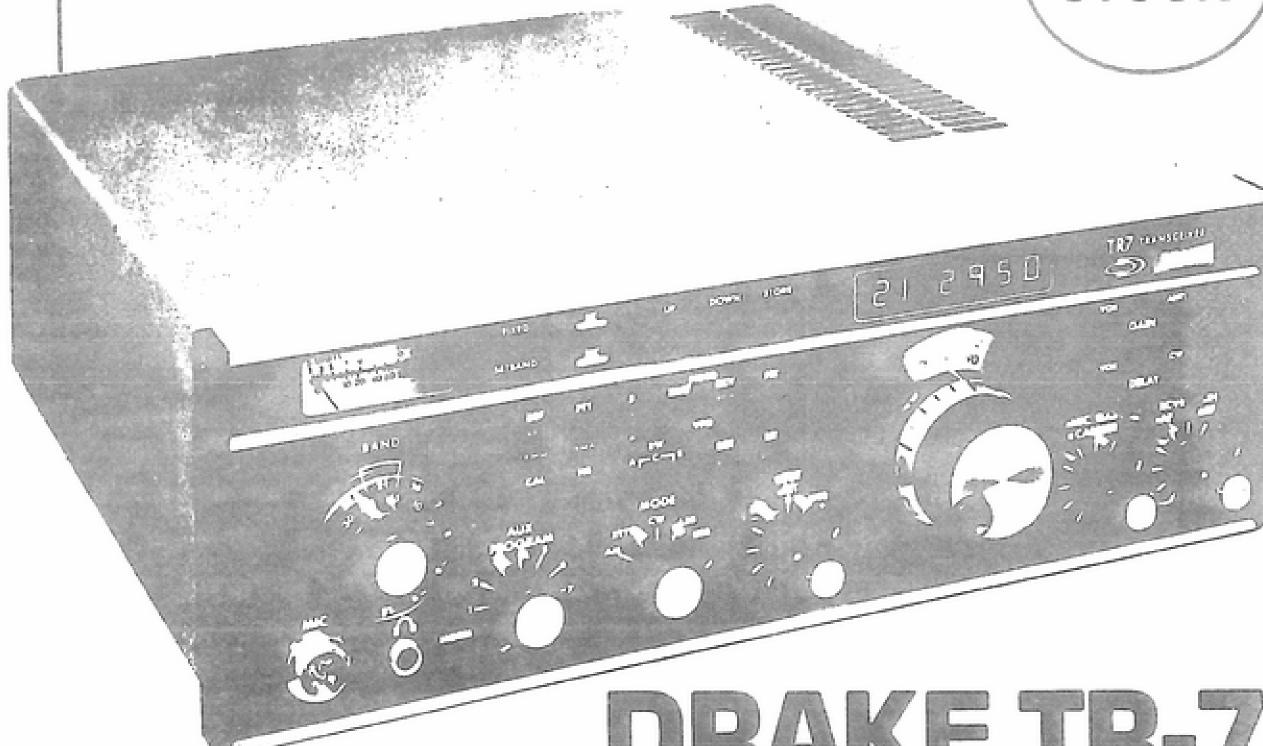


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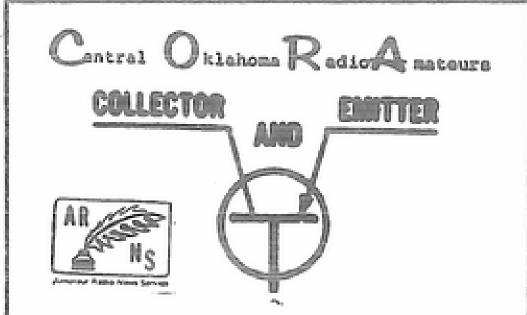




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MEETS: 7:30 PM 2nd Tuesday each month Air National Guard, Will Rogerts Apt.	MEETS: 2:30 PM First Sunday of month Location Varies. See club section	MEETS: 7:00 PM 2nd Nonday. Choctaw City Hall.			
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Ed NSOK Coy Day	Ed WB5MTH Virginia Beneda 825-3302	Ed NSARV June Allen			
11 EDMOND AMATEUR RADIO SOCIETY	12 SHAMNEE AMATEUR RADIO CLUB	13 KAY COUNTY AMATEUR RADIO CLUB			
MEETS: 2:00 PM 3rd Sunday, Room 205 Science Bldg. Central State Univ.	MEETS: 8:00 PM 2nd & 4th Tuesday Shawnee City Hall - EOC	MEETS: 7:30 PM 3rd Thursday of month Security Bank Basement, Ponca City			
Pr WD5HXK Ken Stepp VP KB5RR Clarence Dollmeyer S/T W5ERY Allen Watson Ad WD5FHR Dce Mize	Pr K5LFZ Bob Almond VP KA5FIT Walter Fultz S/T KA5FBC Jim Sullivan	Pr WB6NBK Steve Scott 765-7408 VP WB5SAG Grady Skillern 765-3411 S/T Cosby Clarke 765-3105			
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	Ed WB5TZZ Jack Bickham 329-1311	Ed MBSUIY Stan Van Nort			
17 TRI-CITY AMATEUR RADIO CLUB	18 GREAT PLAINS AMATEUR RADIO CLUB	19 SOUTHEAST OKLA AMATEUR RADIO ASSN.			
MEETS: 7:30 PM First Monday of month. Location varies, see club section.	MEETS: 7:30 PM 1st Tuesday each month Moodward Court House basement.				
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Ed KASFD Nancy Hayden 379-6448	Ed W4ZSL Wes Duer				





Editor: Ted WD5JNT 262-1675

Our annual Christmas feast is now history. Our host WA5PFK Ralph and his lovely helper Goldie did there usual perfect job in making the arrangements for the 44 members and guest that gathered in Watonga. The Country Kitchen came through, as in the past, with a fine veriety of delicious food.

After stuffing to the brim we were brought to some order by our dearly beloved President WD5JNT and quickly got down to the bussiness at hand.

Instead of sharing gifts with the other members of the club it is our tradition to pass the plate and give a cash domation to the Crippled Childrens Hospital. This year was no exception, we collected \$84.00 for our gift this year, which I believe is about \$10.00 more than last year and I am sure they will appreciate it.

New club officers are elected at our December meetings, and I was going to say this would give the officers from last year a will deserved rest. But looking down the list somehow you all managed to just reshuffle the list and add a new, unsuspecting member to the roster. For President we have Ray AB5Z from Longdale. He will continue to thank us well into the new year for this opportunity: For Vice-President we have our new member to the list Dick WD5GLD from Kingfisher. His hope is Ray will be able to make all the meetings. Ralph WA5PFK has been reelected as our Secretary and Treasure. He has done a very good job in the past and as Johnny can tell him we don't like changing banks. Editor was won by Ted WD5JNT from El Reno. Don't like to say to much about myself so we won't.

We were pleased to have Father Joe W5JEB from Okeen to show slides from the holy lands. He had a chance last summer to go and see some of the places he had studied for so many years, and it sounded like he enfoyed it.

Darla, the wife of KA5DUO Leo from Canton had a severe heart attack in the middle of November which had us all concerned. Thanks to her strong character, a few friends thinking about her, she has made a remarkable recovery and has now been sent home.

Our next meeting will be January 4, 1981 at Okache. Tune in every Wednesday evening at 8:30 on 01-61 for the Wheatstraw Amatuer Radio Club net for the exact location.

Seasons Greetings from the Wheatstraw Amatuer Radio Club to all of you that take the time to read the Collector and Emitter

WD5JNT

FOR SALE: Kenwood TS-120S w/power supply. 14 months old. Original cartons. Includes microphone, mobile mount, Hustler with 20 & 40 meter whips. Swan impedance matcher, cables. And a Hustler 18-AVQ all band vertical. First certified check or bank draft for \$900.00 takes all. Will consider selling part of package. Also 2 turntables, a BIC-920 and Audio Design, Heath tube type stereo amp. Fred Morton, WB5KRD Work phone 794-1573, home 631-6003 after 7 pm.

-4-

NEEDED: Instruction book for EICO 460 scope, DC, Wideband. Gil, W5RB, 634-4822.



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This action is required by the Post Office if we are to keep our 2nd class mail permit, without which it is doubtful we can continue publication. IT IS UP TO YOU. If this is puzzling, see the October C&E.

Fill the form out completely. Look at your address label and use that name, call address and ZIP. Circle one club with the latest expiration date and from the label enter the month and year that your dues expire. If the label is wrong check it with your club dues collector. Fill in the dollar amount that you have paid for club dues, SIGN the form and mail today. We need your cooperation.

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Edwards, Ed

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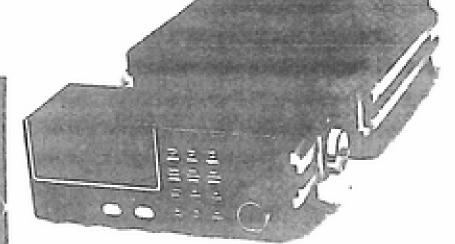
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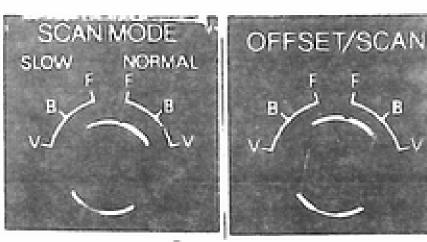
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Written & Edited for EARC entirely by STAN VAN NORT Other comments welcome---

SEASON'S GREETINGS

Since this is the January issue, the newly elected officers would like to wish everyone a HAPPY NEW YEAR. And since this issue will probably arrive before Christmas Day-we hope your family has a Merry Christmas.

Which brings us to the question, what happened to our club notes in the December publication. That is not too long of a story, but reflects badly on your secretary here. To say the least, I was extremely busy and something had to give. Some of you may have heard I finally was able to complete the purchase of a house on November 21. I began moving the next day, Saturday, which also was C & E paste-up day. Like I said, something had to be passed over. There was another problem with my wife spending a few days in the hospital over the same period of time. Everything is under control now, and we will get on with business.

MINUTES OF NOVEMBER MEETING

The meeting was called to order by Harold Plunk on November 3 at the cafeteria of the T.G.&Y. Headquarters building. In old business Martin, WD5FEI, updated everyone on the status of the multi-digit access code for the autopatch and how to operate it properly. Dennis, WB5ISN, brought up the issue of sponsoring the 147.93/33 repeater which was tabled at the last meeting. The cost and problems of operating it were discussed. At this point the meeting was severly interupted with the late arrival of Larry Dillard, WB5CWB. After a few jokes the discussion continued with the issue coming to a vote. The majority voted in favor of sponsoring the repeater and to make arrangements later in regards to leasing the equipment.

Under New Business, the Trustee, WB5ISN, advised the old repeater call of WD5AII had expired on the UHF machine. It obviously was not renewed by the FCC and therefore the UHF license has been combined with the VHF repeater license. Henceforth use WR5AWJ when making autopatch calls. Since no further business was brought up, the President called for the Nominating Committee to make a report. The members of the committee consisted of Howard Thompson, W5UVI-Chairman, Larry Marks, WB5DUC, and Deeds Bigelow, WB5ADN. Howard read the list from their decision: Stan Van Nort, WB5UIY-President, Wendell Cochran, WB5ISO-Vice-President, & Bob Shaw, WA5BQX-Sec/Treas. From the floor, Dennis Orcutt nominated Larry Grothe for Vice-President who appeared to reluctantly accept.

With the four hepefuls outside, Harold Plunk conducted a hand vote. The final count ended with the following results:

Stan Van Nort: President

Wendall Cochran: Vice-President CONGRATULATIONS TO ALL THREE Bob Shaw: Sec/Treas.

The new officers will take office at the January meeting.

At the last moment Gary McCormick, WA5ETV, brought up a motion to purchase a preamp for the 63/03 repeater. He advised Lunar Elect. has a new line of preamps which have a gain of 26db with only a 0.2db noise figure. These are GaAs FETs and Gary said it cost around \$125.00. Gary said they should be great for 63/03 and was so adamant that he offered to buy it for the club to see if it would work. If the club was pleased with the performance they could reimburse him later. Mike Salem, N5MS, noted the club shouldn't pass up a bargain like that and Jack Perry, WB5URW, immediatly seconded the motion. The following vote was unanimous.

New members were introduced and after Howard Thompson told a couple of Polock (or Aggie) jokes the meeting was adjourned. Refreshments and more jokes continued at MacDonalds on Lincoln Blvd. CONTINUED



NEXT MEETING--JANUARY 5, 1981 A BUSINESS MEETING AT 7:30 PM LISTEN TO EITHER REPEATER FOR THE RECORDED ANNOUCEMENT...AS IT MAY NOT BE HELD AT T.G.&Y.

DECEMBER DINNER MEETING SUCCESSFUL

EARC PAGE 2

Successful you say? Sure, didn't you get a neat gag-gift with bows and ribbons? The annual Chili & Stew Christmas dinner was held at Deed Bigelow's Ranchito on Monday, December 1st. There was another large turn-out and after dinner everyone exchanged gifts. Yours truly here got a new Police pistol. Made by ARCO INDUSTRIES a fantastic 4-shot PING PONG II, with four ping pong balls to boot. Bob Shaw got the perfect gift, a YOYO. Dennis Orcutt got a black string bikini which he handed over to Sandy. Mike Salem got an Executive Lunch Box which consisted of a large coffee cup in a cardboard box. Howard Thompson got a coffee cup with the inscription 'To my very best friend', inside the cup was an authentic fickle finger of fate. Dennis got from Mike a plastic carrying case for a walkie-talkie which also had a pre-cut hole for an antenna. Marge Bigelow received a 'Diamond Pin' (Aggie variety) which consisted of a real dime and safety pin. Bob Allen's wife got a pair of men's bikini briefs with a smilling rhino on the front. Some one else recieved a real nice electric dishwasher (Polock variety) which consisted of an authentic dish cloth and attached eletric cord. And Many other good gifts ...

Overall everybody had a good time and the chow was great. We would like to this time here to thank Bob & Beverly for making the chili, and to thank Deeds & Marge for the stew. And a big thanks also to the others who brought cake, cookies and other goodies. We would like to give Deeds and his family another big THANK YOU for allowing us into their house and their hospitality.

To those that missed the dinner: Larry Marks, Glenn Rawdon, Roger Ryan, Royden Freeland, Ron Bragg, Dave Harter, Maurice Woods, Ron Gron, Harold Plunk, Gary McCormick, John Bohan, Larry Dillard, (Can you believe that one?) and Jim Shideler & Dan Schroeder, (the Stillwater gang), plus several others--You all missed one heck of a good meal & fun time. Hope you can make it to the next dinner in February or at least at the next annual Chili Dinner next December.

NEW MEMBERS

I'm not positive the <u>last</u> two names have been recognized in this column of the C.&E., therefore we will list everyone since Sept.

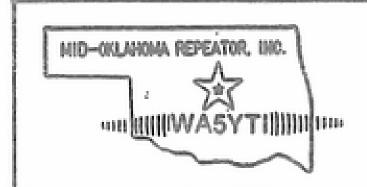
Larry Hazelwood W5NZS
Rod Harrison WB5DSH
Richard A. Wood K5QNN
Robert Allen WD5EVP

C. & E. YELLOW CARDS

Within the last two issues of this publication & probably the next, there will be enclosed a yellow 5%7 card adressed to the CORA organization. On the back are listed 20 clubs and spaces for your name & address. Be certain you have sent a card with club # 10, Edmond ARC, circled and signed. This will allow you to keep receiving the C.&E. on a regular basis. It is now required by the Post Office. Where it asks for dues, just write in \$25.00 under item (2). Your subscription is paid and maintained by the club secretary.

ATTENTION KENWOOD TR2400 OWNERS

If you should experience a problem with the LCD display not showing the frequency (completely blank) and the keyboard will not clear or do anything, don't despair. Before you send it back to the factory, simply turn off the power and back-up off switch. Then unplug the battery for approximatly one minute. Re-plug the battery, then first turn on the main switch, then take it out of B.U. Off position. This should clear it up. I speak from experience. STAN***



We were very pleased to see everyone who attended the 1980 "MORI" Christmas party held at Dotson's cafeteria on Wednesday, December 3, 1980 and sure wish the others could have been there too. A total of 58 members, guests, friends etc. were present to join in on the good cheer, fun, etc.

The party began by going through the food line and each one could select what he or she wanted. There was plenty of good food, fun, prizes, surprises, fellowship etc. There were 14 of us who partipated in the "white elephant" exchange. I never was so surprised to see the many unusual gifts. (Have you ever seen a "Polish" bowling ball??? --- ask Sid to show you his - HI!) Also there were many door prizes given away (from Kryder's Electronics)

In the "SWAPS" the following received:

Sid - W5KOZ Polish bowling ball Tiny - W5NBH Polish "CB" radio Fred - KA5CXW Burglar alarm

and many many more "unusual" gifts

The highlight or the program was by Fred, KA5CXW (our President) who led us into a few favorite Christmas Carols, from Jingle Bells to the last one "Silent Night".

Thanks go Bob, WB5PWZ (who was our Vice President for 1980) who made the arrangements for the location and other accomodations.

Also, I would like to extend a very special thanks to the MORI officers for 1980 who served the club. KA5CXW - Fred, President, WB5PWZ-Bob, Vice President, N5BEQ - Jim, Secretary and K5PER - Jim, Treasurer. I think each one did an outstanding job. Welcome to the new officers for theyear 1981, KA5CXW - Fred, President (who was relected for the second time) W5PDH - Frank, Vice President, KA5FED - Susie, Secretary and W5KOZ - Sid, Treasurer and Membership Secretary. Congradulations to all and Good Luck.

ANNOUNCEMENTS

We wouldlike to say "Welcome Back" to a former member, who re-joined us in MORI, his name is Horace Marrinan - W5AYO.

We will also be seeing a new "harmonic" arriving in approximately three more months for the "LOVES" - Jerry, N5ABF and Lesta, N5AWI.

Also, the very best of good wishes to two of our members who have been in the hospital for surgery, but reports are as follows:

W5MCJ - Jerry, is home after quite an extensive stay, and Myrtie (his XYL) said that he is doing pretty good now and has a craving for some popcorn - HI!

The other one is WB5TDW - Joe, who ispresently in Veterans Hospital (2E - 239) recovering from surgery, but is due to be released soon.

The very best to you two and if failed to mention anyone, I am very sorry or I didn't know about it, but I hope everyone has the very best of good health in the coming years.

Hope that each and everyone of you have a Very Merry Christmas and a Happy (prosperous) New Year..... Susie KA5FED (1981 MORI Secretary)

MID-OKLAHOMA REPEATOR, INC.

The officers and technical staff of MORI wish to relay to one and all the best of "Seasons Greetings". May our club assist Amateur radio to grow and prosper in our metropolitan area and beyond.

more more more than the staff of the staff all volunteers will be dedicated to continuing excellence of club activities

The clubs fine efforts at Scout-O-Rama were praised by scouting officals of The Last Frontier Council. We honor the net controls, Bob - WB5PWZ, Ben - WB5TFX, Sid - WA5TAR. Ben worked both Saturday sessions with WB5TFY - Pat (his XYL) and WD5CGN - Jeff, and N5BEQ - Jim assisting. Lee - KA5JZQ worked all of the three sessions as well as WA5TAR Sid. Sid had to leave for a short time to fight a small electrical fire at his home, but soon was back withous. The following net members assisted: KA5GSB - John and his son KA5IXW, WB5PWZ - Bob, N5AZO John and his son (two sessions) and N5PS - Pat. W5DDI - George and KA5FED - Susie helped to set up and coordinated. We were pleased to see WB5TZQ - Bill Warren from Shawnee, who was in the Shawnee section and several others who came by for a visit with our net controls. I would like to say "thanks" again for a very fantastic public service project.

I'm pleased to announce that WA5HTL - Paul has agreed to assist us in providing programs for thecoming year. I always enjoy Paul's good choices of programs. Our January program bounces off with a month of training for those interested in Public Service. Paul tells us that Jack Muse, Disaster Director of this region for the American Red Cross will present "Fire". This will be a great program. Y-all come and enjoythe program and fellowship,

Merry Christmas and Happy New Year!

Fred - KA5CXW

Short Shorts.....

Why can't we get that big rig??? "The easiest way to figure the cost of living is to take your income and add ten percent".....

For those working on their CW speed: "Practice does not make perfect; perfect practice makes perfect.....

A foot is a device for finding furniture in the dark

Heard on the repeator: Anything scarceis valuable; praise for instance.

We are starting a public service honor roll in coming MORI articles. We will have the format, for use in reporting net activities, individual assists and actions heard on the repeater or HF and the ARRL suggested activity reports. We will have this at the next meeting in printed form.

FRED KA5CXW

N. V. Watts



OKLAHOMA DIVISION

AMERICAN AUTOMOBILE ASSOCIATION 3525 N. W. 23rd ST., OKLAHOMA CITY, OK 73107 Ext. 215, 405 946-5411 405 946-5418 AFTER 5:00 P.M.

EDMOND AMATEUR merry christmas RADIO SOCIETY 147.72/147.12

Here we go with the next to the last round fellas; so first let me exercise my editor's prerogative to use space to convey his "warmest personal regards and wishes for a Joyous Christmas and a Happy and Prosperous New Year". I'll save my swan song for next month.

Now --- on with the dirt -- first a new member:

JERRY DREWERY

KA5FQH

Don't have anything else on him so you will have to come out to the next meeting and meet him.

Other new member via our family membership policy is:

PENNY BROWN

KA5KIY

OK-- here we go with the answers to last month's quiz.

Answers to Antenna Quiz

- 1. A. A 1-to-1 balun is not a matching device.
 - B. It could stop TVI, but it could also make TVI worse.
 - C. It might, but if the feed line is a resonant length it could still reradiate energy, regardless of the balun.
 - D. Correct.
 - E. This is always correct, what else!
- 2. A. The standing-wave ratio on a transmission line has no relationship to TVI, with coax or balanced line. In coax, current flows on the inside of the outer conductor and on the outside of the inner conductor, hence no radiation. In a balanced line the field of one conductor cancels the field of the other, and no radiation results here either, so no TVI from the line.
 - B. Same as A
 - C. This and E are both correct answers, but with SWR values below 2 or 2.5 to 1 and a line length shorter than a few wavelengths, additional losses resulting from line mismatch are usually negligible.
 - D. Nope, the gain of the antenna is a fixed value. A low SWR doesn't increase the gain.
 - E. Most correct.
- 3. A. It may help.
 - B. It would help, 4 dB power increase.
 - C. This also helps, less line loss.
 - D. This is the correct answer. In the direction of the beam, the effective power will be the same as if you were running 280 watts.
 - E. Are you kidding?
- A. Correct answer, 3 dB gain over a dipole.
 - B. 1.8 dB gain over a dipole.
 - C. Slightly lower gain than the quad loop
 - D. 2.14 dB gain over an isotropic radiator.
 - E. Same as D.
- 5. A. Could have some effect.
 - B. Ditto.
 - C. Also could have some effect.
 - D. Nope.
 - E. Most correct. The ground is the primary controlling factor in dealing with angles of radiation from horizontal antennas.
- 6. A. Nope. Actually the SWR is 5.83 to 1.
 - B. No, you don't have 80 watts going to the antenna.
 - C. Correct, 40 watts going to the antenna. And as a matter of fact, if we disregard line losses, you have 40 watts output from the rig . . . not 80. Your meter is not reading real watts, only apparent power.
 - D. It may or may not be, depending on the design of the amplifier.
 - E. No way!
- 7. A. Not this one. SWR values are expressed as a ratio. Zero is not a ratio.
 - B. Nope Although the reactance does not accept power, it does prevent some of the power from being transferred to the resistance, creating a mismatch.
 - C. This one is wrong too. Although the total impedance of the antenna is 70.7 ohms, there is no simple SWR relationship between line impedance and a complex load impedance.
 - D. Wrong
 - E. This is correct. If you wish to verify this, the formula below applies:

SWR =
$$\frac{A}{A} - \frac{+}{B} \cdot \frac{B}{B}$$

where $A = \sqrt{(R + 70)^2 + X^2}$

$$B = \sqrt{(R - Zo)^4 + X}$$

R and X being the load resistance and reactance, and Zo being the characteristic impedance of the line.



Howard Wise, WD5IDB, needs to get a look at the manual, or a look inside of a Wilson SM1402 HT. His antenna leads are broken off. the PC board and he can't locate the connection. Anyone with a manual or a set which he can inspect, please call Howard at 341-2510.

- 8. A. Could be correct. The SWR is determined solely by the impedance of the antenna and the impedance of the line. For example, if the antenna is 100 ohms pure resistance and the line impedance is 50 ohms, the SWR is 2 to 1. Disregarding line losses, it is 2 to I anywhere in the line. A meter showing a changing reading at different positions in the line is either inferior or defective, or else currents are flowing on the outside of the coax.
 - B. Most correct because putting the instrument at the antenna climinates any indication errors which may result from line losses.
 - C. Not necessarily.
 - D. Not necessarily.
 - E. Not necessarily. This popular misconception exists probably because an impedance repeats itself every half wavelength along a line, disregarding line losses. Although the impedance seen from this point in the line when looking toward the antenna will be essentially the same as that of the antenna alone, this doesn't mean the instrument must be placed here. A directional-coupler type of indicator does not operate on impedance values, but on voltages and currents which are flowing along the line:
- 9. A. Correct. With a "perfect" radial system, the feed-point impedance of the antenna will be about 36 ohms, and the SWR with 50-ohm line would be 1.39 to 1. Earth losses with a radial system that is less than perfect will effectively add to this resistance, raising the feed impedance. When the SWR was 1:1, the equivalent earth losses were 14 ohms (36 + 14 = 50), and the efficiency was 72% Now the efficiency is closer to 94%, since the feed-point impedance is near 38.5 ohms.
 - B. What, after all that work?
 - C. No. The SWR in a transmission line is not a true indication of the efficiency of the antenna system.
 - D. No. Getting the SWR down may reduce the losses in the feed line, but it won't after the efficiency of the antenna itself by one bit. In this case, the losses with an SWR of 1.3 to 1 will be only 1.03 times the losses if the line were perfectly matched.
 - E. You could try it, but you'd be wasting your time.
- 10.A. Nope, this would give you a bidirectional broad-side pattern, north and south.
 - B. Nope. A nonsymmetrical pattern would result, but the power radiated to the east would be the same as that to the west, and the front-to-back ratio would be unity.
 - C. No. Same reason as B.
 - D. Sorry, this would give you a bidirectional end-fire pattern, east and west.
 - F.. Correct. The spacing would have to be 3/8 wavelength or less before a null could be developed in the westerly direction. The optimum phase angle would depend on the exact spacing, ranging from 45° at 3/8-wave spacing to more than 135° at less than 1/8-wave spacing At any spacing in this range, the eastern-most element should be the one of lagging phase.

Well, how did you do? I must admit that I was one who didn't do too well so don't feel too bad; you have company.

The December siren test was cancelled at the last minute because the sky looked rather threatening and the sirens might have caused undue concern. One of the participants on stand-by at that moment was a non-member who became aware of our need for assistance with the tests -- John Rohan, K2SDV, formerly of Malverne, N.Y. and now of Edmond. Thanks, John. Delighted to have you and hope you can come out to a meeting.

Also standing by for the siren test was Connie Boland, KA5ERZ, a new TECH who got roped into it by her husband Bill, KA5ESA. Bill had originally volunteered his help but couldn't make it so Connie graciously stepped in. And a great big THANKS to you Connie.

For some of you this may be your last issue of C & E for awhile -- unless you have sent in your YELLOW CARD to "ZNF" at CORA. If Joe doesn't have your card to support his subscription audit by the Postal Service, you will be dropped from the mailing list January 1. Contact Ken Stepp, WD5HXK if you need help on this item.

Also in connection with C & E, check your mailing label -- IS IT CORRECT?? -if not advise Ken Stepp so that corrective action can be taken. By the way, the label also contains a clue as to when your dues are payable.

By the time you read this, our president will have already appointed a nominating committee in preparation for our annual meeting on Sunday, January 18, 1981. Be there! To protect your own interests if for no other reason.

Service-Service-Service: Seems there are no end of opportunities for Hams to serve the community. This time it was a cut phone cable near AmCare headquarters which cut off contact between AmCare and the various hospital emergency rooms. AmCare medic, Art Roberts, W1GOM, used the 72/12 machine on several occasions to get messages through; and EARS members were on duty at Edmond Hospital to maintain communications until the phone cable was repaired. Nice work fellas.

73 SK EARS DE KBSRR CL



EDITOR: Joe Buswell, K5JB 732-0676

CLUB MEETING

THIS MONTH'S MEETING WILL BE A CHRISTMAS SOCIAL WITH MEMBERS BRING-ING GIFTS FOR DISTRIBUTION TO NEEDY CHILDREN. THE OFFICERS AND MEM-BERS OF THE VHF CLUB WISH TO EXTEND TO ALL THE BEST OF WISHES FOR A HAPPY CHRISTMAS AND A FIVE BY NINE NEW YEAR. JOE, K5JB

VHF ENGINEERING CW ID MODIFICATION

HERE IS MY CHRISTMAS PRESENT TO ALL YOU BOYS AND GIRLS OUT THERE WHO BUILD OR MAINTAIN FM REPEATERS, OR OTHERWISE HAVE A USE FOR THE VHF ENGINEERING ID BOARD. IF YOU HAVE ONE YOU PROBABLY NOTICED THAT IT PERFORMS OK WHILE THE REPEATER IS BEING USED BUT IT DOESN'T "GET IN THE LAST WORD". THE WAY IT WAS DESIGNED, IT WILL ID AT SET INTER-VALS ONLY IF THE COR IS PULLED IN WHEN IT COMES TIME FOR AN ID. AFTER AN EXCHANGE ON THE REPEATER IS CONCLUDED, THE ID'ER DOESN'T CLOSE OUT THE OPERATION WITH AN ID AFTER THE LAST TIME INTERVAL. AFTER A LITTLE CHOPPING AND ADDITION OF A FEW PARTS, THE BOARD CAN BE MADE TO WRAP UP REPEATER USE WITH AN ID.

FIGURE 1 IS A CLUTTERED PARTIAL SCHEMATIC OF THE CIRCUIT AFTER MODIFICATION. D1, R1, AND U1 ARE ORIGINAL PARTS. THE REST ARE ADDED
BY TACKING THE LEADS TO THE FOIL TRACES AND EXISTING COMPONENT LEADS.
THE MODIFICATION CREATES A R-S. FLIP-FLOP THAT REMEMBERS THAT THE
REPEATER HAS BEEN USED AND THEN FORGETS AFTER THE LAST ID IS FINISHED.
IT IS NECESSARY TO MOVE A NOR GATE TO THE OUTPUT OF THE R-S FLIP-FLOP
AND REPLACE ITS FUNCTION WITH AN INVERTER FORMED BY TRANSISTOR QI.
TO CORRECT THE POLARITY OF THE SIGNAL TO U4 AND U8, THE COUNTER CHIPS,
IT IS NECESSARY TO ADD A SECOND INVERTER, Q2. THE INTERFACE SIGNALS
ARE UNCHANGED BY THIS MODIFICATION.

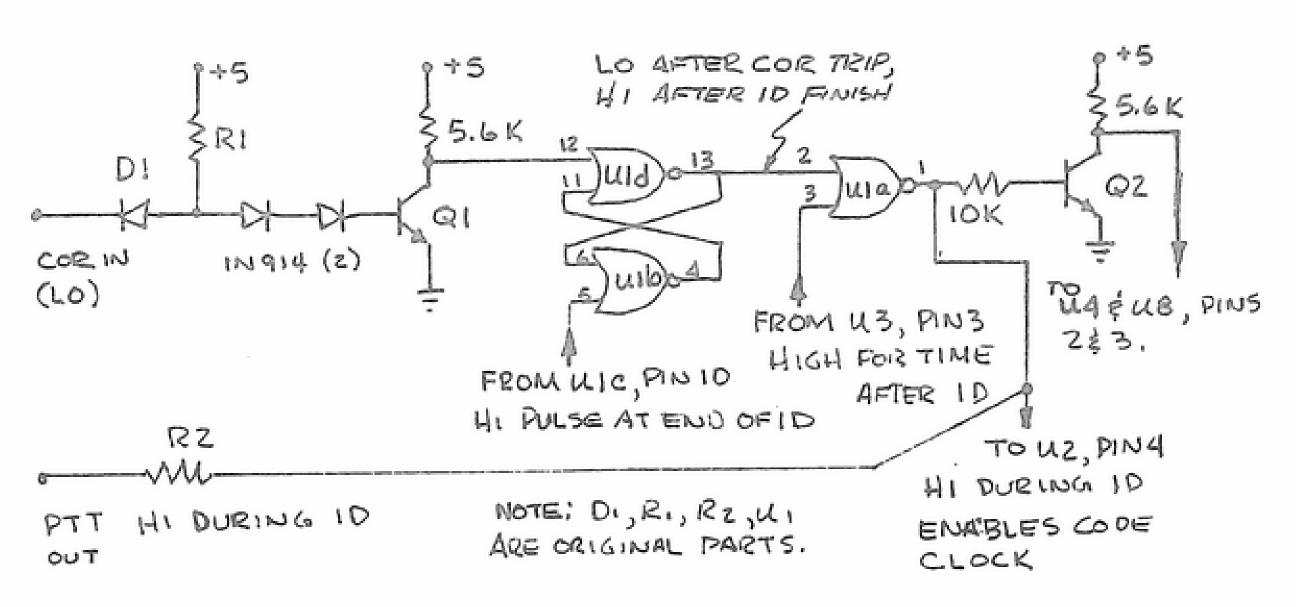


FIGURE 1. PARTIAL SCHEMATIC OF MODIFIED ID'ER.

REFER TO FIGURE TWO, NEXT PAGE, FOR COMPONENT LAYOUT OF THE ORIGIN-AL BOARD AND LOCATION OF PARTS TO BE REMOVED IN THE STEPS THAT FOLLOW.

- 1. REMOVE UL. USE SOLDER WICK THEN SOLDER SUCKER. THIS CHIP, A 7402 IS CHEAP. IT MAY BE BETTER TO CLIP LEADS AND REMOVE INDIVIDUALLY THAN RISK DAMAGE TO FOIL AND PLATED THROUGH HOLES.
- 2. REMOVE D1 AND R2. CORA Collector & Emitter

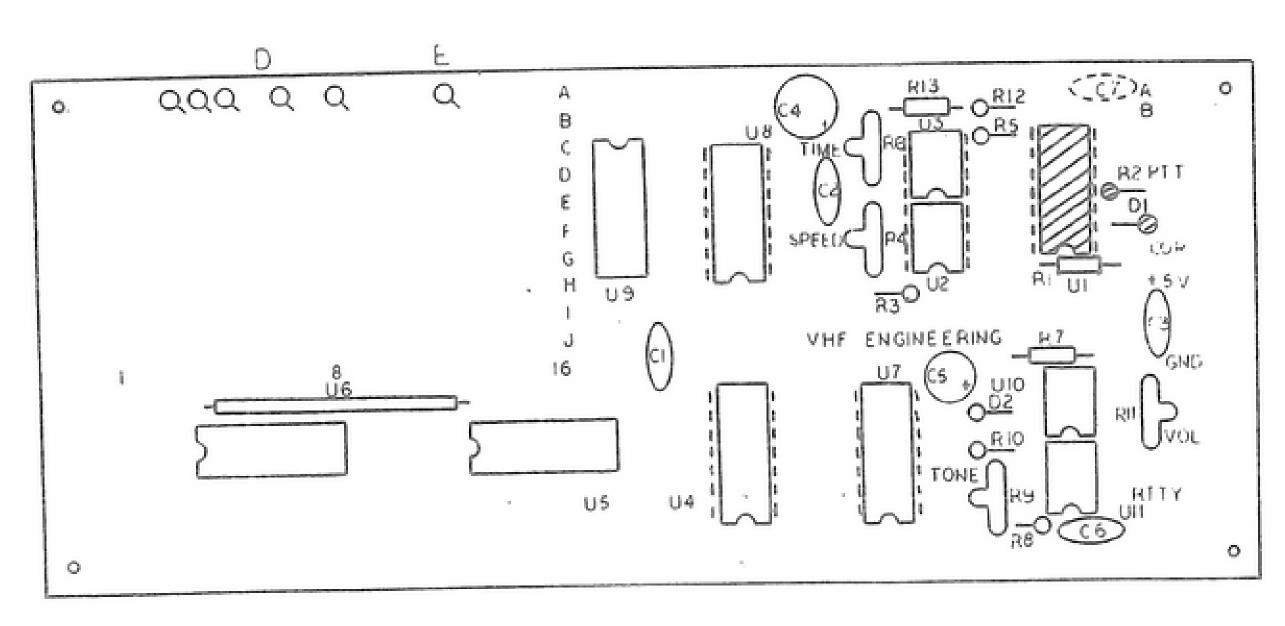


FIGURE 2. PARTS LAYOUT. REMOVE SHADED PARTS.

3. CUT TRACE FROM PIN 1 TO PIN 12, U1 SEE FIGURE 3.

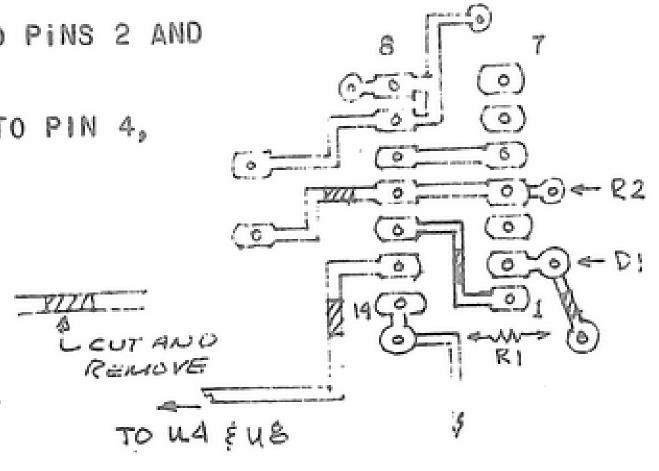
4. CUT TRACE FROM DI AND PIN 2, UI TO RI.

5. CUT TRACE FROM PIN 13, U1 TO PINS 2 AND 3 OF U4 AND U8.

6. CUT TRACE FROM PIN 11, U1 TO PIN 4, U2. REPLACE U1.

7. ON BACK SIDE OF BOARD, RUN JUMPER FROM PIN 2 TO PIN 13, U1, AND RUN JUMPER FROM PIN 4, U2 TO PIN 1, U1.

8. ON COMPONENT SIDE OF BOARD, TACK COLLECTOR OF NPN TRANSISTOR TO TRACE GO-ING TO PINS 2 & 3 OF U4 & U8. INSTALL 5.6K RESISTOR FROM THIS TRACE TO PLUS 5V, PIN 14, U1. TACK EMITTER TO GROUND, PIN 10 OF U4 OR U8. CONNECT BASE TO PIN 4, U2, THROUGH A 10K RESISTOR.



EDGE OF BRAISIC

THIS TRACE TO PLUS 5V, PIN FIGURE 3 LOCATION OF CUT FOIL.

14, UL. TACK EMITTER TO TRACES AT U.I - COMPONENT SIDE

GROUND, PIN 10 OF U4 OR U8.

VIEW. FOUR CUTS SHOWN

- 9. REINSTALL DI, CATHODE FROM WHERE IT WAS REMOVED, ANODE TO NEAR END OF RI.
- LØ. INSTALL A 1914 DIODE, ANODE TO JUNCTION OF DI & RI. LEAVE OTHER END LOOSE. PLACE THE DIODE ALONGSIDE RI.
- LI. TACK SOLDER COLLECTOR OF NPN TRANSISTOR TO PIN 12, UL, CONNECT EMITTER TO GROUND FOIL, EDGE OF BOARD, AND CONNECT CATHODE OF A 1N914 DIODE TO BASE. CONNECT ANODE OF THIS DIODE TO CATHODE OF DIODE LEFT HANGING IN STEP 10.
- 12. SOLDER 5.5K RESISTOR BETWEEN PIN 12, UL AND PLUS 5V, PIN 14, UL.
- 13. INSTALL R2 WITH ONE END IN ITS ORIGINAL HOLE NEXT TO PTT TERMIN-AL. SOLDER OTHER END TO PIN 1, UL.

CONVERSION IS NOW COMPLETE. ALL INPUT AND OUTPUT SIGNALS RETAIN ORIGINAL POLARITY. RECHECK THE STEPS, CORRECT THE MISTEAKS AND PLUG IT BACK INTO THE REPEATER. MERRY CHRISTMAS. JOE, K5JB



THE AMERICAN RADIO RELAY LEAGUE, INC.

OFFICE OF THE SECTION COMMUNICATIONS MANAGER

OFFICIAL CORNAI

LEONARD HOLLAR WASFSN

The Oklahoma Area Net is DEAD. It passed away Nov. 30th. from a lack of Interest, Participation or Whatever. In any case, participation had dwindled to nearly nothing with very few Novices checking in. Therefore, it was decided to discontinue operations. However, at a later time if sufficient interest and leadership is generated, It can be revived.

The Oklahoma Traffic and Weather Net averages, receiving reports from 10 communities each day. This could easily be doubled and help a lot. For You Amateurs outside the Oklahoma City area that do not have Recording equipment. Why not locate your Local Cooperative Observer for N.W.S. A little talking should make it easy to get his daily reports and forward them in. The N.W.S. puts our info out on the TWX about 7:00 P.M. However, unless it it unusual, the Media seldom pick it up and then rarely if ever give us credit. By the same token, Stations in Greater Oklahoma City area can help by making themselves available to help as Net Controls and/or Loggers.

The discussion at the last C.O.R.A. meeting regarding Public Service Activities and 'Gray Areas'. was quite interesting and informative. Particularly, when each and every one of us can take the same set of Rules and Regulations and interpret them differently. Dependent on our point of view and prejudices toward a specific type of operation or served organization. So much so that it is really hard to deliver a pure unbiased opinion.

November Net Activities

Net O.P.E.N.	Sessions 5	QNI 31.3	QTC 13	WX
O.F.O.N.	19	325	85	
S.T.N.	26	464	111	249
O.T.W.N. O.A.N.	25 21	394 89	263 15	445
O.L.Z.	30	200	77	
O .N .O .N .	30 5	428	64	
Q.C.W.A $N.W.O.S.N.$	12	176 140	19	
Newsons News) //	N M	
Have a Happy	New Year.		fallar	
	Len	way /	, e -	



76ers PROGRAM FOR JANUARY 13, 1981 - Tune up clinic for two meter rigs. Bill, KB5BS will bring out the necessary instruments to measure: sensitivity, deviation, power output, spectrum and frequency. Bring your transceiver, and if possible a dummy load and quick-disconnect PL-259 connectors. This clinic will be for 76ers Members only.

If you wish to attempt any adjustments, bring your schematic and the necessary tools. If you do not want to make any measurements with your equipment, come anyway, this should be an interesting and educational session.

Program idea for the near future: Communication with ASCII using computers. + + + program chairman, Bill, WA5RAQ - - -

HOLIDAY HIJINKS-JB GETS DRAFTED

One good thing I found out last year during Thanksgiving is that Joe K5JB can be bribed. He can be shamelessly bought for the simple price of a Thanksgiving meal. Actually, I invited Joe to join me and my family last year for Thanksgiving and he volunteered to help me on a few projects for my father. From September on, my parents constantly complain that I don't love them. True, I communicate by telephone a couple of times a week, I just don't make my physical presence at the old homestead because of various intervening activities such as OU Football, hamfests of various variety, OU Football, sidewalk sales in Dallas, and last but not least, OU Football. Oh, yeah. I forgot that toward the end of November, OU Basketball begins to capture an occasional Wednesday and Saturday evening.

So, anyway, my Dad is always coming up with something new for the house. This includes stringing telephone wire in the new house, designing and installing a complete MATV system for each room, installing a commercial two-way UHF system and licensing the same. Some of these things start out with, "How do we do . . ?" Others are suggested by well meaning neighbors and relatives completely unaware of the magnitude of labor (by yours truly) involved in developing a lighting system connected to the telephone line that jiggles in time to the music played through the house intercom and so and so on. Anyway, all these projects pile up during the time that I occasionally devote my weekends to OU Football, etc. Oh, I might get home once or twice on an open date (usually to take advantage of my uncle's generousity to borrow his tickets to see OSU play football), but usually by Thanksgiving, everything is about to pop on all of my Pop's projects. I generally must plan this trip for a week to be sure that I have gathered all the necessary tools and parts for the weekend.

Into this unsuspecting trap last year walked K5JB. Heh, Heh. Joe accepted my invitation for Thanksgiving unknowing about the myriad of projects that awaited him. He took to the problems like a duck on a June Bug. Man, there isn't much that boy won't tackle on a full stomach. We polished off a lot of work last year. Joe's memory must be very short because he fell for the same trap this year. This time, we rewired the burglar alarm and made a good start on a light beam annuniciator for the front gate. Good Show. Actually, the ratio of work to goofing off and eating was not really that bad. If there was anything that Joe and I did, it was goof off and eat. In fact, for the first time, I may have proved to myself that my previously impervious stomach may have suffered a slight setback in its overeating abilities. Must be because I'm over 30. Ugh. Didn't stop JB though. He made the weekend with flying colors and probably would like to have stayed for dinner on Friday even though I needed to get back to go to a (you guessed it) Basketball game and Football game the next day. Anyway, thanks JB and you can come to my house any Thanksgiving (or Christmas for that matter).

Micheal Salem N5MS

THAT'S INCREDIBLE - N5MS HF DEPARTMENT

I'm afraid that I have blown my cover. I used to be a latent HF operator. Now, after having been flushed out by K5JB's Colorado escapades, I am now operating on SSB on 40 meters and must withstand the accusations of WB5TZZ that I am now smuggling roller inductors in the back of my car. I plead guilty. My trusty, rusty, Swan 350 is alive and well and wintering in Norman. Regular schedules with WB5YWO, WAØNEV and K5JB on Sundays along with an occasional pickup QSO on Saturday with WA5ZAI and a soon to be added schedule with WB5TBB is keeping the dust off of the inductors. Dare I dream of another rig? I don't think so right now, but am leaning toward the Icom 720 in six months or so, maybe.

Micheal Salem N5MS

BACK AFTER THIS COMMERCIAL WORD . . . DEPARTMENT

Joe WA5ZNF told us to keep it short this month because of the Christmas issue, so I think that I better get in these two want ads before I run off the edge of the page.

MUST SELL FOR SCHOOL EXPENSES! Mint Drake Twins. Great for Mars operation. Will cover all new WARC Frequencies Now! Like New-Low Hour. Must be seen to be believed. First Class tube rig. R-4B, T-4XB, MS-4 Speaker, AC-4 Power Supply, TV-5200 Low Pass Filter, SWR Bridge, Turner 454C Microphone. How can you pass this one up? Get that Big Signal (catchy phrase?) on now. Call WB5ISB, Pete (405) 377-6694. or write 109 S. West, No. 4, Stillwater, Oklahoma 74074. \$750.00 or make offer. A Mind is a Terrible Thing to Waste. . . . Support your local college student.

HAM SHACK FOR RENT. . . along with a 3 bedroom house and 2 living areas. Nathan KB5BF is doing a little temporary duty for a year or so in Massachusetts and has his tri-level house, unfurnished, 2 1/2 baths, 3 bedroom and 2 living areas and best of all, a 70 foot tower with a triband beam for 10, 15, and 20 meters with 40 meter extensions. This is a very nice neighborhood and very scenic. The house has a patio and balcony so you can walk outside and watch the ends of the beam melt down when the Dentron MLA 2500 goes off resonance. Rent is about \$475/month with a \$250 deposit. Use of the beam and tower is optional, but included if you are so inclined. Call Robert or Karen Stone at 329-5526 after six p.m. Hey, Nate. If yuh don't rent it soon, can I go over and hook up the rig once in a while, huh, huh, huh??

VIDEODISCS-INFINITE STORAGE

In-home read-only video is becoming a reality with the coming of the video disc system. I notice that Pioneer now has a new laser system with all kinds of bells and whistles including stereo sound and remote control. An item in Electronic Engineering Times just indicated that Radio Shack is going to market a video disc system based up the RCA capacitative technology. Price is expected to be under \$500.00.

I had one of the Magnavox laser video disc systems for about six months last year and was duly impressed. The picture quality was a good as your TV could make it and I routed the stereo sound through my stereo system. The system had fast forward and backward and a touch of the button could bring up an index that numbered every frame. Imagine the use of a system like this for the printed page. You could store all of Shakespeare on a single disc. And in color, if needed.

Micheal Salem N5MS

THE WATCHERS VERSUS THE WATCHED--AT ODDS AGAIN

The local MDS distributor is at it again. This time they have managed to grab a couple of headlines in the Oklahoman to the effect that those people who have "bootleg" antennas will be summarily hunted down and prosecuted. For what? Not a violation of Section 605, but of the wire interception statutes. The statutes appear to be conspicuous by their absence in the story. Several local amateurs have been concerned about this ruckus drawing attention to anyone who might happen to have a dish on the house. Space limitations prohibit dealing with this latest outburst at this time, but deal with it we will in following issues of C & E. In the meantime, keep a stiff upper lip.

Micheal Salem N5MS

NEW HI-OCTANE SUPER RADIO ON DRAWING BOARD--DETAILS IN NEXT COLLECTOR AND EMITTER

Have I got a radio for you. There will be a complete description next month complete with pictures in your friendly Collector and Emitter. (Pictures are by Backyard Racing Association, Brad Hackler, proprietor and the half-tones were shot by our own WB5YWO). This radio looks like an ordinary Motorola HT-220 Slimline, but has a battery capacity that is unbelievable. It will keep you going under the most incredible conditions. It was developed under the most stringent of requirements and conditions and features an operating range that is the widest of any modern handie talkie. Space limitations prohibit further discussion this issue, but watch your mailbox next month for our cover story, a radio story in the spirit of the season.

Micheal Salem N5MS

IC-2AT FEEDBACK--NETWORK BATTLE --PART 3

Lots of nice comments on the article by Larry Waggoner last month on converting the IC-2AT to cover MARS frequencies. Don't know of anybody who attempted the conversion that has mentioned it to me, but there was a lot of interest. Oh, by the way, for the purists in the audience (especially K5JB). I neglected to mention that my battery capacities should have been in milliamp-hour units instead of just milliamps. This is one time I got caught with my amps down. Ditto, through all the calculations. About the diode in series with the LED in the BP3 Battery pack, WA5JXX reminded me that the reverse voltage of the LED is probably on the order of a couple of volts or so, so that the diode protects the LED. I have had no really good explanation for the capacitor yet, except that it might provide a little extra charging current because of its low reactance to 60 hertz. A brief talk with WB5ADN(who just recently acquired the very rare stand-up charger and the even more rare BP-5 Battery Pack which features 450 milliamp-hour capacity and high voltage output for over 3 watt output) confirms that the holes in the bottom of the radio battery compartment are not used for charging tabs (chargins is done through the two screws on either side of the compartment), but rather activate microswitches in the bottom of the charger when placed in the standup charger to insure that the proper charge is applied to the proper battery.

I just got a BP2 Battery pack from WB5DUC (I shamed him into it, shamelessly) and find that it is just slightly larger than the BP3 pack and smaller than the BP4 Battery pack (which will hold six alkaline cells of the nonrechargable variety or as in my case, six brand new GE nicad cells for 450 mah capacity). Don't really need the BP3, but I suppose that it might work in a pinch if I really need to squeeze the radio down. Deeds reports that the high voltage 450 battery pack really balances the radio size wize.

I made the mistake of carrying the IC2AT on the same side of my belt as my 450 Mhz HT-220 Universal and let the knurled knob eat up the side of the Icom. Fortunately, the damage is not too serious, but it is serious enough. The best I could do was sand off the crevices and polish the plastic with some rubbing compound. I don't recommend this since the radio has a crackle type finish that is difficult to prevent from coming off. I suppose that Icom will also do a land office business in selling new case parts. Anyway, it doesn't look that bad, but it did rub off part of the crackle finish. It hurt.

Micheal Salem N5MS

Central Oklahoma Radio Amateurs

The Central Oklahoma Radio Amateurs Board of Directors met for its regular monthly business meeting on Tuesday, November 25, 1980.

At the October meeting C.O.R.A. had been approached to provide radio communication at Health Fair '81. Health Fair '81 is presented by the National Health Screening Council, a non-profit organization. Their representative, Ms. Kay Brezezinski was present this month to provide information and answer questions regarding their request. Pending additional information to be prested C.O.R.A. should make its decision at the January meeting.

IN CONJUNCTION WITH HAM HOLIDAY '81, C.O.R.A. will host the 1981 A.R.R.L. WEST GULF DIVISION CONVENTION July 24, 25, and 26. The location will be announced at a

later date. Watch your C & E for details.

Once again, the convention committees are hard at work to make the 1981 festivities better than ever before. If you have any suggestions regarding any area of the activities, please contact one of your C.O.R.A. representatives or any of the officers listed in the front of this C & E. ALL IDEAS ARE WELCOMED!

PLEASE NOTE: THERE WILL BE NO DECEMBER C.O.R.A. MEETING.

Ly Berteut, NOSOV3

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COMMUNICATION EMERGENCY IN THE OKLAHOMA CITY AREA AMBULANCE SYSTEM, AMCARE

Telephone cables to AMCARE headquarters were damaged at about 5:00 P.M., November 26, 1980. This disabled telephone and radio communication in and out of the AMCARE office. Radio communication was affected because the phone lines are used for radio links and repeater control. Mike McElroy, WA5PDH, is the Communications Supervisor for AMCARE. Mike has his handheld 2 meter rig and HW-202 handy while he works, so he called Charlie Greene, WA5JGU. Charlie established an Emergency AMCARE net on the 34/94 repeater, and began recruiting area amateurs to help in this emergency. Coordinating with Mike, he assigned amateurs to be stationed at hospitals and other locations involved in the AMCARE communication system. The assignment and standby lists are at the end of this article. Charlie served as net control until about 11:00 P.M. at which time Donald Duck, AE5N was net control until 12:52A.M. when the net was closed. However, the AMCARE emergency continued until 2:00 A.M.

Mike wants to pay special tribute to five AMCARE employees: Randy Brown, Supervisor, Reggie Woods, Supervisor and the following Communications Technicians: Buddy Ogburn, Tony Hays and Ron Stinson. These five men are to be commended for the fine way in which they did their jobs and cooperated with the radio amateurs. On the other hand, the amateurs, untrained in the specifics of medical language and methods, did a super job, according to Mike. Charlie said, "I evaluate this performance and response as an outstanding effort on the part of amateurs of this area".

Tony and Ron were on duty at AMCARE Headquarters when the emergency hit and initially handled the crisis and coordinated with Mike. A portable radio was borrowed by AMCARE from the Police Dept. for communication between AMCARE and the police. The phone Co. patched the AMCARE emergency number to the Fire Dept. Reggie, stationed at the Fire Dept. got the medical information and locations on ambulance calls. He relayed them to the Northwest Tower, an AMCARE communications site. Randy and Buddy would then dispatch the information by radio to the ambulance units. Frank McCollom, N5FM and Ron Cron, WA5EAI worked with Randy and Buddy at the Tower.

Bryan Dehart, N5BEV was stationed at the Oklahoma City Emergency Operating Center. He would encode the appropriate hospital to activate that hospital's radio, thus allowing the medics in the emergency room to receive information directly from the ambulance enroute. Facts like blood pressure, respiration, pulse, nature of injury, care already performed and ETA are given to the hospital by the ambulance crew on every patient while enroute. Three critical patients could not be reported because of some encoding problem, so Bryan passed the medical facts to the amateur at the hospital. Mike was especially appreciative of the amateurs' efforts at this point in the story. "Excellent" and "perfection" were words Mike used. Charlie said Bryan did an "excellent job" at the EOC.

When a serious accident or other mayhem report was heard on the borrowed police radio, Mike would call net control on 34/94 and have him
alert amateurs at all hospitals. Which hospital would get the victim
would hopefully be established as the ambulance sped away from the
scene. Mike did coordination work and various other jobs at AMCARE
Headquarters. His handy-talkie was very handy.

Television station KTVY, Channel 4, covered Fred, KA5CXW while he was at Presbyterian Hospital. Fred had the additional responsibility of AMCARE drug requirements, but this was not needed.

Mike said, "Fortunately it was a slow night". Still, it was an exciting and busy evening for several area radio amateurs and some AMCARE personnel.

The assignment and backup lists follow. Remember, the date was Thanksgiving eve, time to start family and holiday activities. If we have omitted anyone, please forgive us. Contact this writer and you will be honored in the next C&E. The lists:

Assignments during the first net control shift by Charlie, WA5JGU

```
NAME
                   ASSIGNMENT
CALL
                   Presbyterian Hospital
KA5CXW
        Fred
                   Baptist Medical Center
W5PZW
        Tom
                   St. Anthony Hospital
N5BEQ
        Jim
                   Deaconess Hospital
K5URJ
        Perry
                   Mercy Health Center
K5SJV
        Don
K5PER
                   Moore Hospital
       Jim
                   Edmond Hospital (Relieved by Lee)
WD5FEI
       Martin
       Lee
KA5JZQ
                   Edmond Hospital
WB5PNH
                   Children's Hospital
       Tony
                   Hillcrest Hospital
N5CKH.
       Bob
                   University Hospital - Also liaison for State
KA5DCM
        Jerry
                          Medical Examiner
WB5TMW
                   S. Community Hospital
        Dick
                   Oklahoma City Emergency Operating Center
N5BEV
        Bryan
                   Northwest Tower, site for fire and ambulance
N5FM
        Frank L
                          repeater controls
WA5EAI
        Ron 1
                   Phone relays and information
W5HXL
        Bob
         Irving
K5PIA
                   Phone relays
                   AMCARE
W1GOM
        Art
       Mike
                   AMCARE
WA5PDH
                   Bethany Hospital
K5VRL
        Jim
                   Phone link for ARES call up
       C. Y.
WB5TKG
                                W5JEB
                                        ₩ΦDXA
Backup amateurs: W5UGM K5RRQ
                                                WB5RLR
                                                        WB5ZKY
              KA5ERW W5GNV
                               WB5ISO
                                                K5WUF
                                        WB5CNM
                                                        WB5TFX
       W7LLP
K5AWO
WB5FQW
       W5PML
                        WB5RRZ
                W5FLO
Assignment changes during second net control shift by Don, AE5N
                   REPLACED
 CALL
         NAME
WB5PWZ
        Bob
                   KA5CXW
                   W5PZW
WD5HRW
        Oscar
K5WUF
        Dale
                   K5URJ
WB5CNM
                   K5SJV
        Randy
                   K5PER
WB5FQW
        Dave
                   WB5PNH
K2GKK
        Mac
                   N5CKH
WB5SVD
       Charlie
                   KA5DCM
W5GNV
       Gary
         Martin Returned to Edmond Hospital
WD5FEI
```

Information was obtained from tape recorded interviews with Charlie,

Emergency AMCARE net closed 12:52 A.M., November 27, 1980

WA5JGU, Mike, WA5PDH and Don, AE5N by Bill Rogers, WA5RAQ



A SERVICE OF CENTRAL OKLAHOMA AMBULANCE TRUST 2409 North Broadway Oklahoma City, Oklahoma 73103 405/525-8991

December 11, 1980

Central Oklahoma Radio Amateurs P. O. Box 15013 Oklahoma City, Oklahoma 73135

Dear Neighbors:

The evening of November 26, 1980 certainly took us at AmCare by surprise. At approximately 1700 hours, all telephone lines supporting AmCare's telephone and mobile radio communications system were interrupted.

The operations of metropolitan Oklahoma City's pre-hospital emergency medical care system was placed in severe jeopardy for over ten hours until the problem areas could be identified and repaired.

On behalf of all of us at AmCare, and the nearly 600,000 persons across the 700 square mile AmCare service area, I wish to extend my very personal appreciation to our neighbors of the Central Oklahoma Radio Amateurs. Your timely and very important assistance was a fine display of community support and will not be forgotten.

Your invaluable assistance in maintaining vital communication linkages between the AmCare Communications Center, mobile emergency medical units and area hospitals gave an extra dimension to the meaning of Thanksgiving.

You all are very special people and you have our warmest wishes for a very Happy, Healthy, and Prosperous New Year!

Jeffer W. Gauthier

Executive Director

JWG/jl

Sincerely,

EDITOR: Jack Bickham, WB5TZZ

329-1311

SCARS COLLECTING DUES, REPEATER SUPPORT FOR 1981

The South Canadian Amateur Radio Society is collecting dues and repeater support from members.

Annual dues in the club, including CORA support, are \$6. The suggested minimum for support of the W50U Repeater is \$15, with many throwing in a few dollars extra.

The club was in the process of getting out a letter to present and prospective members at this writing, but if yours has not arrived, you needn't wait for it. Dues are collectable NOW. Send your check for \$21 (or more) to WASMLT.

Incidentally, if you are not presently a member of SCARS but might join, we urge you to do so. We're looking for more brainpower, and hope to expand our programs and public service in 1981 if we recruit a little more membership.

AFTER THE PARTY COME THE RESOLUTIONS

SCARS had no regular business meeting in December because of the annual Christmas party, but business will resume as usual in January. Meetings have been moved to the second Saturday of the month.

Meanwhile, a number of Morman area amateurs were heard voicing New Year's resolutions. We caught a few of them, to wit:

W5SQJ -- to finish his receiver before everybody is on NBVM.

W50U .-- To finish his tower projects before July 4.

WASMLT -- To finish his lunch some day before supper.

KB5EK -- To finish his chewing tobacco before eating the muffins.

WASRPP -- To climb his tower.

W5MCN -- To get W50U's alternator running THIS year before Field Day.

WD5HPU -- To learn how to type.

KC5CU -- To perfect his soccer technique.

N5ALG -- To go on the gold standard.

WB5QNK -- To send a QSL card.

N5MS -- To chase DX.

AF5X -- To stop talking funny.

W5LFK -- To rearrange the furniture inside his new linear.

MAN, WHAT A DIFFERENCE! -- Product Review, TET 4-Element Tribander, HB43SP

(Review by Sam, WA5RPP) -- After spending almost all of my 14+ year amateur radio career trying to talk myself out of erecting a tower and beam antenna, I now must admit that I have lost the argument. With the exceptions of the 6-meter Yagi on my dad's garage when I was in high school and the Mini-Quad on a 30-foot TV mast that fell down after five weeks (end of Mini-Quad) I have always made the best of my situation by using wire antennas.

Last spring after many nights of soul searching I ordered a 70-foot Rohn 25 tower. When the tower came, I stacked it out of the way in the yard and forgot about it. Only this fall when winter was threatening did I get prodded into going ahead with the project. I must say at this point that Jack, WB5TZZ, did a masterful job of getting me fired up for the project (Jack is only happy when working DX on 75 or when climbing towers -- his own or someone else's.)

The story of the tower erection could go on for pages, but nearly everyone has a general idea of how the tower goes up, and what I really want to tell about is the TET HB43SP 4-element Triband Yagi.

The HB43SP is a 4-element triband Yagi which has two parasitic directors and two driven elements. The antenna is fed at the forw ard driven element which is connected to a rigid phasing line that feeds the rear driven element. The phasing line has a crossover at its halfway point in the form of a printed circuit board. All of the stainless steel electrical hardware as well as the mechanical hardware seems to be very durable. The boom diameter is two inches and its length is 19'8", while the longest element is 27 feet. The weight of the assembled antenna is 38 lb.

Assembly went very smoothly with only one minor problem, due to my failure to fully read the instructions for assembly of the phasing lines. The antenna comes with 6 pages of assembly instructions, but three of the pages are drawings (Continued, Page



(Continued) and diagrams. Only a minimum of tools are required for assembly and the finished antenna is apparently very sturdy.

Bright and early on the morning of the Oklahoma-North Carolina football game, a hearty crew was assembled (namely WB5TZZ, W5OU, KB5EK and myself), and the antenna was promptly and swiftly bolted into place atop the tower in only two hours. The length of time

required for the aforementioned group to complete the task of raising the antenna is in no way connected with any problem of the anetnna or crew, but it is direct proof of an ancient, local amateur radio theorem which is usually attributed to WB5TZZ: The estimated time to perform a given task multipled by a factor of 10 equals the actual time required to perform the previously mentioned task.

After the beam was in place, preliminary tests, including SWR measurements, were performed, and the project was pronounced a success. SWR on 20 and 15 meters was below 1.3:1 throughout the band. On 10 meters, SWR was also less than 1.3:1 from 28.0 to 28.7 MHz which is all of the 10-meter coverage that my transceiver has.

Now, the big question. How does it work? Well, naturally any tests results obtained without the use of an antenna testing range will be only subjective, but in my opinion the antenna works very well. The best proof for me is that not only am I able to hear stations that I have never heard before, but also I feel that I am certainly able to hold my own in a pileup, while clearly out-performing many of the stations who are competing for the contact.

The HB43SP and its little brother (HB33SP 3-edement model) are manufactured by TET, USA, 425 Highland Parkway, Norman, 73069. The fact that the antenna is made so close to home has several advantages including local pickup which saves freight charges. General manager for TET USA is Neal Smith, K5FT, and local phone number is 405-360 6410 or toll free 1-800-654 3231.

Factory stated specifications: Model HB43SP

Bands: 14/21/28

Elements: 4 Elements per band: 4

Maximum power: 2 KW VSWR: below 1.5:1

Impedance: 50 Ohms

Boom length: 19' 8" Boom diameter: 2"

Turning radius: 17'

Wind surface area: 6.62 Sq. Ft. Wind load @ 80 mph: 131.3 lb.

Suitable mast: 1 1/2-2" Front-back ratio: 22 db.

Weight: 38 lb.

Gain db: 10 meters -- 11

15 meters -- 10

20 meters -- 10

NEW EC ANNOUNCED FOR CLEVELAND COUNTY

H.O., WASMLT, SEC for Oklahoma, has announced the appointment of Jess, AF5X, as new Emergency Coordinator for Cleveland County effective immediately.

Jess replaces Charlie, WB5UUX.

A MARS operator who tends to specialize in CW, Jess lives on Norman's west side and is past-president of SCARS. He has also served as an assistant EC under the last three Emergency Coordinators.

W5NUT BACK FROM PJ7; RAT FRIEND STAYS BEHIND

Gil Wood, W5NUT, Shawnee, returned early in December from his annual sojurn to St. Maarten, where he operated W5NUT/PJ7.

With the exception of a shorted 6146 in the transmitter, things went smoothly, Gil reported. As usual, the multitude was waiting on 10 meters. Now comes the job of sending out a few thousand QSL cards.

Gil said conditions were screwy on 10 this year; he worked only a handful of JAs in contrast to the hundreds worked a year ago. He did pick up a few new countries to add to his impressive list worked in several trips to the Caribe.

Staying at the White Sands again this year, Gil was again visited by the rat who eats sand crabs and WD-40. This year, however, Gil caught the rodent in the act and dispatched him to the great garbage can in the sky. We will spare the details in deference to the faint-hearted. Ole!

FOR SALE: Kenwood Station Monitor scope SM220. Mint, original carson and manual. Make any reasonable offer to Jack, WB5TZZ, 329-1311 in Norman.

IN CHINA, GETTING AROUND CAN BE TOUGH



(Editor's Note: This is the third and final installment of the China report written by an Oklahoma amateur radio operator whose interest im foreign lands and people may be exceeded only by his knowledge of radio history and technique.)

By John Nelson, W5AVK

Transportation is limited in the Peoples Republic of China. In the cities of a million or more population they do have a bus service to get people to and from work. The busses are so long that they are actually hinged in the middle so they can turn the corners. Then everyone has a bicycle. Everyone. When one cannot cross the street because of the bicycle traffic going in both directions, that is a mess. Costs too much for a motorcycle and besides it is frowned on to own one.

It is against the law to possess an automobile unless one has a need or can pay off an official. It is a luxury item. You see it is a necessity when it is used for a taxi service, otherwise it would be a waste if you only used it for convenience or pleasure or just going to and from work.

There are accidents, even with bicycles. I did see two bicycles collide... the riders both got up and apologized for their stupidity in letting the bikes get in each others way. I thought of what would take place in the US if such an accident happened.

Then too roads are lined with all sorts of two-wheeled carts. These are pulled by hand but sometimes one or more donkeys help out in pulling. People, bicycles and donkey carts line the roadways throughout the cities and urban areas. Chinese people walk, only Americans ride in comfort.

You can buy things in China lots cheaper than you can in the US, that is if you can get hold of the right kind of money. Foreigners are issued Renminbi Yuan money to spend. It can only be spent in the Friendship Stores or designated places which are the larger department stores specializing in that which foreigners will buy. It also is a means of keeping track of how much money foreigners spend its distribution in the country. Local Chinese are not allowed to go into some of these stores unless invited. They might break something so the army guard at the door uses his sharp beyonet to keep them out.

I don't know how long this preferential treatment will be given tourists. They might ride in air conditioned busses, sit in the best seats in the shows, but one day someone is going to get wise. It might cost him his life but it is inevitable. Chinese people cannot accept tips from imperialists. Not even gifts unless it is sent through the mails and then only if the gifts are passed by the authorities. Such is outlined in the instruction books one gets before he enters China.

When our train reached Canton station we were much too shaken up to enjoy the evening's entertainment. We wanted to take a shower. Besides our trip was coming to an end and we were all looking for our passports, our receipts, and preparing to meet the customs. Everything we take into China must be taken out. Even our money accounting, that's why it is so important to keep receipts. Well, it was not so bad. All we had to do was exchange our money since no PRC money may be taken out of the country. Our baggage was not even looked into.

We again boarded the air conditioned train for our trip across the border, we were served tea, our papers rechecked to see we had brought out of the PRC everything we declared on entrance such as rings and watches, gold neck chains, etc. Then we travelled on back to Hong Kong where we again closed up our pockets with safety pins, secured our visas and tied our wrist watches to our wrists. Then we just had to go shopping for those bargains, which there are none, to fill the list of presents and junk to tote home.

When time came we hopped about the jet aircraft for three-hour flight to Manila, nine hour trip to Hawaii where our luggage was passed by customs, then five hours to San Francisco and three hour flight home.

China was green from one end to the other, even though they were in the biggest drouth of the century, everything is irrigated. Here at home we also found out drouth was continuing and everything was dried up. God Bless America anyway. I came home knowing both more and less than I ever have in my lifetime. I am not sure that I will ever understand all that passed before my eyes while I was in the Peoples Republic of China.

EDITOR: Jay Tingler, WD5BUQ'273-3033

'TIS THE SEASON!!!!!!! Again it is very hard to realize fully that another year has almost gone by. 1980 may well have been the fastest one yet. I suppose that this would be a good place to summarize the accomplishments of SARC during the year but I'm not going to. I will just say that it has been a very productive year and one in which we have seen some changes - some good - some not so good. I think that is the way it is supposed to be so maybe it has not been remarkable at all. But - we're not done yet - - - get this:

NEW NET FORMAT: Effective sometime between now and the time you read this the Pottawatomie County ARES Net will move from 146.52 mHz to 146.31/91 mHz. The time will be the same - 1900 hours LOCAL TIME each Tuesday evening. There are a number of reasons for the change. The most obvious - and the one that you have probably noticed - is that the frequency change automatically puts us on the local repeater where we hope to get better all-around coverage. Further, this is where emergency operations and other official business of the amateur radio community are carried out..... Also, we nope to lure some folks from neighboring communities into the little meeting - and - maybe pass a little traffic, do a little real live training - and make the affair more than just a ten-minute greeting session.

HOLIDAY TRAFFIC NET: Each evening at 2000 - 2100 hours local from December 15 until about December 23 we will activate the net on 31/91 for the primary purpose of moving holiday traffic into and out of the community. May even do a little relay work, too. Net control will be moved around as a way of getting more feet wet in that chore. We will report on the success of this next time.

SCHOOL DAYS. SCHOOL DAYS - -: Last time we told you about a demonstration of Amateur Radio conducted by Bob Almand, K5LZF and others out at Bethel School. What we didn't mention is that Bob came away from that meeting with some 25 names of people interested in earning the old Ticket. Well, I'm pleased to report that preliminary arrangements have been made for a class of instruction leading to the Novice Class Amateur Radio License to be held at Bethel School on Monday evenings starting on January 5, 1981. The primary instructor will be The Old Philosopher with Jim, KA5FBC/DL - (he passed his General Class last week) - assisting. (I expect to get some more "help" from a few others, too but I think I'll make them come through Jim first so that he can screen out the really "good" stuff.) A-n-y-w-a-y, the course will be taught somewhat along the ARRL lines and we expect a high degree of success. Not all the details have been ironed out but we expect to public very soon with radio and newspaper spots and maybe even a poster or two. Not much time left, but we'll make it!

ANOTHER NEW FACE - SAME OLD SOUND: Carl Cash, WB5VPW, has moved to Shawnee from down Wetumka way. We're glad to have you, Carl!!

FOR SALE: TS-520S by Kenwood in like-new condition. Has 160 to 10 meters. Asking \$600. Call John, WB50NL at 273-0407 or 273-0848.

FOR SALE: Hallicrafters SX-28-A Receiver. Needs some work. Does not have cover but will rack mount. Also, Collins 32V-1 Transmitter. Was working last time it was turned on but has been in storage for some time. Best offer on either or both units. Call Gloria, WE5PQX at 273-2787.

FOR SALE: HAMMERLUND SP-600 Receiver. Good Condition. Covers 0.54 to 54.0 mHz CW, SSB, AM. \$50. Jay, WD5BUQ, 273-3033, Shawnee.



FROM THE DESK OF THE OLD PHILOSOPHER: I guess it is pretty obvious to most of us, at least, that no amount of money could buy our Ham licenses. This craziness is more than just a hobby to many of us. I doubt that there is a limit to the variety of activities that belong to it. DX, RTTY, SSTV, OSCAR, ATV, EME, ... you know

all the modes. And there's more. The down to earth stuff like putting up some poor stiff's first antenna - in the rain or on a bitter cold day - just for the fun of it!! The fellowship (I never met a Ham I didn't like. (Sorry about that, Will.)) - the difficulties in getting some kind of program off the ground - the ribbings we take over rather ordinary things that somehow seem to be funny at the time - there's listening in when someone needs to talk and there's having someone to listen when you need to talk! Um-huh, its a whole heck of a lot more than just a hobby. And there is at least one thing more valuable to me than my lisense and that's the friends I've come to know through Amateur Radio. To them - and to their loved ones - and to all of you and yours I just want to say "Have a very Merry Christmas, everybody, and a very Happy and Prosperous New Year!"

73, JAY, WD5BUQ

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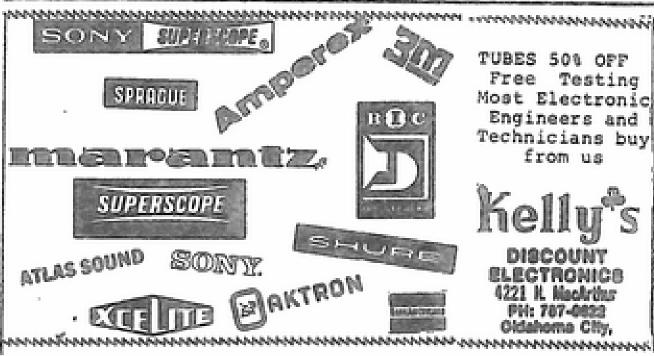
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5-10

CORA Collector & Emitter January 1981 -31-





The December meeting began with a buffet dinner at 6:30 pm on the 9th with Cattlemen's Steak House serving ribs, roast and ham with mashed potatoes, sweet corn, peas, yams, five salads and two pie desserts for 56 members and guests.

The minutes of the November meeting were approved as published in the December Collector and Emitter (C&E) upon motion of Mark WD5DYI and second of Don AE5N after some discussion over a possible error.

On motion of Coy N50K and second by Paul WA5HTL the report of the Treasury was accepted as read by the Treasurer, Joe WD5BMP.

There being no business transacted as such, the following

two announcements were made by the Prexy, Bill, KB5BS:

1. The weekend of 13-14 December 80 will find the 76ers operating HF phone-patches for the Wilshire Nursing Home residents to their relatives and friends within the State Saturday and to other states Sunday. Frequencies and locations had been prearranged with the aid of the Home's newsletter;

2. The January '81 meeting (on the 13th) will find test equipment available courtesy of our Prexy and his employer for 76ers club members to check and set the likes of alignment, distortion. frequency, deviation, signal-to-noise level, etc., in our VHF gear. You may make your own adjustments with assistance of the Technical Committee if needed.

The balance of the proceedings were given over to the Program Committee ably chaired by Don AE5N, beginning with "A Fractured Visit from St. Nik" courtesy of AE5N, WD5DYI, WD5DYJ, WD5JNT, WB5TMW and N5BEQ with apologies to Rev. Moore c. 1822. Can you believe K5NK as a Santa Claus? Special thank from the entire attendance go to A.B. WD5ISN and Wanda KJ5C for their expertise as the prize committee, to Lori Duck for her selectionability and to Travis Duck for his deliverance. Prize

winners were: Paul WA5HTL George W5DDI Eunice Holt June N5ARV Jerry N5AUH Charlene Sproul Bill B5BS Jim WB5VCB Don K5UKP Bea Jones Bob N5CKH Vern 49JTW

Wanda KJ5C Sue KA5JQP Bonnie Moore Carroll Moore Jerry N5ABF Lesta N5AWI Jim KB5XN Ann Seals Bob WB5PWZ Don AE5N Lois Duck Travis Duck Lori Duck Wayne KA5DCI

Don K5SJV Julia Hunteman Bea Atkinson Clara WD5KFT Carol K5CPZ Dick WB5TMW Shirley Baker Venus Vanlandingham

Соу М5ОК Kay WD5DYJ Tom W50ZE #1 Mark WD5DYI Bob WD5EVP Bob ₩5∀ZU Susie KA5FED

Lyn Douglas Special door prizes went of Travis and Lori Duck and to Scott and Kerri Sproul.

The Club heartily regrets the inability of Joe WB5TDW to join in the festivities due to his recent hospitalization and all expressed their fondest hopes for his earliest recovery.

After selected songs of the season in unison were accompanied on the piano by Kay WD5DYJ, selective souls were searched but barings will be left to another medium.

Didja hear the one about the new highway patrol trooper? This happy group adjourned at 9:09 pm after wishing all a Meaningful and Wonderful Christmas 1980.

The next meeting will be January 13th at the Oklahoma Air National Guard Base on SW 54th St., OKC. If your VHF gear needs adjustment, bring it and be ready for a coming Happy New Year.'.

> Jim N5BEQ Secretary

AGE SAGE: HOW TO KNOW WHEN YOU'RE GROWING OLDER OF IS THERE REALLY LIFE AFTER 40 ? : WHEN YOU SINK YOUR TEETH INTO A STEAK AND THEY STAY THERE.'. jim n5beq





EDITOR N5IH

This being one of those weird months that the C&E goes to paste-up before our meeting, I cannot report on the meeting itself, but I can say that I hope everyone had a very merry time at the Christmas party. If you have any comments about the meeting or where it was held please contact Chuck (K5NK) and air them to him. I am sure there must be a lot of comments based on the number of registrations sub-

FOR WHAT IT'S WORTH - Is it true that our friend(?) Mr. Charles Guschke is not really German after all??? It has been reported that Mr. Guschke's name has not always been spelled with chke, but actually ski. If this is true then a lot of things make since. By that I mean a lot of the stunts he has pulled could be excused because of the situation. The only thing that upsets me is that this person appears to be ashamed of his nationality, and therefore can not be considered to be anything but a "CLOSET POLOCK". NOW WE ALL KNOW !!!!!!

INSURANCE - Don't forget the insurance program that is offered thru the Autopatch assn. All details in the December issue of the C&E.

ROSTER - This month we were going to run the roster of our members but no in-order list from our secretary as of yet.

The Amateur's Code

OME

The Amateur is Considerate...He never knowingly uses the air in such a way as to lessen the pleasure of others.

TWO

The Amateur is Loyal...He offers his loyalty, encouragement and support to his fellow radio amateurs, his local club and to the American Radio Relay League, through which Amateur Radio is represented.

THREE

The Amateur is Progressive...He keeps his station abreast of science. It is well-built and efficient. His operating practice is above reproach.

FOUR

The Amateur is Friendly...Slow and patient sending when requested, friendly advice and counsel to the beginner, kindly assistance, cooperation and consideration for the interests of others; these are the marks of the amateur spirit.

FIVE

The Amateur is Balanced...Radio is his hobby. He never allows it to interfere with any of the duties he owes to his home, his job, his school, or his community.

SIX

The Amateur is Patrictic... His knowledge and his station are always ready for the service of his country and his community.



OKDX

The first meeting of the OKDX group was held on December 8, 1980 at Kryder Electronics on Northwest 50th and MacArthur. Those present will be listed at the end. Discussion included when to meet, where to meet, what time to meet, and a lot of other things. It was decided that OKDX would meet the second Monday night of each month which makes the next meeting January 12, 1981, (also to be held at Kryder's). It is understood that Mr. Guschke's generosity will not be overused, and a permanent meeting place will be decided at the next meeting. So, check around and find us a good coffee shop where we could meet. By the way, the next meeting will also be at six p.m. local. This seems to be a good time so everyone can get home and eat dinner at a reasonable time.

The OKDX wants everyone to know that even though this is primarily a dx group, we welcome anyone who is interested in the "HF" ham bands. We plan on giving tips on such things as tailgating off frequency calling and more, also when and when not to do this type of calling.

It was also decided to read the QR Zed DX Bulletin and the HR Report over the OKDX frequency (146,000) each Friday at 7 P.M. local. Other announcements will be made at that time if need be. This will hopefully save some folks a few dollars. Another thing that was discussed was contesting. It was generally decided that there are some contests in which to run multi-multi and others in which you do not. One thing that was agreed upon was Fieldday. Thoughts are that if we (OKDX) do in fact participate in fieldday that it would be like Oklahoma City has never seen. Look out North Dallas!!

It was generally felt that OKDX should not be a club, as such. Not organized anyway. This way, hopefully, we can attract everyone interested, if only a small amount in "HF" DX. We welcome anyone and everyone who shares this tastewith us, regardless of whether you have zero, three, or three hundred contries.

One last thing that was discussed, and later agreed upon, was the necessity for a "need list". In other words, a list of countries that you still need. If everyone will take a current DXCC countries list and mark the ones you lack, even if it is most of them, Mr. Guy Liebmann will run the complete list on computer for us. At that time we will be able, at a glance, to see who needs what country. This will be a tremendous boom to all of us. Then each month, here in the C & E we can run updates and deletions. Also with this list I'll show one convenient method of cross checking for worked, qsl'ed and confirmed contries.

Enough for now, see ya January 12 at 6 p.m. local

ON NOW OR SOON

VK4NIC/3X is on every day of the week on 28.735 at 1530z and a list taken by W4FRU and run about 1700z. He is also on daily at 2030z list by W7PHO at 21.255. He meets VE3MC at 21.202 runs about 12 or15 VE's and then moves to 21.255 for the



State-side boys. QSL W4FRU

5R8AL - look for this one 1600z or 1800z on 21.170, 21.325, or 21.350. He moves around a bit.

PYØ - St. Peter & St. Paul N*O*W

OY5R has been showing up on the Africaner group almost daily.

J2Ø/A - I hope that everyone got to work this one on Abu-Ail. QSL K6LPL

4W - As of today(This writing) there is a chance for operation from 4W. If it is true, you will probably hear him at 28.510 and QSL via K2FV. Good Luck !!!!!

J2Ø - Lots of activity has been showing up on the bands from this one - old prefix include J28 and FL8.

THOSE PRESENT AT THE FIRST MEETING

ADIS George	N5FM Frank	KE5M Ron	W5MEL Leonard
N5IH Henry	N5GE Tom	KA5AQY Buddy	K5GL Guy
WB5TKG Cy	N5SW Chuck	K2GKK Mac	WB5ANA Steve
WD5EMA Bill	W5MMD Tom	KA5BJS Judy	W5KWK Charles

Last, but not least, was WA5CZN Doc and his wife Donna.

After looking over the list of folks who were here, I am sure you have noticed a lot of "big guns" who were not. Believe me, there were very good reasons on more than one. Most do feel, however, that the turnout was very good considering the extremely short notice everyone had.

146.000

Don't forget that the OKDX frequency is 146.000 simplex. Jump in and ask what is new and on the "HF" bands. Please do not feel that you have to have a large country total to participate. Hopefully we can all help each other not only work "a new one" but also improve our operating habits and skills. LONG LIVE DX**OKDX***



CORA Collector & Emitter

EDITOR: Bob Graham, WB5NSV 677-8685

January 1981



-35-

JANUARY '81 HAM HAPPEKINGS						
Sunday	Monday	Tuesday	Wednesday		Friday	Saturday IS STAN TRUSTWORTHY AFTER 3 TODAY?
Wheatstraw @Okarche	7R1-C174.	MORI, Great 6 Plains	7	ALTUS, ATV, ARES 8 TRAINING	9	clea mkt.
	Choctaw, USAF MARS	O.U., Shawnee, 76ers	SEE PAGE FIVE!	Kay County	VHF Elections 16	SCARS
EARS	19	OCAPA 20	21	REALLY A HUGO SEOARCE	23	EDIT C4E
25	26	Shawnee, CORA 27	28	Happy Birthday Kay! 29	30	ACARC mails Core 31

Can you wear

SOFT CONTACT LENSES?

Find out if you can wear soft contact lenses. Just drop by for a free computer analysis using our System 6600 Autorefractor.

If the signs are right, we'll place soft contact lenses on your eyes and make a further evaluation. Bring your written prescription if you wish. Patient normally gets lenses IMMEDIATELY!

840-1234

Dr. Robert Goodhead Optometrist, Inc. 2821 N.W. 57th St.

NO APPOINTMENT NECESSARY

Ask Doc, WA5CZN, about his fantastic contacts!

*** IMPORTANT *** Examination schedules must be submitted with your application (form 756 for Commercial exams; Form 610 for Amateur exams) so that all forms are received by the Dallas FCC office at least TWO FULL WEEKS PRIOR TO THE EXAM DATE REQUESTED.

Print your name and address in the space provided at the bottom of this form. This form will be returned to you approximately one week before the exam, showing the time and location of your exam. This form then becomes your Admission Notice: Bring it with you to the exam.

CITY OF EXAMINATION

	AMATE UR		COMMERCIA	L	
OKLAHOMA CITY, OK	January April July October	13 14 14 27	January April July October	14 15 15 28	DO NOT WRITE IN THIS SPACE Please appear at:
LUBBOCK, TX	March September	10	March September	11	
TULSA, OK	February May August November	10	February May August November	11 13 12 18	
EL PASO, TX	June December	9	June December	10	at:am/p

Advance registration is not necessary for exams given IN the Dallas office only. However, groups of ten or more must obtain a prior appointment. 1981 SCHEDULE BELOW

Amateur:

FIRST and THIRD TUESDAY of each month.

Requiring code: 8:30AM-10:00AM, Theory only: 8:30AM-12:00Noon

Commercial

Radiotelephone:

FIRST and THIRD WEDNESDAY of each month, with the EXCEPTION of April and July, when the exam will be given on the 8th and 22nd.

8:30AM-12:00Noon

NAME
STREET ADDRESS
CITY, STATE, ZIP CODE

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