CENTRAL OKLAHOMA RADIO AMATEURS
COLLECTOR AND EMITTER
50¢
Volume 7 OCTOBER 1981 Number 81

## LIFE SUBSCRIPTIONS -MY LIFE OR THEIRS

While on my yearly walking tour of the Dayton Hamvention, I stopped at the 73 Booth and got into a conversation with one of the salespersons. After reassuring that I was a faithful subscriber and that I dropped my subscription to Kilobaud and didn't intend to renew it until I got a bigger computer, she didn't have anything to sell me except a life subscription. I guess that I am a sucker for a pretty face and I asked her to tell me more since I can remember reading that Wayne charged just $50.00 for life subscriptions in the early 1960's. Well, its gone up a little, actually about 550%. Oh well, that's progress, I guess. I wasn't particularly interested in forking over such a large amount of cash at the time especially since I hadn't seen all of the flea market yet, but they then proposed a payout (she was most persuasive) over a period of a couple of years or so and I thought that it might be the living end.

I would imagine that $275.00 placed in the proper investment would generate at least $27.00 a year in interest and they would get to keep the principal when you died. Not a bad deal for them. I figured that my payout would take place over about 15 years or so especially if you take into accout that I would probably not accumulate that much money and invest it just for the purpose of paying my magazine subscriptions.

Well, the deal was so good that I took it (actually cooler heads did not prevail until I walked away from the table) so I wandered down to the ham radio magazine table and found that they were selling life subscriptions at a bargain $250.00. Gulp, also another nice looking young lady. Oh, well, what the heck, I signed on the dotted line for their payout. I sent them a check and they sent me an invoice. I just recently got an invoice from 73 for the balance. If lucky, I will try to pay it out over the next year or so. They don't seem to be in any big hurry and told me that they would extend my subscriptions continously until my total payment reaches $275.00 at which time they will turn my subscription into a life subscription.

My first encounter with a life subscription occurred when I purchased an ARRL life membership about three years ago. It took two years to get the total paid, but it was worth it in terms of what it is now. I believe that it took $240 or so then and it was up to over $400 by the time I finished paying for it two quarters later. Again, this all represents a lot of money and I wonder what would have happened if I took the same amount of money and invested in a high yield return and used that money to buy a subscription. I guess that a person could also borrow against the money if he had to all the time taking the interest to pay for the magazines.

A recent perusal through ham radio made me doubt whether a life subscription to them at any price was worth it. Since the death of Jim Fisk, the magazine has gone down hill considerably. The demise of Ham Radio Horizons and its subsequent absorption into HR seemed to be an excuse to fiddle with the format even more. They added a lot of chaff from Horizons that is just wasted space. Fisk's idea for ham radio was a technical magazine sufficient to reflect the nature of our hobby. For many years, he succeeded. Some of the first articles I saw on Gunnplexers was in HR. In fact, Microwave Associates frequently reprinted that article (written by Fisk himself) to package with each new Gunnplexer. HR featured by far the best technical bend of all the magazines. He didn't print everything that was mailed to him. He was selective, discriminating, and above all intelligent. After his death, some of the articles published were unbelievably bad. It seemed like no one was in charge. The quality has picked up some, but I wish that they would return to the old format and move a lot of the other stuff out and send it back to CQ.

HR was not all things to all amateurs. It was technically oriented. 73 mixes technical articles with a wide range of other articles. QST is chock full of operating reports. Most if not most of the magazine is devoted to timely news that doesn't keep well. It is hard to justify keeping the magazines but for the good technical articles.

Maybe somebody out there might want to start an investment firm for the purpose of allowing people to invest their money to buy life subscriptions. That way if you ever decide to cancel, you could just send in a death certificate. The money would be invested and could be withdrawn. I don't really feel sorry for any of these publishers. I think that they will more than break even on me.

Micheal Salem N5MS

Central Oklahoma Radio Amateurs

COLLECTOR AND EMITTER

AN INFORMATIVE MAGAZINE PUBLISHED MONTHLY BY AND FOR OKLAHOMA RADIO AMATEURS AND ANYONE INTERESTED IN LEARNING ABOUT IT

Central Oklahoma Radio Amateurs, Inc. (CORA) is a non-profit association of radio amateurs founded for the promotion of amateur radio communication and experimentation for the advancement of the radio art and of the public welfare and operates to enhance the cooperation of member clubs in sponsoring activities of mutual interest to the clubs and all radio amateurs.

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Managing Editor: Joe Harding, WA5ZNF 737-1044
Circulation Mgr. Bob Graham, WB5NSV 677-8685

## PARTICIPATING CORA CLUBS

1. AERONAUTICAL CENTER ARC
MEETS: 8:00 pm First Friday, Flight Standards bldg., FAA Aero Center.

| | | | |
|---|---|---|---|
| PR | WA5CJG | Bob Pace | 376-3569 |
| VP | K5KDR | Bill Oliver | 329-6333 |
| Se | WB5NSV | Bob Graham | 677-8685 |
| Tr | WB5AAT | Larry Bagg | 789-4180 |

EDITOR: Bob Graham, WB5NSV 677-8685

2. OKLAHOMA CENTRAL VHF CLUB
MEETS: 8:00 pm Third Friday, Red Cross bldg., 10th & Hudson. OKC.

| | | | |
|---|---|---|---|
| PR | WD5IRB | Ralph Barton | 521-8330 |
| VP | WA5FWD | Bill Holand | 354-5018 |
| Se | K5JB | Joe Buswell | 732-0676 |
| Tr | W5KE | Chlard Foster | 789-6702 |

EDITOR: Joe Buswell, K5JB 732-0676

3. MID-OKLAHOMA REPEATOR, Inc.
MEETS: 8:00 pm First Tuesday, Oklahoma City EOC, 4600 N Eastern.

| | | | |
|---|---|---|---|
| PR | KA5CBU | Fred Taylor | 528-1537 |
| VP | W5PDH | Frank Arnold | 737-1582 |
| Se | KA5FED | Susie Atkinson | 842-8014 |
| Tr | W5KOZ | Sid Gerber | 737-1050 |

EDITOR: Susie Atkinson, KA5FED 842-0077

4. OKLAHOMA CITY AUTOPATCH ASSOCIATION
MEETS: 7:30 pm Third Tuesday, Okla City Fire Dept. Training Center, N. Portland.

| | | | |
|---|---|---|---|
| PR | K5NK | Chuck Wilhite | 721-4926 |
| VP | N5IH | Henry Israel | 722-3848 |
| Se | WD5CFT | Clara Storm | 495-6228 |
| Tr | KC5IS | Zach Zachry | 732-2888 |

EDITOR: Henry Israel, N5IH 722-3848

5. OKLAHOMA UNIVERSITY AMATEUR RADIO CLUB
MEETS: 8:00 pm (Sep-May) Second Tuesday Carson Engineering Center.

| | | | |
|---|---|---|---|
| PR | WB5RQB | Lee Hardy | 325-4545 |
| VP | KA5CDI | Peter Richeson | 329-3217 |
| Se | | | |
| Tr | | | |

EDITOR: Chris Royce, KB5QU 364-3848

6. ALTUS AREA AMATEUR RADIO ASSOCIATION
MEETS: 7:30 pm Second Thursday North Main Fire Station (CD) Altus

| | | | |
|---|---|---|---|
| PR | WB5MJS | Charles Smith | 477-1098 |
| VP | | | |
| S/T | KB5FW | Dennis Bonewitz | 477-0194 |

EDITOR: Dennis Bonewitz, KB5FW 477-0194

7. BICENTENNIAL ARC (The 76'ers)
MEETS: 7:00 pm Second Tuesday, Air National Guard, Will Rogers Airport.

| | | | |
|---|---|---|---|
| PR | KB5BS | Bill Skipper | 495-6946 |
| VP | N5AUH | Jerry Sproul | 354-2061 |
| Se | N5DEQ | Jim Buswell | 238-0368 |
| Tr | WD5BHP | Joe Couch (Guthrie) | 282-4353 |

EDITOR: Coy Day, N5OC 691-1194

9. WHEATSTRAW AMATEUR RADIO CLUB
MEETS: 2:30 pm First Sunday. Location varies - see club section/calendar.

| | | | |
|---|---|---|---|
| PR | AB5Z | Ray Barnes | 274-3334 |
| VP | WB5GLO | Dick Ruhl | 375-4843 |
| S/T | WA5PFK | Ralph Wilder | 623-5421 |

EDITOR: Ted Vanlangenham, WD5JBT 364-1675

10. CHOCTAW AMATEUR RADIO CLUB
MEETS: 7:00 pm Second Monday. Choctaw City Hall.

| | | | |
|---|---|---|---|
| PR | WD5EWP | Bob Allen | |
| VP | AB5R | Frank Carter | 391-2187 |
| Se | W5BEP | Syrena Standlee | 279-3975 |
| Tr | KA5ALQ | Richard Edwards | 390-8297 |

EDITOR: Syrena Standlee, N5BEP 279-3975

11. EDMOND AMATEUR RADIO SOCIETY
MEETS: 2:00 pm Third Sunday. Room 205, Science bldg. Central State Univ.

| | | | |
|---|---|---|---|
| PR | KB5RR | Clarence Dollmeyer | 341-7163 |
| VP | WD5DGC | Don Brown | 737-6141 |
| S/T | KB5QC | Roger Harmon | 348-1230 |
| EC | WD5RKC | Ken Stepp | 341-4878 |

EDITOR: Bob Janda, KA5AFN 341-2046

12. SHAWNEE AMATEUR RADIO CLUB
MEETS: 8:00 pm Second & Fourth Tuesday. Shawnee City Hall (EOC)

| | | | |
|---|---|---|---|
| PR | K5LFZ | Bob Alnand | 598-5148 |
| VP | KA5FIT | Walter Fultz | 598-3984 |
| S/T | KA5FBC | Jim Sullivan | 273-3843 |

EDITOR: Jay Tingler, WD5IUP 273-3843

13. KAY COUNTY AMATEUR RADIO CLUB
MEETS: 7:30 pm Third Thursday. Security Bank Basement, Ponca City.

| | | | |
|---|---|---|---|
| Pr | WA5UBO | Marsh Pronneke | 363-2526 |
| VP | WB5RQT | Pat Burnham | 765-7229 |
| ST | Cosby E. Clark | | 765-3150 |

EDITOR: Marsh Pronneke, WA5UBO

15. SOUTH CANADIAN AMATEUR RADIO SOCIETY
MEETS: 9:30 am Third Saturday. Red Cross bldg., North Campus, Norman

| | | | |
|---|---|---|---|
| PR | KB5EK | Wade Anderson | 794-5144 |
| VP | KC5CU | Charles Warner | 364-9561 |
| Se | WA5RPP | Sam Barrett | 321-6297 |
| Tr | WA5HLT | H. O. Townsend | 329-4426 |

EDITOR: Sam Barrett, WA5RPP 321-2601

16. EDMOND AMATEUR RADIO CLUB
MEETS: 7:45 pm First Monday. See club section for location.

| | | | |
|---|---|---|---|
| PR | WB5UIY | Stan Van Hort | |
| VP | WB5ISO | Wendall Cochran | 943-4308 |
| S/T | WA5SQX | Bob Shaw | 341-4874 |

EDITOR: Stan Van Hort, WB5UIY

17. TRI-CITY AMATEUR RADIO CLUB
MEETS: 7:00 pm First Tuesday. Location varies. See club section.

| | | | |
|---|---|---|---|
| PR | WB5UBB | John Warriner | 379-3149 |
| VP | WB5VLF | J. B. Bills | 379-3992 |
| S/T | KA5FDA | Nancy Haydon | 379-6448 |

EDITOR: Yvonne Warriner, WB5TYW 379-3149

18. GREAT PLAINS AMATEUR RADIO CLUB
MEETS: 7:30 pm First Tuesday, basement Woodward Court House.

| | | | |
|---|---|---|---|
| PR | N5CMW | Bill Wyatt | 256-3248 |
| VP | WD5DMH | Bill Reid | 994-2336 |
| Se | N5CCV | Gerald Bowman | 944-5381 |
| Tr | WD5DFG | Donna Reid | 994-2336 |

EDITOR: Carla Tice, WB@QGW 994-2138

19. SOUTHEAST OKLAHOMA AMATEUR RADIO ASSN
MEETS:

| | | | |
|---|---|---|---|
| PR | WB5TTY | Ron Henson | 326-5418 |
| VP | WD5UEI | George Weldon | 326-5672 |
| S/T | WD5FUE | Orville Raley | 326-3650 |

EDITOR:

CENTRAL OKLAHOMA RADIO AMATEURS, Inc.

CORA meets the Fourth Tuesday, 7:30 pm, Red Cross bldg., 10th & Hudson

## CORA OFFICERS

| | | | |
|---|---|---|---|
| President | Chuck Wilhite | K5NK | 721-4926 |
| Vice President | Bob Graham | WB5NSV | 677-8685 |
| Secretary | Kay Northcutt | WD5DYJ | 842-1086 |
| Treasurer | George Maschino | K5GGL | 263-7614 |





## WHO'S WHO IN AMATEUR RADIO, or "Hey, Didn't You Used to be Somebody?

There was a time, many years ago, when we studied code and theory, over and over, until we had enough nerve to journey to the FCC office to take our exams for a license. after we were told that we had passed, we went home anxiously to anticipate the arrival of our new license with our very own call. What would it be? A new one from the alphabetical list? A reissue from a silent key or a dropout? A good combination or an awkward one?

Finally it arrived! We looked it over. Was it easy to say, or some oddball combination? Regardless, like the name our parents gave us, it was ours for life.

At the club meeting we were introduced. Gang meet our newest ham, W8QQQ! On the air, we soon learned to recognize the cw combination of our very own call. The QSL's came to our mailbox carying our distinctive call. Eventually it became part of us, like a tattoo. We WERE W8QQQ, and nobody else was!

Upgrading was no problem. If we started out with a WN call, as soon as we could copy 13 and prove it, the "N" would be removed and we still had our original call. After that, upgrading did not change our identity. That call was us, and we were that call. And we could keep our upgrading a secret, or tell about it at our own discretion.

There was one little problem. Being a mobile society, we had to change jobs occasionally and cross into another call area. We could operate "portable" for a while, but eventually faced the sad fact that our call would be torn from us and we had to get used to another one with a strange number in the innards.

Now look what's happened! The FCC decided to tag each rung on the ladder with a different combination of letters. If you go the whole route from novice to extra, it is possible to have four different calls.

When we hear a new upgraded call on the air, we have to watch what we say. If you don't recognize the voice, you might put your foot in your mouth.

As a minor invasion of privacy, the new calls also identify each step of the ladder one has acheived. If there is a problem with code, or for some other reason upgrading is difficult, you can almost hear the whispers, "How come our friend is still a KA?".

To further complicate the situation, the FCC gives you the privilege of NOT changing when you ipgrade. Some of the gang have decided that they liked their general class call, but have upgraded to extra class. Since it's now the vogue to flaunt your superior extra grade status with a 2X1 call, then how are people going to know that you, too, have an extra class?

Then theres the problem with QSL's, car license plates, those engraved lapel pinsm the hand-carved sign for your shack door, and everything else that carries your vacated call This could get very expensive.

I must admit that one of the advantages of the new system is the provision that allows us to keep our call when we move into another area. My call might as well be tattooed on me. I intend to keep it the rest of my life, no matter where I may roam.

Herb Lipson, W8FBH ARNS

CORA Continued from page 18

PROGRAMS: Real good attendance. Good reports on content. 150 per session. Friday night attendance very low and will be re-evaluated. as to whether

The above are the personal observations of the Managing Editor gleaned from attendance at the meeting. Visitors can't vote but are sure welcome at CORA meetings. Talk to your club representative before the October meeting which will be held as usual on the fourth Tuesday October 27 at the American Red Cross building, 10th & Hudson in Oklahoma City. Clubs who can't SEND a rep should at least furnish a written opinion of how the meetings should be conducted.

Joe Harding, WA5ZNF

1833 N. W. 7
OKLAHOMA CITY,
OKLAHOMA 73106

AUGUST 8, 1981

MR. MARK FOWLER: CHAIRMAN,
FEDERAL COMMUNICATIONS COMMISSION
1919 M STREET N.W.
WASHINGTON, D. C. 20554

DEAR MR. FOWLER,

A GENTLEMAN NAMED RICHARD McMILLAN HAS BEEN TRANSMITTING RADIO SIGNALS ON A FREQUENCY OF 146.07 MHz IN THE OKLAHOMA CITY AREA. MR. McMILLAN IDENTIFIES HIS RADIO TRANSMISSIONS WITH THE AMATEUR RADIO STATION CALL SIGN "WA6GCY". A LOCAL AMATEUR RADIO OPERATOR HAS ACCUSED MR. McMILLAN OF OPERATING WITHOUT A LICENSE. THE CALL SIGN "WA6GCY" DOES NOT APPEAR IN THE CURRENT ISSUE OF THE "RADIO AMATEUR CALLBOOK". ANOTHER LOCAL AMATEUR RADIO OPERATOR SAID HE HAS SEEN MR. McMILLAN'S AMATEUR RADIO LICENSE. ON PAGE 384 IN THE MAY, 1981 GREATER OKLAHOMA CITY TELEPHONE DIRECTORY THERE APPEARS:

McMILLAN, RICHARD J., 2500 CRYSTAL, MOORE, OKLAHOMA ---- 799-7153

UNDER THE "FREEDOM OF INFORMATION" ACT, I WISH TO REQUEST ALL OF THE INFORMATION YOU ARE ALLOWED TO DIVULGE WITH RESPECT TO THIS AMATEUR RADIO STATION CALL SIGN AND THIS MAN'S AMATEUR RADIO OPERATING PRIVILEGES.

ALSO, WILL YOU PLEASE TELL ME, WHEN A CALL SIGN IS USED THAT DOES NOT APPEAR IN THE "CALLBOOK", WHAT IS THE PROPER AND CORRECT WAY TO DETERMINE WHETHER THE OPERATOR IS A "GOOD GUY" OR A "BOOTLEGGER"?

AND, IS TRANSMITTING RADIO SIGNALS, WITHOUT COMPLYING WITH LICENSE REQUIREMENTS, STILL A FELONY?

VERY SINCERELY,

C. Y. Chandler

C. Y. CHANDLER (WB5TKG)

FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

August 24, 1981

IN REPLY REFER TO:
22000

Mr. C. Y. Chandler
1833 N.W. 7
Oklahoma City, OK 73106

Dear Mr. Chandler:

Reference is made to your letter to Chairman Fowler wherein you request information concerning amateur radio station call sign WA6GCY and the amateur radio operating privileges authorized Mr. Richard J. McMillan. According to the records maintained by the Field Operations Bureau, call sign WA6GCY is not currently assigned and no record of amateur license issue to Mr. McMillan can be located.

In order that enforcement action in this matter may be properly pursued, request that you or any other amateur operator who has heard amateur radio transmissions by Mr. McMillan using call sign WA6GCY, file a formal written complaint with the Engineer in Charge, Dallas District Office, FCC, Earle Cabell Federal Building, US Courthouse, Room 13E7, 1100 Commerce Street, Dallas, Texas 75242.

Sincerely yours,

B. C. Duncan

for R. D. Lichtwardt
Executive Director

Club
NEWS

VISIT
The Most Active Ham Club

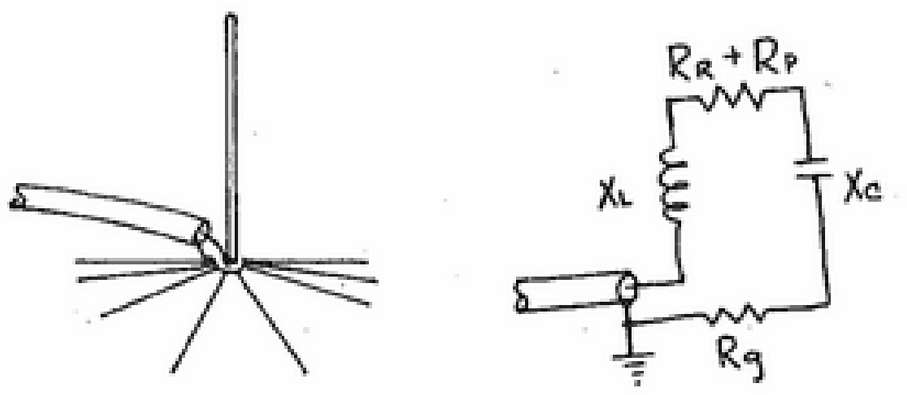
MINUTES OF AUGUST MEETING

There aren't any. The August meeting was replaced by the annual watermelon bash held in conjunction with the Aeronautical Center ARC. Watermelons were transported to Will Rogers park by Ellard, W5KE. Approximately 60 folks were there to enjoy the party. Joe, K5JB, Sec'y

GRIND, GROUND, GROUNDED - AN ABRASIVE SUBJECT

Hardly a magazine is published, particularlly one containing an article on antennas, or equipment safety, that doesn't contain some reference to equipment grounding, or grounding for some RF circuit purpose. We who live in an area of high probability of thunderstorms are acutely aware of the need to provide proper grounding for lightning protection. We all agree, I'm sure, that it is desirable to provide good ground connection between items of equipment for reasons of safety. The subject of grounding I thought might bear some discussion is that related to antenna circuits where earth ground acts as an active part of an antenna. The same thoughts on the subject also relate to grounding of equipment to eliminate the "hot microphone" syndrome. Since it is probably not covered in Bash's books, here goes.

What brought the subject to mind was a recent magazine article which contained the information that the writer had to drive a 40 foot ground rod to obtain a good earth connection! On 40 meters, 30 feet, or so, is a quarter wavelength. A ground 40 feet long is no more an RF ground as a strand of wet Johnson grass. Counterpoise, maybe, but ground, no. In reality, what the fella had was half of his antenna buried, and that don't make for such good efficiency. It might help to visualize an antenna circuit like shown in Figure 1 before we go into the heavy stuff.




Quarter Wave Ground Plane

Equivalent Circuit

Figure 1. Antenna Circuit Grounding

The quarter wave ground plane shown in the figure could be uhf, vhf, hf, or whatever, the principle being the same. The problem is more recognizable at hf because more amateurs experiment there. At vhf and uhf it is more common to "buy it and stick it up", besides, the ground plane is relatively small and is fabricated as part of the antenna anyway. The ground plane shown in the figure is about as real as the "free space radiation pattern". If one could pave a lot with sheet metal for a distance of ¼ wavelength radius from the base of an antenna, he could make some fair assumptions regarding the radiation resistance of his ground plane. No doubt someone has done that but the most elaborate effort usually attempted is to put a hundred or so wires in the soil, radiating from the base of the antenna. In the ordinary installation, the antenna circuit can be represented by the equivalent electrical circuit shown on the right side of Figure 1.

$X_l$ and $X_c$ are equal in magnitude and simply mean the antenna is being represented by a series resonant circuit. In a series resonant circuit, current is a maximum at resonance. The current through the resistor represented by $R_r + R_p$ is also maximum at resonance. $R_r$ is the radiation resistance, a concept that pretends that all the RF energy radiated is being dumped into a resistor. $R_p$ is a parasitic resistance caused by skin effect in wire, dielectric losses, etc. In a well designed antenna, $R_p$ is small. In a Hustler mobile whip $R_p$ is large. In a mobile installation, for example on 75 meters, radiation resistance may be 5 ohms. If the feedpoint impedance of a simple loaded whip without matching network approaches 50 ohms, there is a loss resistance somewhere totaling 45 ohms. Some of this is the $R_p$ in the coil and some is the $R_g$ shown in Figure 1. Power fed from the transmitter is divided between these resistances in proportion to the values of the resistances. In this example, one tenth of the transmitter power is fed to the radiation resistance and nine tenth is fed to the loss resistances. Efficiency is 10 percent. In this case, the signal will be 10 dB down from a 100 percent efficient antenna, which is impossible to have on a car anyway. Fifty percent efficient is probably a more reasonable goal on 75 meters.

At the fixed location, grounding is not so drastic a problem. The antennas are much bigger than an auto whip. Radiation resistance on 75 meters might range from 15 ohms on a trapped vertical to 35 ohms on a full quarter wavelength vertical. If a perfect ground plane can be assumed, and swr is measured to be near one, it is safe to assume losses in the coils of the trapped antenna are contributing the 35 ohms to add to the 15 to get 50. The ground plane can be more likely assumed to be less than perfect so part of that 35 ohms will be found in the ground connection. On the full sized quarter wavelength antenna there will be some loss from skin effect but it is a good bet that there will be a major loss from the ground connection. Without an antenna bridge, it is difficult to tell if swr other than one is caused by feedpoint impedance greater or less than the characteristic impedance of the transmission line. If someone told me he measured 1.5 to 1 on a quarter wavelength vertical made of aluminum tubing, I would bet the feed point impedance was about 75 ohms (if the measurement was made at resonance). About 35 ohms of this would be radiation resistance, the remaining 40 Ohms would probably be 10 ohms or less in the tubing and 30 ohms, or more, in the ground connection. In any case, I would consider this a pretty good antenna system (for a vertical). The loss would be only about 3 dB over a perfect antenna.

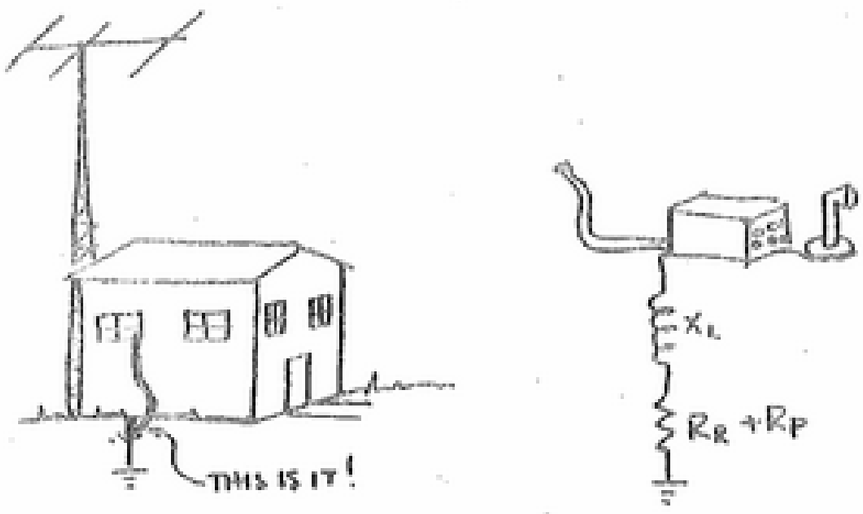
Where the real problem arises is where a loaded antenna 20 feet long is made to resonate on 75 meters. With a 50 ohm feedpoint impedance, about 35 ohms is sneaking around in the circuit somewhere soaking up two thirds of the transmitter output. With a mediocre ground consisting of a single ground stake, probably more than 80 percent of the rf is contributing to the discomfort of the resident earthworms.

Driving several ground stakes has two beneficial effects. Multiple ground leads divide the inductance like parallel resistors. Each ground stake creates another current path into the surface of mother earth. I doubt the effectiveness of salting the ground around a ground stake unless is is done for a considerable distance around the stake, perhaps a radius of 8 or 10 feet.

One way to avoid the problem of poor ground conductivity if one insists in using a vertical antenna, is to put up a half wave length antenna. Fred, W5NL, and I succeeded in doing that last fall on our trip to Pagosa Springs. We took advantage of some tall pine trees and put a top loaded half wave up and tuned it with a matchbox at the bottom. This is the only vertical hf antenna I ever used that worked as well as a dipole. With the thing voltage fed, current at the feedpoint was so small that any crummy ground was good enough. Feedpoint impedance was probably a couple of thousand ohms. With a couple of hundred ohms in the ground connection, it was no big deal. SWR was at least 40 so we had to use the matchbox!

RF grounding of equipment is another crazy subject where a lot of misteaks are made. Unless a ground wire is very short, it will have a high enough impedance to act like a choke and hardly any rf current will flow at all. The worst case is a quarter wavelength of wire. In fact, in some antenna and transmission designs, quarter wavelength components form "metal insulators". If it is more than 6 or 8 feet from a hot piece of equipment to the "earth ground" electrode, one might as well forget grounding as a cure for the "biting microphone" problem. It would probably be better, in that case, to eliminate the cause of the "hot equipment". In theory, one can tune the ground lead to series resonance by adding a suitable coil or capacitor. Multiple ground leads would be needed if the problem occurs on more than one band.

Figure 2 shows a typical "grounded" system with a ground wire running out a window to a ground stake. The ground stake can be perfectly connected to mother earth but unless the ground lead is very short, the circuit formed will resemble the equivalent circuit shown in the figure.




"Grounded" equipment  Equivalent circuit

Figure 2. Equipment Grounding

In the equivalent circuit, $X_1$ is the inductance of the ground lead. $R_r$ and $R_p$ are the radiation and parasitic resistances, respectively. They may be small compared to the inductive reactance of the wire and may be insignificant if the inductance is tuned out with a suitable capacitor to bring the ground lead to resonance. $R_r$ is the same radiation resistance of any antenna though and the ground lead will be radiating and adding to the field of the antenna, perhaps distorting the design pattern of the antenna. If this type of ground lead is intended to solve the "Hot Mike" situation, it may be effective in reducing the problem, but again, it would probably better to eliminate tha source of high RF voltage on the equipment.

Grounding for lightning control purposes should be handled differently. Ground leads should be direct from the air terminal (antenna) to the ground point. Large diameter wire should be run from the antenna to the ground without any sharp bends (unnecessary inductance). The ground should have less than 25 ohms resistance to mother earth. The National Electric Code gives all the details of fabricating suitable grounds and testing them. If someone wants more details, I would be glad to look them up. By the way, insurance coverage may depend on the grounding system meeting the National Electric Code, or local codes.

Grounding between equipment can be tricky sometimes. Safety grounding is not too difficult because almost any old wire will do. If there is a ground fault in equipment, any wire capable of conducting enough current to open a fuse or circuit breaker will be a suitable safety ground. If three wire plugs are used on all the equipment, no other safety grounds are needed. RF grounding is another story. I had one particularlly sensitive item of equipment that required two ground wires of different lengths to settle an audio problem down when operating the legal limit on hf. The cause of the problem was an untidy antenna installation but correction of the problem was like fixing a leaky roof, when it was time to call a net, there wasn't time to mess with the antenna. I just grabbed a bucket and put it under the leak.

One common cause of unwanted rf in the shack is unfortunate choice of feedline length and antenna layout creating highly efficient receiving antenna situations, with the equipment on the shack falling near a voltage loop. One favorite example is a 75 meter antenna fed with 60 feet of coax (stand by, this has nothing to do with pruning coax to lower the SWR, hi). One leg of such an antenna and the shield of the coax is half wavelength long. With such tight coupling, voltages and currents can be quite high at certain points. With a kilowatt fed to the antenna, about 1700 volts will appear on the ends of the antenna. If coupling is good and there is no control of the rf voltages on the equipment, similar voltage can appear on the microphone, creating a serious case of lip burn, to say the least! Of course, this kind of voltage will never appear in real life but the lips are sure sensitive to lesser amounts!

The most common solution to this kind of problem is to change the resonances of the antenna/transmission line system. A few turns of coax at the antenna feed point or a few feet added or removed from the transmission line will usually do the trick. One of the antenna manufacturers used to routinely advise about three or four turns be wound in a four or five inch circle and be taped to the boom of the antenna near the feed point. This is much better advice than adding a balun which may serve the same purpose, even if it is unnecessary for any other reason, on hf anyway.

Referring to the old wive's tale of pruning the coax to lower the SWR, or using the "proper" length of coax, I feel that this myth was started partly by the phenomenon of certain SWR bridge designs being sensitive to rf voltages present on the outside of the coax, and thus, on the case of the instrument. No the voltage on the inside is not necessarily the same as the voltage on the outside of the coax. That's the neat reason for its invention. The same effect that causes the spurious responses of this type of instrument is what causes all the grief in the shack.

When it is impossible to reach ground from the equipment location, the concept of the counterpoise can be applied. In an apartment, for example on the tenth floor, ground is too far away to be of any use except for lightning protection, as already noted. A piece of wire draped out the window can act as a virtual ground by virtue of the radiation resistance it represents. Usually, a quarter wavelength wire is used as a counterpoise. Its radiation resistance is low, compared to no ground at all, and it will serve the purpose of stablizing the rf voltage on the equipment. Counterpoises are used as active part of antennas when it is not possible to obtain a ground in any other way. Since considerable amount of current can flow in a counterpoise if the driving source is low impedance, radiation from the thing can be considerable. If one is being used to stablize nuisance voltages on equipment, driving impedance is probably low, and resulting radiation will probably be low. A separate cointerpoise is needed for each band, except where odd harmonics are involved and the thing can be operated as a 3/4, 5/4, etc. wavelength mode. Simplest thing I ever did in this regard was tie a wire to a fishing sinker and adjust the length as necessary to match the band of operation. One time I ran several wires around in a motel room to form the counterpoise. One was attached to the commode, one to a convenience outlet ground and one left lying on the floor, extending to the far corner of the room. If the antenna being used os voltage fed, the ground can be pretty casual, as illustrated in Fred and my experiment with the half wave vertical.

Well this turned out to be a lot of rambling about a rather mundane subject but perhaps it might provoke some thought. I would like to hear some experiences we could add to the fountain of knowlege on these monthly scribbles in the C&E.  Joe, K5JB

Which Type? - Who Cares?

As one might guess, I am still playing with different type styles in my new typewriter. Majority of opinion was that the orator type was easiest to read. A couple of you, whose opinion I value, expressed a dislike of text typed in all caps, but one person said the orator was easy to read even though it was all caps. I think it may be because that particular type has no serifs to clutter. This type ball is a letter gothic, same as one owned by Joe, WA5ZNF. He uses his at 10 characters per inch which is not the correct pitch for the type ball, so I thought I would try it this month and see how it prints in the final form on the newsprint. It has no serifs and it could be USED IN ALL CAPS IF THERE WAS ANY ADVANTAGE. IT IS NOT AS BOLD AS THE ORATOR THOUGH. The orator type is the same as used on teletype machines, and I think that is why I like it.

The rest of this months material will be typed in the orator style because I have to return this type ball to the office from whence it was borrowed. OR I'M GONNA BE IN A LOT OF TROUBLE WITH A SECRETARY I KNOW, HI.
Joe, K5JB

A COMPLICATED MATCHING HARNESS

SEVERAL YEARS AGO, OR SHOULD I BEGIN WITH ONCE UPON A TIME?, WHEN THE 34/94 REPEATER WAS GOING UP AT THE SUNNYLANE SITE, I TOOK THE OPPORTUNITY TO MEASURE THE COAX CABLE HARNESS USED ON THE DB-224 ANTENNA. I THOUGHT THAT IF I WAS EVER GOING TO MAKE SUCH AN ANTENNA, THE DETAILS MIGHT BE HANDY TO HAVE. LATER, IN THE

ARRL FM AND REPEATERS HANDBOOK I FOUND ESSENTIALLY THE SAME INFORMATION. FIGURE 1 CONTAINS A SKETCH OF THE HARNESS IN THAT HANDBOOK.

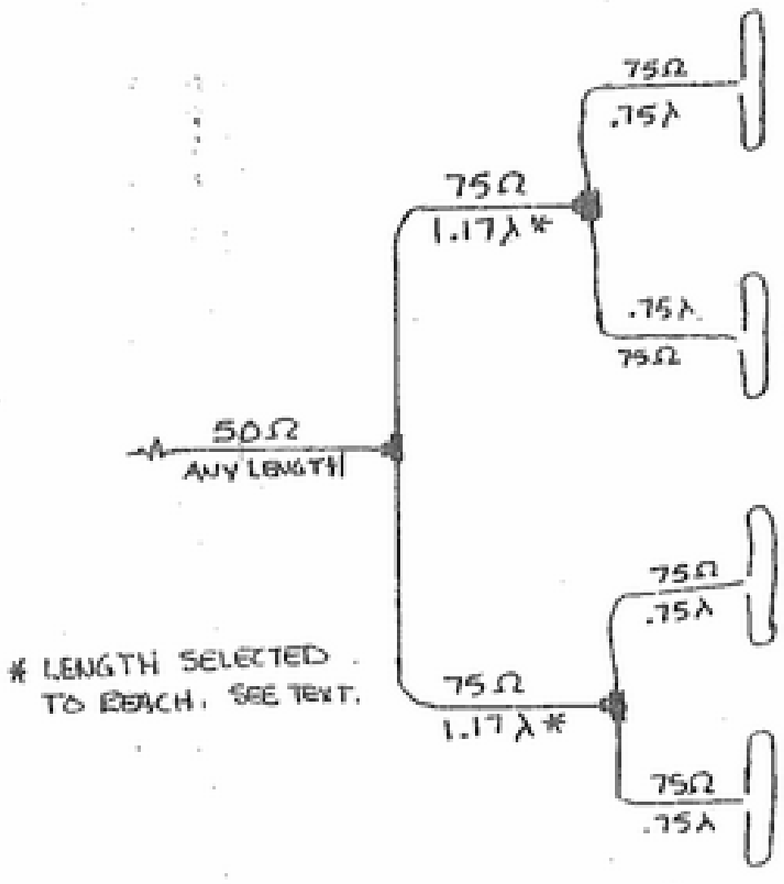



FIGURE 1. PHASING HARNESS

AS I REMEMBER IT, THIS DESIGN WAS PRETTY CLOSE TO THE HARNESS IN THE DB PRODUCTS ANTENNA. RECENTLY, WHILE REPAIRING A DB-264 ANTENNA, I MADE A DISCOVERY THAT REALLY MADE ME SCRATCH MY HEAD. THE HARNESS IN THIS ANTENNA WAS MUCH MORE COMPLEX, HAVING MANY JOINTS AND VARIOUS TYPES OF COAX CABLE. FIGURE 2 SHOWS THE HARNESS IN THIS ANTENNA. THE LENGTHS IN FRACTIONS OF WAVELENGTHS, ARE BEST GUESS, USING VELOCITY FACTOR OF .67 FOR THE STUFF. NO, I DON'T TEAR STUFF UP JUST TO LOOK AT IT...THE COAX WAS BROKE AND I HAD TO SPLICE IN A NEW PIECE!

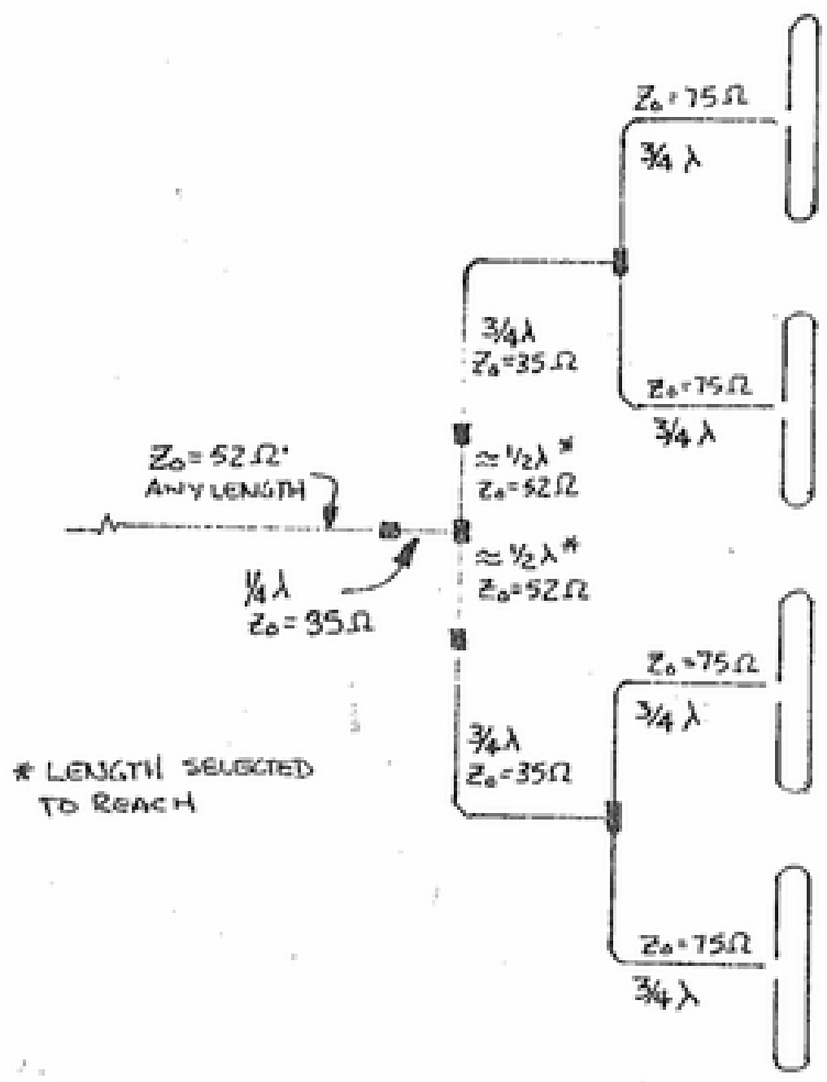



FIGURE 2. DB-264 PHASING HARNESS

WITHOUT GOING INTO ALL THE SMITH CHART GYRATIONS IT TOOK TO REALLY NOODLE OUT THE THING, AN EXPLANATION IS PRETTY CLOSE TO CORRECT BY USING THE OLD "Q-SECTION" EQUATION:

$$Z_0^2 = Z_1^2 + Z_2^2 \quad \text{OR} \quad Z_0 = \sqrt{Z_1 + Z_2}$$

WHERE $Z_0$ IS THE CHARACTERISTIC IMPEDANCE OF A QUARTER WAVE LENGTH PIECE OF TRANSMISSION LINE AND $Z_1$ AND $Z_2$ ARE THE IMPEDANCES ON EACH END OF THE THING, RESPECTIVELY. THE "Q-SECTION" IS A VERY COMMON ANTENNA GADGET USED ALMOST EVERY TIME POWER IS TO BE DIVIDED TO TWO OR MORE ANTENNAS, PAIR OF STACKED "ELEVENS", FOR EXAMPLE. ANOTHER FACT TO REMEMBER IS THAT WHATEVER IMPEDANCE IS PRESENTED TO A POINT ON A TRANSMISSION LINE IS REPEATED AT HALF WAVELENGTH INTERVALS UP AND DOWN THE LINE, LOSSES NEGLECTED, THAT IS.

STARTING FROM THE ANTENNA CONNECTION OF ONE OF THE ENDS, THE 3/4λ SECTION OF 75Ω COAX TRANSFORMS THE ANTENNA IMPEDANCE OF APPROXIMATELY 108Ω TO 52Ω . THE TWO SECTIONS OF 75Ω COAX COMBINE TO PRESENT AN IMPEDANCE OF 26Ω TO THE NEXT SECTION. THE 3/4λ SECTION OF 35Ω COAX (RG-83) TRANSFORMS THE 26Ω TO 47Ω. THE SECTION OF 52Ω COAX IS LONG ENOUGH TO MAKE THE TOP AND BOTTOM HALVES REACH THE JUNCTION. THE TWO 47Ω LOADS COMBINE TO FORM A LOAD OF 23Ω WHICH IS TRANSFORMED BY THE ¼λ SECTION OF 35Ω COAX BACK UP TO 52Ω.

IF THAT SEEMED LIKE A BIT OF A QUICK EXPLANATION, IT WAS. IN REALITY, A LOT OF THOUGHT WENT INTO DESIGN OF THAT MESS OF COAX. THE BANDWIDTH OF THE ANTENNA IS TEN MEGAHERTZ. A SENSITIVITY ANALYSIS OF THE LENGTHS OF COAX SHOWED THAT THEY WERE CHOSEN TO CANCEL REACTIVE EFFECT WHICH IS MULTIPLIED WHEN 3/4λ OR LONGER SECTIONS ARE OPERATED OFF FREQUENCY.

IN ORDER TO VERIFY MY ASSUMPTIONS AND TEST THE REPAIR OF THE HARNESS, DUMMY LOAD RESISTORS WERE ATTACHED TO THE ANTENNA TERMINALS AND THE THING TESTED WITH A DIRECTIONAL WATTMETER. I WAS HANDICAPPED A LITTLE BY THE DESIGN FREQUENCY BEING 160 MHZ AND NOT HAVING A SUITABLE TRANSMITTER TO PERFORM TEST AT THAT FREQUENCY. THE SMITH CHART CAME IN HANDY FOR PERFORMING CALCULATIONS AT 147 MHZ AND DEALING WITH ALL THE REACTANCES WHICH DEVELOPED BECAUSE THE HARNESS WAS TO BE OPERATED OFF FREQUENCY.

AT THE LOWER FREQUENCY, THE THREE QUARTER WAVELENGTH SECTIONS SHORTEN TO .69 WAVELENGTH. A HUNDRED OHM LOAD RESISTOR ATTACHED TO EACH ANTENNA PORT RESULTS IN A FEED POINT IMPEDANCE OF 65.8 -j17.5, OR 68 OHMS. SWR COMPUTES TO BE 1.3 AND MEASURED SWR IS 1.4, WHICH IS PRETTY CLOSE FOR AMATEUR RADIO PURPOSES.

FOR WHAT IT IS WORTH, SINCE THE ANTENNA ELEMENTS ARE SHORT FOR TWO METER OPERATION, THE MEASURED SWR, WITH THE ELEMENTS CONNECTED, IS 1.8. BY THE TIME THE FEED LINE IS CONNECTED, THE EQUIPMENT DOESN'T KNOW ANY DIFFERENT AND THE THING WORKS QUITE WELL, AS THE TESTIMONY IN LAST MONTS'S COLUMN INDICATES.

RETURNING TO THE DESIGN IN FIGURE 1, HERE IS A CASE OF A LITTLE KNOWLEGE BEING A DANGEROUS THING. MY ANALYSIS OF THAT HARNESS SHOWS IT PROBABLY WOULDN'T WORK VERY WELL BUT THAT GOES TO SHOW YOU WHAT I KNOW ABOUT IT! IT MUST WORK OR IT WOULDN'T BE IN THE HANDBOOK, RIGHT? FIFTY TWO OHMS PRESENTED TO THE FEEDPOINT RESOLVES INTO 42.9 +j12 AT AN ANTENNA CONNECTION. SOMEHOW I CAN'T BELIEVE THE FEED POINT IMPEDANCE IS THAT LOW, NOR THAT IT IS AN INDUCTIVE LOAD, SINCE THE ANTENNA ELEMENTS ARE SHORTER THAN HALF WAVE LENGTH BY A TAD. OH WELL, THE ARTICLE IN THE HANDBOOK SAYS A NUMBER HAVE BEEN BUILT WITH EXCELLENT RESULTS SO MAYBE IT IS DONE WITH MIRRORS.

FOR WHAT IT IS WORTH, A SIMPLE APPLICATION OF Q-SECTIONS THAT IS QUITE COMMON, ONCE UNDERSTOOD, WILL MAKE IT EASY TO REMEMBER THE PRINCIPLE. A QUARTER WAVELENGTH OF 75 OHM COAX HAS THE PROPERTY OF TRANSFORMING 52 OHMS TO 108 OHMS. IF TWO ANTENNAS WITH 52 OHM FEEDS ARE TO BE FED SIMULTANEOUSLY, A QUARTER WAVELENGTH OF 75 OHM COAX IS CONNECTED TO EACH. THE OTHER ENDS ARE TIED TOGETHER IN PARALLEL AND THE 108 OHM LOADS COMBINE TO FORM A LOAD OF 54 OHMS. NOT BAD, EH? IF THE ANTENNAS ARE TOO CLOSE TOGETHER WITH SUCH AN ARRANGEMENT, THREE QUARTER WAVELENGTH SECTIONS CAN BE USED AT A LITTLE SACRIFICE IN BANDWIDTH. THIS IS PROBABLY A NEATER ARRANGEMENT THAN SPLICING IN SECTIONS OF 52 OHM COAX TO MAKE IT REACH. A "SERIOUS" VHR'ER WOULD MAKE POWER DIVIDERS OUT OF TUBING TO TAKE ADVANTAGE OF LOWER LOSS OF AIR DIELECTRIC, BUT FOR THE REST OF US, ORDINARY COAX WORKS FINE. JOE K5JB

## A FAILURE MODE ANALYSIS - A PNP POPPER

A POPULAR CIRCUIT USING THE 555 TIMER IS THE "MISSING PULSE DETECTOR" SHOWN IN FIGURE 1. IT, AND ITS VARIATIONS, ARE USED WHEN IT IS DESIRABLE TO HAVE A RESETTABLE TIMER. IT IS USEFUL IN REPEATER TIME OUT TIMERS AND ANTI-FALSING CIRCUITS, FOR EXAMPLE.

RECENTLY I HAVE HAD OCCASION TO ANALYZE TWO CIRCUITS IN WHICH THE PNP TRANSISTOR FAILED. TOM, K5LDI, HAD PREPARED A CONTROL CIRCUIT FOR REMOTE CONTROL OF A TAPE RECORDER AND DURING THE "SHAKE DOWN", THE PNP TRANSISTOR FAILED. THE SECOND FAILURE OCCURED ON A CONTROL CIRCUIT IN A TWO METER TO UHF LINK AT MY HOUSE. WHAT HAPPENED WAS AN OVERSIGHT REGARDING A COMMON CHARACTERISTIC OF TRANSISTORS COUPLED WITH AN UNCOMMON TRANSISTOR.

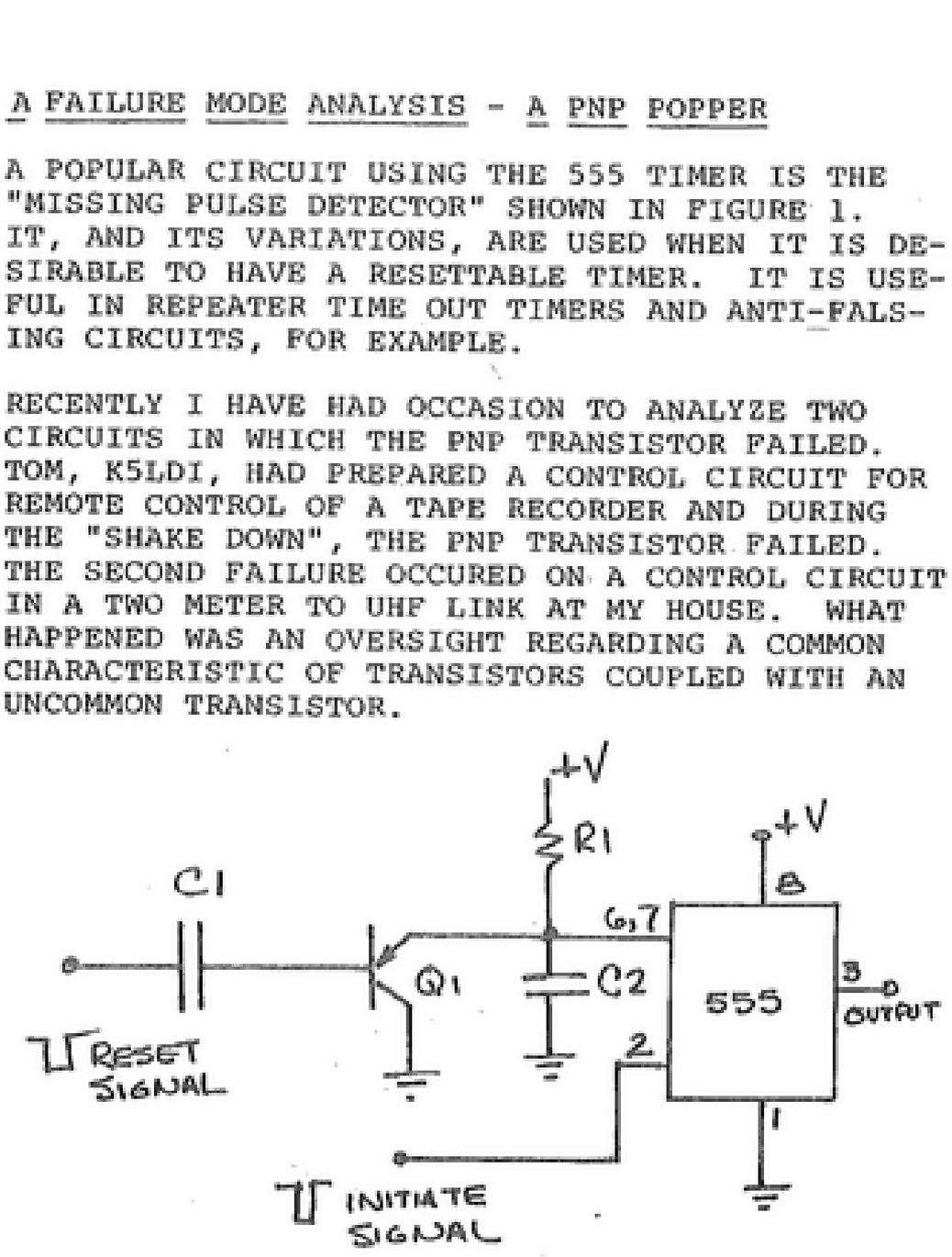



FIGURE 1. MISSING PULSE DETECTOR

THE CIRCUIT WORKS THUS: WHENEVER A LOW GOING VOLTAGE IS PLACED ON CAPACITOR C1, TRANSISTOR Q1 IS PLACED INTO CONDUCTION. IF THERE IS ANY VOLTAGE ON CAPACITOR C2, IT WILL BE BLED THROUGH THE TRANSISTOR TO GROUND. IF NO PULSES APPEAR ON C1 BEFORE THE CHARGE ON C2 REACHES 2/3 OF THE VOLTAGE ON PIN 8 OF THE 555, THE OUTPUT OF THE TIMER WILL GO TO A LOW VALUE. THE INITIATE SIGNAL SHOWN GOING TO PIN 2 IS SEPARATED FROM THE RESET SIGNAL AFFECTING PINS 6&7 SO THE SEPARATE FUNCTIONS CAN BE SEEN A LITTLE MORE EASILY. REMEMBER THAT A 555 IS TRIGGERED BY A SIGNAL OF LESS THAN 1/3 THE SUPPLY VOLTAGE APPEARING ON PIN 2. IT IS RESET BY THE VOLTAGE ON PIN 6 GOING ABOVE 2/3 SUPPLY VOLTAGE. WHEN TRIGGERED, OUTPUT PIN 3 GOES HIGH AND WHEN RESET IT GOES LOW.

OK, SO WHAT GOES WRONG? TAKE THE FOLLOWING SEQUENCE OF EVENTS. THE 555 IS TIMED OUT. THE VOLTAGE ON CAPACITOR C2 IS ZERO. THE VOLTAGE ON THE EMITTER OF Q1 IS, THEREFORE, ZERO. THE VOLTAGE ON THE COLLECTOR OF Q1 IS, OF COURSE, ZERO. WHAT IS THE VOLTAGE ON THE BASE OF Q1? WHO KNOWS? IN THE CIRCUIT SHOWN, THERE IS NO WAY TO KNOW UNTIL THE RESET SIGNAL HITS. WHEN IT DOES, THE NEGATIVE GOING EDGE OF THE RESET SIGNAL, COUPLED BY C1, APPEARS ON THE BASE OF Q1, CAUSING IT TO START TO GO MORE NEGATIVE. IT WILL ONLY GO ABOUT .7 VOLTS MORE NEGATIVE THAN THE EMITTER BECAUSE OF THE FORWARD CONDUCTION OF THE EMITTER-TO-BASE JUNCTION OF THE TRANSISTOR. FOR THE DURATION OF THE RESET SIGNAL, C1 CHARGES UNTIL THE DIFFERENCE BETWEEN VOLTAGES ON THE BASE OF Q1 AND THE RESET INPUT APPEARS ON C1. AT THE POSITIVE EDGE OF THE RESET PULSE, THE SIGNAL IS COUPLED THROUGH THE CAPACITOR C1 TO THE BASE OF THE TRANSISTOR CAUSING ITS VOLTAGE TO RISE UNTIL SOMETHING INTERESTING HAPPENS. IF THE EMITTER OF THE TRANSISTOR IS NEAR ZERO, IN FACT, EXACTLY ON ZERO IF THE 555 HAS TIMED OUT, THE VOLTAGE ON THE BASE WILL ONLY GO TO 5, 6, OR, MAYBE 7 VOLTS AND THE BASE TO EMITTER JUNCTION GOES INTO AVALANCHE (LIKE A ZERER DIODE). A TUG OF WAR BEGINS BETWEEN C1 AND C2 WITH THE LARGER OF THE TWO LOSING THE BATTLE FOR AVAILABLE VOLTAGE. IF NEITHER CAPACITOR IS LARGE, THE AMOUNT OF ENERGY DISSIPATED BY THE TRANSISTOR JUNCTION IS INSUFFICIENT TO CAUSE ANY TROUBLE. HOWEVER, IF THE CAPACITORS ARE FAIRLY LARGE, PARTICULARLY C1, THE TRANSISTOR WILL TAKE QUITE A BEATING. COINCIDENCE NUMBER TWO: PNP SILICON TRANSISTORS CAN'T TAKE MUCH OF A BEATING.

THE SOLUTION IS FAIRLY SIMPLE. REDUCE THE PEAK ENERGY CONTENT OF THE PULSE CAUSING THE TRANSISTOR TO AVALANCHE. IN TOM'S CIRCUIT, I BELIEVE HE ADDED A RESISTOR BETWEEN THE CAPACITOR AND THE BASE OF THE TRANSISTOR. IN MY CIRCUIT, I REPLACED THE TRANSISTOR WITH AN NPN AND INVERTED THE POLARITY OF THE RESET SIGNAL COMPLETELY ELIMINATING THE PROBLEM OF AVALANCHE. SEE FIGURE 2.

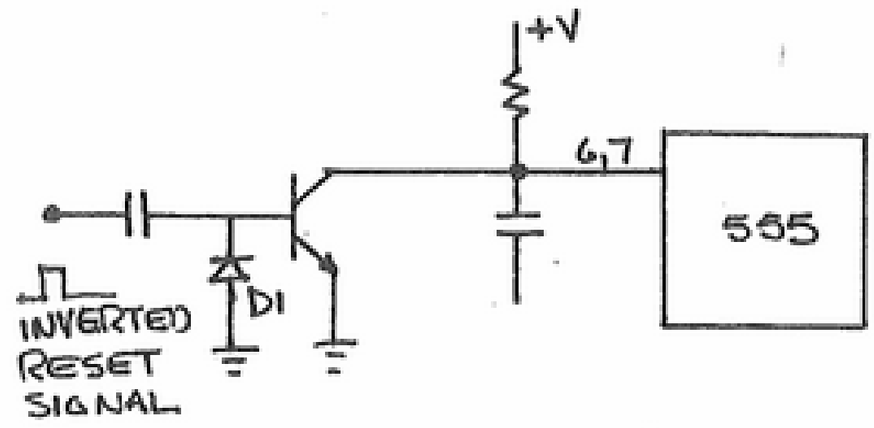



FIGURE 2. RESETTABLE TIMER - REVISED

DIODE, D1, WAS ADDED TO PREVENT AN AVALANCHE IN THE NPN TRANSISTOR. ON THE NEGATIVE EDGE OF THE RESET SIGNAL, THE CHARGED CAPACITOR WILL DUMP ITS CHARGE INTO D1 RATHER THAN THE EMITTER-BASE JUNCTION OF THE TRANSISTOR. THE CIRCUIT IN FIGURE 1 CONTAINED A SIMILAR DIODE BETWEEN THE TRANSISTOR BASE AND THE POSITIVE SUPPLY VOLTAGE SOURCE BUT IT WAS INEFFECTIVE IN PREVENTING THE PROBLEM.

IT SHOULD HAVE BEEN MENTIONED EARLIER THAT THE SUPPLY VOLTAGES ON THESE CIRCUIT WERE IN THE ORDER OF 12 VOLTS BECAUSE THEY WERE ASSOCIATED WITH CMOS CIRCUITRY. IN THE APPLICATION NOTES, 5 VOLTS IS USUALLY SPECIFIED AND THE AVALANCHE PHENOMENON WOULD NEVER BE A FACTOR.

FOR WHAT IT IS WORTH, YOU CAN ADD TOM AND MY EXPERIENCE TO YOUR VAST STOREHOUSE OF USELESS INFORMATION. I'LL BET WE LEARNED SOMETHING ANYWAY. JOE, K5JB

## NEVER ASSUME THE OBVIOUS - A FOOTNOTE

STEVE STEPHENSON, N5DEC, LONE OAK TX, WROTE FOR MORE INFORMATION ON THE SON OF VOX-IN-A-BOX ARTICLE ON PAGE 28 OF THE AUGUST C&E. HE REQUESTED MORE INFORMATION ON THE 5558 DUAL OP-AMP USED FOR THE VOX. THE 5558 IC, LIKE THE 555 IS A FAIRLY COMMON DEVICE AND IT HAD NOT OCCURRED TO ME TO 'SPLAIN MYSELF.

555 TIMERS MADE BY SIGNETICS ARE ACTUALLY SE555T IN THE INDUSTRIAL VERSION, 8 PIN, ROUND METAL PACKAGE, NE555T IN THE CONSUMER VERSION, SAME PACKAGE, SE555V IN THE INDUSTRIAL GRADE, 8 PIN MINI-DIP PACKAGE, AND, NE555V IN THE CONSUMER GRADE, SAME PACKAGE. THE LATTER IS THE ONE FOUND IN VAST MAJORITY OF APPLICATIONS WE MIGHT EXPERIENCE.

5558 IS A DUAL OP-AMP CONSISTING OF TWO 741 TYPE OP-AMPS IN ONE PACKAGE. SIGNETICS CALLS THEIRS N5558V IN THE COMMON VARIETY PLASTIC MINI-DIP 8 PIN PACKAGE. MOTOROLA CALLS IT MC1458G. NATIONAL CALLS IT LM1458N. RADIO SHACK JUST CALLS IT 1458. ALL EXCEPT RADIO SHACK HAVE VARIOUS PACKAGES AND GRADES, I SUPPOSE. IN ANY CASE, I'LL TRY TO BE MORE CAREFUL IF I THINK SOMEONE IS REALLY GOING TO TRY TO BUILD SOME OF THIS CRAZY STUFF. THANKS TO N5DEC FOR REMINDING ME. JOE, K5JB

WANTED: TRANSMITTER AND RECEIVER, OR TRANSCIEVER SUITABLE FOR NOVICE OPERATION. PRICE SHOULD BE COMMENSURATE WITH AN AIRMAN'S BUDGET. MIKE SCHENKEL, W5VXU, IS KEEPING HIS EYE OUT FOR EQUIPMENT FOR A NEW NOVICE. MIKE CAN BE CONTACTED EVERY NIGHT AT 5:45 PM ON THE OKLA TX & WX NET, 3900 kHz, OR PASS IT ON TO ME AND I'LL CONTACT HIM. JOE, K5JB

CHOCTAW ARC

SEPTEMBER MEETING

The Choctaw club meeting for September was held at Mama Lea's restaurant in Harrah. The general consensus of the thirty four people who were present was that the food was pretty good. A few who had the mexican plate grumbled 'cause they couldn't figure out what all was in it but the few who partook in the hot apple cobbler looked pretty satisfied. If Don, K5SJV, Sue, N5CTT, Bob, W5EVP, and Roy, W5OXX, look like they have put on a few pounds, I can testify that the hot apple cobbler did it.

Don, K5SJV, Sue, N5CTT, and Joe, K5JB know how to mix chow with hamming as they joined the dinner meeting as guests. Welcome back folks!

Conspicuously absent were Richard, KA5OLO, and Al, WB5OHK. Everybody missed 'em.

Phil, KC5JJ, and his wife Pat, just returned from a trip to the state of Maine where they attended a family reunion. It took them four days to get there and they found the weather was good. Phil took his 2M and HF rigs along and enjoyed some mobile operation. On the return trip, while operating on 15 meters, he happened to run across W1DIS who was on the same telephone exchange as Phil's mother. He chatted with her, via phone patch all the way to his driveway in Harrah.

Ladd, W5FX, in a continuation of his series of talks about the firmament, handed out copies of star charts and explained how to use them. He did a pretty good job when one considers the competition from the hot cobbler. Thanks a bunch Ladd!

...and that's the way it was, as best I can remember it. Serena, N5BEP, Sec'y

A MOTHERS PRAYER IN THE MORNING

Thank you Lord, for this glorious day.
Bless the carpet beneath my feet and the bombardment of hot and cold water that freshens my waking skin.
Bless the breakfast I am cooking for my family, and the special music of morning around me...doors banging, the clatter of forks and plates, the rattle of lunch boxes, children demanding "mother!"
Thank you for my healthy, available presence that is able to cope with them.

Bless the husband who provides all this. Be with him as he sets off for work; fill him with a sense of his own worth and achievement, enrich and enliven his day.
Bless the school busses and their drivers, let them transport our children safely.
Bless the teachers and that marvelous institution that claims my offspring for the important hours. Please let them be good there, happy there, bright and able to grasp the lessons there, and oh, thank you that they're well enough to be there.
Now bless this quiet house...even its confusion and disorder which speaks so vividly of its quality of life. Thank you that I have the time and strength to straighten it.
And thank you for the freedom to sit down with a cup of coffee before I begin.
from "I've Got To Talk To Somebody"

NEXT MONTH

Because of Columbus day, date for next month meeting is not set yet. Announcement will be made on Nite Owl Net. Ladd, W5FX, will continue in his series of talks on time and space and the details of the Batfish operation in November will be firm. Serena, N5BEP



LEONARD HOLLAR, WA5FSN
SECTION COMMUNICATIONS MANAGER

Preparing this column for the October Collector-Emitter, brings to mind that October is the time for the annual Texoma Hamarama to be held this year on Oct. 30-31 & Nov. 1.

I have been advised that Tommy Rodgers, WB5UKI, President and Jim Haynie, Vice-President of the Hamarama Association have resigned after having served lass than a year. Ted Heithecker, W5EJ is acting President until the annual meeting of the Hamarama Association is held at the Hamarama. Carrol Smith, K5DM and myself have been appointed to fill out the unexpired terms (2 yrs) of the gentlemen resigning. During the annual meeting 4 directors will be elected to replace or reelect Ted Heithecker, W5EJ; Barney Moffatt, W5CJZ; Dr. Jim Ewing, WB5BPK and Raymond Willis, W5ATO whose terms expire this year.

I feel that it behooves all Oklahoma members of the Assaciation to be present and make themselves heard. We need these fine Oklahoma Gentlemen reelected to the board. In addition to these previously named, the Board consists of Rollie Terrill,W5RC, Joe Blair, N5WB; Frank Salvato,K5BTT; Henry Winans, W5KNY; Tom O'Brien, WB5LWB; Jack Gant, W5GM and Jeanine Dollar, WB5JZU.

Incidentally, Preregistration forms have been mailed to all on the mailing list and should be in your hands at this time.

Now on a more local thought. It is time for the annual Simulated Emergency Test. It is time to get something in the way of an interesting exercise planned and executed Don't forget to include your local C.D. and Red Cross in your plans. Then when it is all over, hold a critique and make the report to ARRL HQ. We have been lax in this in thepast.

It is my pleasure to repeat the announcement that Bennett Basore, W5ZTN has accepted the appointment as S.E.C. for Oklahoma. Section.

Net activity looked better for August. We regret the resignation of Ralph,WD5IRB as N.M. for the O.F.O.N. We hope he will be able to be back with us soon.

August Nets.

| Net | Sessions | QNI | QTC | WX |
|---|---|---|---|---|
| O.F.O.N. | 21 | 306 | 22 | |
| Sooner | 26 | 360 | 76 | |
| O.T.W.N. | 26 | 406 | 305 | 282 |
| O.L.Z. | 31 | 184 | 67 | |
| O.N.O.N. | 24 | 788 | 90 | |
| Q.C.W.A. | 5 | 173 | 8 | |
| O.P.E.N. | 5 | 266 | 18 | |

See you all on the air during S.E.T and in person at Texoma.

Leonard Hollar WA5FSN

FOR SALE:
Swan 350 "D" Digital HF Transceiver, Mint, with DC power module..$299.00..KØAYS, Charles Frodsham...348-7682.

**BICENTENNIAL AMATEUR RADIO CLUB**

*"To Promote Radio Communications"*

Sponsored by Oklahoma Air National Guard
ARRL affiliated

MINUTES

The informal session of the Bicentennial Amateur Radio club for September business was called to order on the 8th at 7:08 pm with 24 members and 1 guest present. In lieu of a quorum the group discussed same as a problem and possible solutions until 7:21 at which time we broke up for refreshments.

The club reconvened at 7:41 for the program courtesy of KTVY thru Jerry N5ABF and Mark WD5DYI: a 30-minute tape of Channel 4's outtakes.

At 8:15 it was determined that we had acquired a quorum necessary for the transaction of business "affecting the club." The meeting was called to order with 28 members and 3 guests present.

The minutes were approved as published in the September issue of the Collector and Emitter (C&E). These covered the August meeting, the first in three months with a quorum.

The report of the treasury was accepted as presented by the Treasurer, Joe WD5BMP, who was presented with a club computer roster dated September 1981.

A motion was made, seconded and passed that all members on record who had joined since April 1981 without application to the club for membership be formally accepted in full membership with all privileges and responsibilities thereto. There was one no vote.

In accordance with procedures outlined in the Constitution, the Amendment proposed at the August meeting and published in the September '81 C&E was brought from the table and passed. This Amendment changes Article IV of the Constitution to read: The By-Laws shall provide for regular and special meetings. At meetings, any number present of the membership shall constitute a quorum for the transaction of business (change under--lined; formerly read "one-third."). Hopefully, an up-to-date copy of the Constitution and By-Laws will be found elsewhere in this C&E. (ED. NOTE: see next column!)

The businees meeting then converted to a "Committee of the Whole" for the purpose of developing a slate of nominees for next year's officers to be elected at the October meeting, on the 13th. Nominees will also be requested from the floor in addition to the following:

President: WD5JNT, N5BEQ
Vice-President: N5AUH, WD5JNT
Treasurer: WB5TMW, WA5RAQ
Secretary: KC5CR, N5BFD
Activities Manager: WA5HTL, K9JTW

The club then adjourned the meeting at 8:50 pm.

Next meeting will be final nominations and election of officers for the coming year, Tuesday, October 13, 1981, 7:00 pm.

Jim, N5BEQ
Secretary

Now, if I may be permitted: I wish to express by sincere gratitude and affection to the Bicentennial Amateur Radio Club for two of the most-enlightening and interesting years I have ever spent, those as Secretary of this fine organization of beautiful people. No buts, it's just time for someone else to enjoy this rewarding duty and spread the work around. I' ll leave you with the following:

AGE SAGE: HOW TO KNOW WHEN YOU'RE GROWING OLDER or IS THERE REALLY LIFE AFTER 40 ? : IF YOU STOP LOOKING FORWARD TO YOUR NEXT BIRTHDAY.

jim, n5beq

BICENTENNIAL AMATEUR RADIO CLUB

CONSTITUTION

PREAMBLE: Wishing to secure for ourselves the pleasures and benefits of the association of others interested in Amateur Radio, we constitute ourselves the BICENTENNIAL AMATEUR RADIO CLUB (the SEVENTY-SIXERS) and enact this constitution as our governing law. It shall be our purpose to further exchange of information and co-operation between members, promote radio knowledge, fraternalism and individual operating efficiency, and conduct club programs and activities to advance the general interest and welfare of Amateur Radio.

ARTICLE I

MEMBERSHIP: All persons interested in radio communication (without pecuniary interest) shall be eligible for membership. Membership shall be by application and election as directed in the By-Laws.

ARTICLE II

OFFICERS: Sec.1 - The officers of this club shall be: President, Vice-President, Secretary Treasurer and Activities Manager.
Sec.2 - The officers of this club shall be elected for a term of one year by ballot of the members present at the October meeting.
Sec.3 - Vacancies occuring between elections must be filled by special elections at the first regular meeting following the withdrawal or resignation.
Sec.4 - Officers may be removed by a three-fourths vote of the membership.

ARTICLE III

DUTIES OF OFFICERS: The President shall preside at all meetings of this club and conduct the same according to the rules adopted. He shall enforce due observance of this Constitution and By-Laws; decide all questions of order; sign all official documents that are adopted by the club, and none other; and perform all other customary duties pertaining to the office of President.
Sec.2 - The Vice-President shall assume all the duties of the President in the absence of the latter and assist the Activities Manager in preparing programs.
Sec.3 -The Secretary shall keep a record of the proceedings of all meetings, keep a roll of members, submit applications for membership, carry on all correspondence, read communications at each meeting and mail written notices to each member. He shall at the expiration of his term turn over all items belonging to the club to the successor.
Sec.4 - The Treasurer shall receive and receipt for all monies paid to the club; he shall keep an accurate account of all monies received and expended. He shall pay no bills without proper authorization (by the club or its officers constituting a business committee). At the end of each quarter he shall submit an itemized ststement of disbursements and receipts. He shall at the expiration of his term turn over everything in his possession belonging to the club to the successor.
Sec.5 - The Activities Manager shall organize club member activities, plan and recommend contests for operating benefit and advance club interest and activity as approved by the club. He shall encourage new stations in reporting activities to the club. His main objective is to keep a reputation of the club and radio avtivities in the community as outstanding as possible. He may appoint committees or assistants to aid him in specific branches of activity.

ARTICLE IV

MEETINGS: The By-Laws shall provide for regular and special meetings. At meetings, any number present of the membership shall constitute a quorum for the transaction of business.

ARTICLE V

DUES: The club, by majority vote of those

present at any regular meeting,may levy upon the general membership such dues or assess-- ments as shall be deemed necessary for the business of the organization within its objectives as set forth in the PREAMBLE. Non-payment of such dues or assessments shall be cause for expulsion from the club within the discretion of the membership.

ARTICLE VI

MEMBERSHIP ASSISTANCE: This club shall make every effort to minimize interference in operation between stations of its members. The club, through designated INTERFERENCE, PUBLIC RELATIONS and OPERATING COMMITTEES will provide technical advice to members concerning equipment design and operation to assist in frequency observance, clean signals, uniform practice, and absence of spurious radiations from club member stations. The club shall also maintain a program to foster and guide public relations.

ARTICLE VII

AMENDMENTS: This Constitution or the By-Laws may be amended by a two-thirds vote of those present. Proposals for amendments shall be submitted in writing at a regular meeting and shall be voted on at the next following regular meeting, provided all members have been notified of the intent to amend the Constitution or By-Laws at said meeting.

ARTICLE VIII

RULES: Robert's Rules of Order shall be used as a guide at all proceedings.

BY-LAWS

1. SECRETARY. It shall be the duty of the Secretary to keep the Constitution and By-Laws of the Club and have the same with him at every meeting. He shall cause all amendments, changes and additions to be noted thereon and shall permit the same to be consulted by members upon request.

2. MEMBERSHIP. Applications for membership shall be submitted at a regular meeting in writing. Each applicant must express a willingness to abide by the Constitution and By-Laws and other rules promulgated by the club. Two-thirds of those present shall approve the applicant before he shall bee considered elected to membership.

3. MEETINGS. Regular meetings shall be held on the second Tuesday of each calendar month at the Will Rogers Air National Guard Base or at another time or place, as decided by the membership, to avoid conflicts or for special activities. Special meetings may be called by the President upon the written request of any five club members. Each member shall be notified at least 24 hours before such special meetings and of the business to be transacted. Only such business as designated by the notice shall be transacted.

4.DUES. A regular annual assessment of $10.00 per member is hereby assessed in accordance with the provisions of Article V of the Constitution for the purpose of providing funds for current expenses.

5. TRAINING COMMITTEE. The Training Committee shall consist of five members appointed by the President. This committee shall direct a club-sponsored school in Amateur Radio. It shallset training periods, construct lesson plans, develop training materials, recruit instructors, publicize class dates and in general promote a desire to advance in radio knowledge.

6. SPONSORSHIP. The Club agrees to sponsorship by the Oklahoma Air National Guard. The OKANG has agreed to furnish a place for club meetings provided a. Club membership is open to anyone with an interest in radio communication;

b. The Club is openly sponsored by the OKANG;
c. Proper care is taken of the facilities and property.

SIGNED:

| | |
|---|---|
| Richard Bennett | Stephen D.Hutcherson |
| Bob J. Wall | Ken Newberry |
| C.Y.Chandler | Allen Mosley |
| Bob L. Wall | Chris Mosley |
| J.A.March | Joe J. Couch |
| Robert E. Kelley | Richard M. Baker |
| Danny Dewey | James T. Kerr, jr. |
| George R. Kolar | Alden Woods |
| Jack Perry | Woodrow Harwick |
| Nelson Lee | Johnnie L. Ham |
| James V. Pertree | John L. Oltmanns |
| Max Terry | Scott A. Short, jr. |
| Richard James | Donald E. Mayes |
| Suzie James | Roger Walker |
| Chris Jones | David Atnip |
| Pat Jones | Donald H. Duck |
| Chris Floyd | Ernest G. Wolf |
| Coy C. Day | |

Constitution and By-Laws adopted 6 Jan 1976,
As amended 21 Nov 78, 11 Aug 81 and 8 Sep 81,
Published November 1980 and October 1981.

Jim N5BEQ
Jim Buswell
Secretary.

## "PLAIN LANGUAGE" KAPUT?

The "Plain Language" Amateur rules rewrite may be turning out to be a dead issue. In a letter to a Lincoln, Nebraska, Novice, (KAØJYZ), Senator Barry Goldwater, K7UGA, stated that "the rules changes in language have been stopped for the time being, and I think when we get better acquainted with the new head of the FCC we can forget all about them."

With the ARRL and many individual Amateurs lukewarm or even opposed to the rewrite as proposed, the Goldwater opposition may very well be the signal of its demise.

hr report #349
11 SEP 81
n5beq,jim

*NEW PRODUCT NEWS*...

POCKET REPEATER, by Mini-Comm.... This is the world's first pocket repeater. Requires no permanent installation. Just take it wherever you go. Antenna mounts conveniently on the head with coax running behind one ear and down under the shirt (or blouse--Ed.). The transmitter/receiver unit fits conveniently into a coat pocket with control unit/phone patch in opposite pocket (or purse--Ed.). Duplexer can be carried in rear trouser (or skirt--Ed.) pocket with rechargeable ni-cad batteries strapped to the user's leg (or bra--Ed.). Available for 144, 220 or 450 Mhz. Specify bands and frequencies desired when ordering. See above for correct address. N8JR

GEARVAKf BULLetin
VOL.21 NO.1
SPRING 1981
("the 'f' is silent") n5beq,jim

## PUZZLE CORNER

The puzzle, to me, is why no one is interested in winning a free subscription or just exercising their brain. No response for two months so here are the answers to last month, and -30-

CHANGE: A half dollar, quarter and four dimes would do.
CLIPPER CIRCUIT QUIZ: 1=H, 2=F, 3=C, 4=J, 5=I, 6=D, 7=A, 8=E, 9=G, 10=B.

WA5ZNF

## OKLAHOMA ANTENNA DEFENSE REPORT

George AD1S, Chuck N5SW and I have had a few inquiries from persons interested in the antenna case pending in Oklahoma City Federal Court and we gathered together the following information to explain what is going on and how the case developed.

Restrictive tower ordinances have been a thorn in the side of the amateur radio operator for quite some time. To the typical green grass growing suburbanite, the amateur's 75 foot work of art is the local neighborhood albatross. Television antennas were probably the first targets in the early 1950's as concern for neighborhood aesthetics began to grow. It is important to realize the difference between a tower ordinance and the so-called plat restrictive covenant. An ordinance is a rule passed by the local city government while a plat restrictive covenant is is a private restriction placed on the land when it was platted by the developer. Oklahoma, like most states, takes a narrow and restricted view when interpreting these restrictions. The Oklahoma Court of Appeals has held that amateur radio stations and the attendant antennas and towers are a normal and incidental use of residential property and as such general restrictive covenants providing that "No noxious or offensive trade or enterprise shall be carried on upon the lot" or prohibiting a nuisance could be used to restrict the use of an amateur radio station. Pirtle v. Wade, 593 P. 2d 1098 (Okla App., 1979) Any differences are generally resolved in favor of free use of the property.

In response, some builders and developers have begun including specific antenna limitations when platting new property. Some of these have specifically excluded TV or any type of transmitting or receiving antenna placed outside the house or in such a position that it was visible from the front of the house. Such a specific restriction would, more likely than not, be enforceable and you could be required to remove an antenna that violates a restriction of this type and pay court costs and attorney's fees for your trouble. In addition, some builders and developers and quite diligent in enforcing these restrictions, at least, until all the residential lots in the area are sold. The point is that if you buy a new house, you should carefully examine the abstract to determine if you have any restrictions of this type that might be enforced against you. The disappointment of not being able to put up your favorite 20 meter beam may be matched only by the expense and cost of selling your home and moving to the country.

### Oklahoma City Ordinance

Oklahoma City has had a limitation on the height of structures in residential zoning areas for quite some time. Enforcement is generally very limited and selective. Odviously, the inspectors don't go out looking for trouble. They generally respond to a particular complaint regarding a violation. This was the situation in Chuck's case. His self-supporting tower and beam set had an overall height of 78 feet. The tower consists of a 63 foot permanent structure with a removeable 15 foot mast that protrudes through the top of the tower. Chuck has a variety of beams and antennas on the mast.

When the tower was constructed last year, Chuck obtained a building permit to 15 feet above the limit for normal residential property. The procedure is required for any construction above the 35 foot max permitted height to a total of 50 feet. Oklahoma City recodified its Zoning Code in October of 1980 and Section 3200.3 (R-1 Single Family Residential District) provided for a height limitation under Subsection 3200.3(c)(4)(a) that no building shall exceed two and one half stories or 35 feet in height. Subsection H under Section 6300.1(Qualified Use and Structure Regulations) provided for a qualified height regulation:

> Parapets, Penthouses, Antenna Towers, and Stacks, Chimneys, cooling towers, elevator shafts, bulkheads, broadcasting or receiving antennas or residences, fire towers, lofts, tanks, water towers, ornamental towers and spires, wireless towers and necessary mechanical appurtenances shall be excluded from the measured heighth of a building. These accessory features may be erected to a heighth not exceeding 15 feet above the applicable permitted maximum height for that building or to such greater height as may be provided in these Ordinances.

This Qualified Use required a Building Permit and Chuck obtained one. His permanent structure was 13 feet over the limit. Why did he not change it? The tower was a used structure purchased at a good deal and it would have substantially increased the cost to shorten the tower. The mast would still protrude above 50 feet. In these situations, as in most situations, most people just shrug their shoulders and go on when they see the tower. Unfortunately Chuck's neighborhood is fairly active and the neighbors concern with aesthetics resulted in a couple of complaints about the tower. The only step was to apply for a building permit above 50 feet and get rejected. Chuck could then apply to the Board of Adjustment for a Zoning Variance for the existing structure.

The hearing was May 6, 1981 and Chuck enlisted the aid of various persons around town including Carl W5JJ, Ron Nelson of Utility Tower, Don K5SJV, Jack Muse and numerous others who attended or testified. A general presentation was made on the safety of the tower, the use for amateur radio, and the general relationship between height and distance that one could communicate. Several neighbors attended and protested plus had a petition containing numerous signatures. Most, if not all of the complaints centered on the aesthetics. No questions was raised about safety that could not be refuted by Chuck. Regardless, the Board of Adjustment turned the request for variance down. This was politically too hot of a potato for them to handle.

The requirements for a variance are provided by state statute. Before it can be granted, the applicant must prove:

> (a) The application of the Ordinance to the particular piece of property would create an unnecessary hardship;
>
> (b) Such conditions are peculiar to the particular piece of property involved; and
>
> (c) Relief, if granted, would not cause substantial detriment to the public good, or impair the purposes and intent of the Ordinance or Comprehensive Plan.

There is not much to get a handle on here when trying to convince a Board of Adjustment that it would be a real hardship to be limited to 50 feet. Much of the work that the Board of Adjustment does is approving variances for oil wells within the city limits. Chuck and the others had to sit through an entire afternoon of these before reaching his request dead last on the list. It is interesting to point out that not one oil well was disapproved despite the noise and accompanying equipment that is place on the property. There is

no question that the financial stakes of the variance procedure are a signicant factor.

The alternatives upon rejection of the variance by the Board of Adjustment were limited. The Oklahoma Statutes provide that an appeal could be taken into the District Court, but the test would still be the same and a losing case before the Board would still be a losing case in State District Court.

Chuck could also have instituted a separate action for declaratory relief in the District Court seeking to have the ordinance declared invalid. The grounds would have been much the same as provided in the Federal suit that was eventually filed. Oklahoma courts generally construe ordinances very narrowly. The right of the city to make ordinances is granted under the police power of the state. The statutes provide that the city can make ordinances so long as they affect the public safety, health, morals or general welfare. Zoning purely for aesthetics has been held in previous cases to be outside the normal police powers possessed by the city since aesthetics is a very personal and nonuniform concept dependent upon circumstances and generally not affecting the public safety or general welfare.

Besides the State limitations on city zoning, there are also federal questions to be considered in an antenna restriction case. The FCC regulations specify in section 97. 45 of Title 47 of the Federal Regulations a general limitation on amateur radio antenna height of 200 feet. As such, the argument is advanced that such federal regulations preempt the city ordinance under the Supremecy Clause (Article VI, Clause 2) of the United States Constitution. The Communications Act which established the FCC also is supreme to state enactments when such local restrictions are in conflict with that Act. The Act was passed pursuant to the power of the Congress to regulate interstate commerce and any restriction by the city which limits or thwarts the purpose of the Communications Act is a burden on interstate commerce as provided in Article I, Section 8 of the Constitution.

Perhaps the most controversial aspect of the lawsuit is that the limitation of 50 for an amateur radio antenna imposes a limitation that is unconstitutional in violation of Chuck's (and all other amateurs) Freedom of Speech under the First Amendment. This argument is gathering credence since the George Oelkers case in California declared the height restrictions of the City of Placentia unconstitutional. As such, Guschke v. City of Oklahoma City can be an important case in either upholding the precedent of the Oelkers case or unfavorable if the decision goes against Chuck. A considerable amount of interest has been generated in the case throughout the amateur community.

The Status of the Case

After some discussions, the suit was filed on June 11, 1981 and the various city officials including the mayor, city council members, and two city inspectors were summoned. After some discussions between the City Attorney and the defense team, it was agreed to dismiss all the individual city officers including the mayor and the city inspectors and councilmen in exchange for the city's promise not to prosecute Chuck during the time that the case was pending in the District Court. An initial claim for money damages for $25,000.00 was also dropped as a part of the agreement. The possibility of collecting any money from the city for damages is generally difficult to obtain since you must show a bad faith effort by the city officials in passing the ordinance and its enforcement.

The request for preliminary injunction would have provided the opportunity for an early determination of some of the factual issues involved here, but its withdrawal has reserved such presentations to the time of trial. To date, the City has responded to the Complaint by filing an answer and generally denying the factual truth of the allegations. They also claim that the ordinance is a valid exercise of their police power. They also claim that the FCC Regulations are not superior to the city's power to make ordinances. The case is presently pending before the Court. No hearings have been set to date.

Preparations are being made for the trial or any further hearings. At this point there have been several offers of help from volunteer expert witnesses and other witnesses. The ARRL has been contacted and they are interested in the proceedings. In addition, information has been provided to the Personal Communications Foundation as well as several amateur radio equipment manufacturers. Each of us has something at stake in this lawsuit. Because of the nature of legal precedent, an unfavorable decision could affect the rights of all amateurs should the cities decide to limit antenna heights. The fact is that a properly constructed antenna does not pose a danger to the public safety or welfare. The city can limit those factors of the construction of the tower that do affect safety such as the types of materials used or construction techniques, but a strict limitation on height is unrelated to safety. And if the city can limit you to 50 feet (with a special permit) why can they not also not decide that 40 feet is more appropriate or even 20 feet.

There are some practical limitations to the extent of the litigation. There is some consideration to joining an additional Plaintiff to the action for the purpose of presenting the case of an amateur radio operator who has a tower under 35 feet and wants to go above 50 feet, but doesn't because of the ordinance limitations. Anyone who is interested can contact Chuck at 789-1951.

There are criminal sanctions attached to the violation of the ordinance. The punishment gets more serious for each offense and each day can constitute a separate offense. Contemplate the time, expense and trouble that putting in a tower over 50 feet might entail. The City's punishment are extensive. Most amateurs have been made closet criminals by erecting illegal towers and then depend upon their neighbors not to complain. Amateurs are not the only ones affected. I have seen numerous CB antennas easily exceeding the legal limit (especially since the legal height for CB antennas is 65 feet). The net effect of the City's regulation is to make criminal an activity that is legal in numerous other citys around the state. It is also interesting to note that the battle here is not so much as a challenge to the ordinance, but an attitude. This can only be solved through education. The citizens must be made to understand what amateur radio is about and the necessity of the use of antennas. Amateurs can help by being sensitive to neighborhood aesthetics and double checking the safety of their antennas. For more information, you can contact Chuck or George Adkins AD1S, c/o Oklahoma Antenna Defense Fund, P. O. Box 32735, Oklahoma City, Oklahoma 73123

Henry Israel N5IH

FROGS ARE LUCKY . . .

THEY CAN EAT WHAT BUGS THEM !

WHEATSTRAW ARC ®
01-61

We had 28 members and guests show up at our regular meeting in Watonga last Sunday. Contrary to the rumors we have heard there is a President for our club. Our President and his wife Sue have been very busy this summer trying to use up all of Ray's AB5Z vacation time. They are also the proud new owners of a brand new Grandson.

A big thank you goes out to Perry W5MGZ for having us out to Weatherford for his annual watermelon feed. I didn't count the number of melons used but I don't think anyone had much appetite for watermelon for awhile. Perry's wife is in the hospital, we all signed a card to hive her from the clubbut if any of us get to the city she is in Baptist hospital room 680. I don't know how long she might be there but a short vist is always welcomed.

Ralph WB5PFW showed us some pictures he took when he, his son and grandson vacationed at the Isle of Cozmel. Ralph sounded like he really enjoyed living with the upper 10%, even if it was just for a short time.

A special thanks go out to our host and hostess this month. Goldie has been down in her back bur she still managed to have excellent refreshments. Some how she even talked Ralph WA5PFK into cranking a couple buckets of homemade ice cream which was a welcomed surprize. We thank them both.

Our next meeting will be at Calumet, October 11 at 2:30. To find the place you will have to tune in to our weekly net. This net is a open net conducted each Wednesday night at 9:00 on 146.01-146.61. Our net control this month is Johnny K5GBN with able assistance and guidance from his alternate Ray K5LLX. The repeater is working better than it has in a long while, so try it you might be surprized and be able to make it way out in the country.

Ted WD5JNT

WANTED: Want to buy a high quality straight hand key. Van, N5BWY. 942-4393

NOTE: Correction to KAY County ARC entry on page 3. New Secretary/Treasurer is:
Delbert Foiles, 1708 Richway, Ponca City OK

AERONAUTICAL CENTER AMATEUR RADIO CLUB, INC.
W5PAA

RANDOM WORDS FROM THE PRESIDENT

WELL ITS NICE TO HAVE H.H.81 OVER,IT WAS FUN AND I ENJOYED IT,BUT ITS TIME TO LOOK FORDWARD TO THE REST OF THE YEAR AND OTHER EVENTS WE HAVE COMMING UP.

NEXT MEETING OF ACARC WILL BE OCT.2ND 1981 AT THE AERONAUTICAL CENTER,THE PROGRAM WILL BE PRESENTED BY TOM,W5OZE AND WILL FEATURE ITEMS USED BY BLIND AMATEURS TO HELP THEM ENJOY THEIR HOBBY SO EVERYONE COME ON OUT AND JOIN US FOR A GOOD MEETING.

THE REGULAR GET TOGETHER OF THE VHF CLUB AND THE ACARC WAS HELED IN AUGUST AT WILL ROGERS PARK,EVERYONE REALLY ENJOYED THE WATERMELON AND THE CHANCE TO VISIT WITH EACH OTHER.

AT OUR REGULAR MEETING IN SEPTEMBER WE HAD A VERY GOOD PROGRAM PRESENTED BY THE MICROWAVE DIVISION OF BELL TELEPHONE,THE PROGRAM WAS PRESENTED BY MR.RANDY FROST,AND WAS ENJOYED BY EVERYONE.I WOULD LIKE TO THANK K5LIL,ED FOR GETTING RANDY TO COME OUT.

BACK IN EARLY AUGUST I WENT TO TEXAS TO VISIT MY MOTHER AND WHILE I WAS DOWN THERE I ATTENDED THE TEXAS V.H.F. FM SOCITY CONVENTION AT AUSTIN TEXAS.THEY HAD SOME VERY INTRESTING TECHNICIAL PROGRAMS AND A VERY IMPRESSIVE REPORT ON THE STATUS OF THE T.I.R.S SYSTEN YOU CAN NOW TALK FROM AUSTIN TO CORPUS CHRISTY ON YOUR IC2-AT,THEIR SYSTEM WORKS GREAT.... SEE YOU AT THE OCT. MEETING OF ACARC..

73,BOB,WA5CJG

FOR SALE WILSON MARK 4 FULL OF CRYSTALS
07/67,22/82,25/85,28/68,34/94 AND 52/52 WITH CHARGER $150.00 CALL BOB 376-3569 AFTER 5:30 PM.

# kay

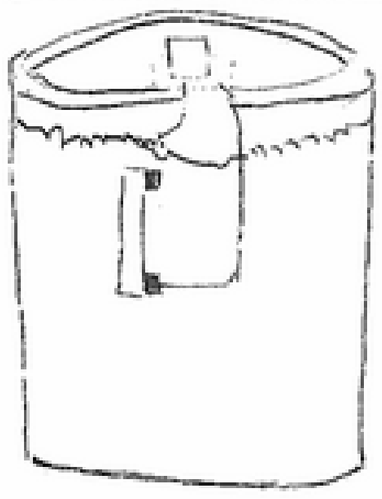
COUNTY ARC HARSH WASUBO

As the days go rolling by, it looks like it is time to put my editor hat on and prepare another exciting article for the C&E. After reading last month's article, I think I should proofread it after it is typed and also change to a different secretary so part of a sentence or more than one are not left out.

At our August meeting, we brought up the topic of a new or, should we say, a new used repeater. The process of getting a donation to the club for this purpose was finished up before I started this article; all that's lacking now is for it to be typed and turned in and cross our fingers. If this fails, we have two more irons in the fire for the same purpose. Would be great if all would work out so it could be put up before winter hits.

The idea was brought up that the club should have a jacket with a patch to represent club members. First, since the club didn't have an emblem of any form, I put my art and designer hat on and sat down and started the idea process. After a few hours, I came up with what I liked and thought (or hope club members will like also). The bit of jackets I threw out the door and decided to go with caps, the kind that go on your head, not in your cap pistol. For it's usually too hot or too cold for a jacket in Oklahoma. Caps are less expensive and, with a hat, you can be seen in a crowd of people. It has other advantages, such as keeping the sun out of your eyes, on field day and the raft race, and we will be able to test Gean's (WA5MUB) old saying (that'll blow your hat in the creek). I will gather all costs and get the vote of the club this month at our meeting and continue or come to a big halt.

Lately, on low band, I have had the great pleasure of hearing Mr. Tune-up. This has not been on an empty frequency. It has been on top of a QSO, a net, DX pile-up, or a DX QSO; not just a quick peak-up, but a long drawn-out tune-up. A lot of the time it seems quite intentional since their VFO drifts rapidly up and down with the carrier present, or just the long drawn-out tune-up. These so-called operators I believe are called LIDS. They seem to have a dummy load installed between their ears, not to their rigs. For a small nominal price, a man can build a dummy load that will handle moderate power to short intervals of high power. I built my first one 15 years ago and my dad is still using it. He has the capability of running 1 KW PEP and has had no problems with it. I built one when I moved up here from Tulsa and it just works like a dummy.



Parts Required:

1 Quart Paint Can
1 SO-239 Coax Connector
1 OHMITE 50ohm, 12 w, Non-inductive resisror #2057
1 Quart transformer oil or mineral oil
4 Small Nuts & Bolts
1 Ground lug
1 Short length #14 Copper wire

Drill hole in center of lid for SO-239 and 4 small mount holes. Mount SO-239 with ground lug on one bolt. Connect lug on one bolt. Connect resistor so it will be in center of can when closed. Fill can 3/4 to 1 inch from top for expansion space, put top on can, and you have a basic dummy.

Now, I will step down off my soap box and get to matters at hand. This fall, I plan to have an XMITTER hunt so get your directional loops out or built up. As of yet, our citywide SET has not taken place so it looks like this coming week will be the time.

Well, my pencil is running out of ink and I need to get out and get some work done here on the farm; so, see you all next month.

# Central Oklahoma Radio Amateurs

The minutes for the September CORA meeting will not be published due to shortage of time to properly prepare them. Instead, the informal account of happenings as observed by the writer is presented in order that the rank and file of members may know what has happened and what is coming up that they should be interested in and go to your club meeting and express your opinion and vote instead of listening to rumors on the air from malcontents who do not have the facts.

The last order of business, which probably was the most important was election of officers for the new year. After all the nominations and speeches the voting was carried out and the counters, while not giving actual numbers, said that the voting was closest in their memory.

Our new president is George Atkins, AD1S, the vice-president, Ted Van Laningham, WD5JNT, Secretary, Frank Yohe, N5CIJ and the current treasurer, George Maschino, K5GGL, was re-elected. Give them your support for a better CORA. Volunteer to help.

Eight clubs had one or more Directors present to conduct a very important meeting. The other nine CORA clubs made no input to the meeting.

Quite a bit of misinformation concerning Ham Holiday, its operation, finances, etc. has been bandied about. Here is a quick rundown per the treasurers records:

| INCOME | | EXPENSES | |
|---|---|---|---|
| Registration | 5,506.50 | Registration | 391.42 |
| Pre-Register | 4,287.50 | Publicity | 1,528.54 |
| Dealers | 1,750.00 | Dealer booths | 856.93 |
| Ads in C&E | 510.00 | Programs | 279.43 |
| Ladies (Ret) | 477.00 | Ladies prog | 810.80 |
| | | Facilities | 5,012.60 |
| | | Prizes | 2,646.74 |
| Total | 12,531.00 | | 11,526.40 |
| Carried over for 1982 | 1004.60 | | |
| Ham-Holiday account as of 9/21/81 | | | 2,307.62 |

| | |
|---|---|
| Collector & Emitter Equipment Fund | 369.40 |
| Collector & Emitter General Fund | 1,850.94 |

The above report was "dissected" by your CORA Directors and approved with the suggestion that a few changes be made next year, but that will be covered when YOU tell your club representative what YOU think should be done to improve Ham Holiday.

Reports by commities were boiled down to these generalities since a thorough examination of all operations will be conducted in the October meeting when plans for next year will START.

REGISTRATION: 1201 registered, about half and half on Pre-Registration and Door Registration.

PRIZES: $2,646.74 cash was spent on prizes in addition to many items donated by dealers amd manufacturers. (List not available in time to publish. Much discussion about whether a registerant needs to be present to win. What do you think?

DEALERS: 30 were present, in increase over the 11 or so last year. The paid $1700 for their booth space which cost CORA $600 for the booth separators, signs, etc. Of course we paid the rent for the hall. An additional $256.93 was spent for dealer contacts, publicity, etc. in addition to which individuals spent their money and business facilities to do a good job of attracting dealers, the life blood.

LADIES: Most everything went well. The committee spent $810.10 but ended up with $477.00 to turn back in. Hope they spend it on the ladie next year. That microwave oven award went over big.

FACILITIES: Huge majority liked the Myriad. Parking problem - two stories -changes by the Myriad at last minute, will be resolved.

Continued on page 3

ICOM IC2AT TROUBLE (A Switch in time meets its Match)

No doubt about it. Icom makes some really nifty dodads for persons of the amateur radio persuasion. I have owned a couple of them ranging from the IC-230 through the new IC2AT. I have previously waxed on in these pages about the IC2AT features including its size and versitility. It for sure wins the battle of the network synthesized walkie talkies on these two features alone. The battery exchange is alone reason enough. This is especially critical when dealing with power hungry synthesizers and you lose the voltage oomph at a critical place in the conversation. Just a slip of the tongue (err, battery) and you have fresh volts for old.

One problem has always worried me about Icom and that is their extreme relunctance to release service information about their radios. I have requested service manuals and tune up instructions for the IC-230 numerous times, but I am alway told that the manuals are written in Japanese. I find this hard to believe especially when I visited ICOM EAST one time and didn't see a single japanese individual or service technician. Somebody beside Santa's elves work on those radio and how they do it, well, they just aren't saying.

This is in fine contrast to my recently acquired TS-130. Whatajewel! And as I was getting ready to saunter out the door with the radio well in hand, I was gently reminded that for a fistful of dollars more, I could be the proud owner of a service manual. My natural skepticism kept me from immediately jumping on the offer, but after looking through the pages, I was amazed at the quality of the documentation. And it covered all the accessories too. The manual was a real bargain and sure to enhance the resale value of the equipment. And a perusal would be helpful in understanding how these new radios work.

Quo Vadis, Icom? Why do you torment me with your incomplete explanations and screwed up diagrams? After studying the schematic for my IC-720 for an hour or so the other evening, I must have counted at least 5 chips labeled IC5. Wiring diagrams are done in bundles and this can be very confusing. The explanations in the books are raw translations and I like to see the syntax reversals. You would think that for the arm and leg they charge for these radios you could get some refugee from the United Nations to convert these manuals to English. Its bad enough that they use transistor numbers that I don't understand.

Icom's ultimate is the PC-PS15 power supply which provides for a 4 page manual entirely in Japanese except for the schematic. The only other English is the logo on the front. The pictures are nice, the diagrams are difficult. Please excuse the block operational diagram if you don't read Japanese.

The manual for the IC2AT is just a little different, but it is not a service manual. Sure, there is a trouble-shooters chart, but there is not much that you can do after it says make sure that the volume knob is turned up. I was reminded of this when my IC-2AT took a nose dive the other day. I fiddled with it for awhile before determining that I might actually have to send it back to Icom and make a brief contribution to their service department fund. This I was less than willing to do since I had sent back an IC-30 purchased in a swap that had numerous fingerprints of various technicians in it. The service was quite good, but I got a little twisted at the terse little note from the service technician reminding me or should I say accusing me of maliciously repairing the radio. I didn't even have the opportunity to plead not guilty, but it was guilt by association.

The problem with the IC2AT surfaced one day while driving home quite late. I called WA5JXX and found that I could neither hear nor hit the 88 machine. I got ready to change directions to head toward the repeater site when I grabbed the IC-230 and kerchunked. The repeater came back, but the IC2AT would not hear it. I moved the radio down to 146.28 Mhz and keyed it on simplex. Humm, it would receive and transmit on 28, but not 88 simplex.

After arriving home, I got out the old trusty rusty Bearcat scanner and set it scanning between the 146-147 Mhz band segment. I then transmitted on 146.88 simplex. The light was lit and the Bearcat stopped on 146.975. I stepped it up and found that the radio was transmitting 100Khz high. I checked every frequency between 146.28 and 147. It only transmitted 100 Khz high on 146.8 through 146.9. On 146.9 through 146.99, it transmitted normally. I also found that it transmitted on 146.9 through 146.99 when it was in the 146.1 to 146.19 range.

I drug out the schematic and checked the divide by n chip circuit diagram. I summarize the symptoms as follows:

| Indicated | Actual |
|---|---|
| 146.00 - 146.09 | Same |
| 146.10 - 146.19 | 146.90 - 146.99 |
| 146.20 - 146.79 | Same |
| 146.80 - 146.89 | 146.90 - 146.99 |
| 146.90 - 146.99 | Same |

Each switch is a BCD switch and it appears that there is a short between the A and D ($B_1$ and $B_4$) contacts of the 100 Khz thumbwheels. This would account for the screwy readings between 146.80 through 146.89 being 100 Khz.

I put all the thumbwheels on 0.00 and disassembled the radio. I measured with the Fluke 8020A between $B_1$ and $B_4$ and saw 27.8K. (This was measured to ground). On each of the other pins, I saw between 63 to 64 K. No wonder the switch was indicating wrong! I carefully cleaned the flexible PC circuit board around the switches, then touched them up with a touch of solder. I then took the Exacto knife and carefully cleaned between the traces. A check with the Fluke showed normal. I carefully attached the battery and the radio worked OK. This was about 2 a.m. I boxed the radio back together and dropped it in the charger. After about 5 minutes, I tested it again. Rats! It was back on the blink.

This time I carefully disassembled the radio and took all the solder off the connections to $B_1$ and $B_4$ both to the switch and to the chip. As I suspected, the short was internal to the switch. I thought that I was whipped at this point since I had no replacement switch and the disassembly from that point required pulling off various stickers and things for which I had no replacements.

I thought of one last effort I could make, but I really wasn't sure of its success possibilities. My ohmmeter indicated that the switch was now showing about 8K between the contacts. A couple of quick calculations revealed that 110V across the switch contacts would generate about 1.5 watts across the short. Maybe I could burn it out. I rigged up an isolation transformer and again checked to make sure that I had isolated the switch from the circuit board and the chip. I put the switches on 0.00 and a touch of the transformer for about a second cleared the short. Radio operational and buttoned back together. I don't recommend this to everyone, especially a fumblefingers, but it did work and I saved a contribution to the Icom Service Department.

Micheal Salem N5MS

## EDMOND AMATEUR RADIO SOCIETY 147.135/.735

One hundred fathoms down = 600 KCs. That's right--by the time U read this our new repeater and phone patch will be on the air--147.735TX -- 147.135REC., reverse split, 600 KCs down. Intermode and stations running far more power than needed made it necessary. Martin Vinson, WD5FEI, and Bob McCoy, N5BUJ, got it all together and our new repeater system is running like a thief in the night. Our phone patch system is still open, but must be brought up by a member. A coded system is now used since some people were abusing it, bringing up the dial tone time after time with no I.D., and not clearing properly. Various monitors will continue on our repeater.

Bill Wright, KC5GN, completed Novice training for Mike Smith and Tim Rauscher, who should both have their tickets shortly. Congratulations to Mike and Tim! We look forward to having them in our club. This is a job well done by Bill Wright. During his two week trip to Korea (HK Land) Bill did not try to contact us on 15 meters as his Korean Ham friend had a dipole antenna hooked to a slightly sick Kenwood and, as Bill said, "Just had a case of not enough beans to make the trip back to Edmond."

Ron Hathcock, KA5EHR, is on two weeks training in Panama with the Air Guard and, if there is an idle C-130 sitting around... well, the HF rig on board is a snap to operate---turn it on, dial up the digital frequency, hit the tune position, antenna automatically loads, and it's GO..with, I believe, 400 watts...all Clydesdales! A guy would get spoiled with such a rig!!!

The Edmond Amateur Radio Society continues as a major source of back-up communications for our community. We will continue to provide once a month siren monitoring--one station at each location to verify that all such units are operating properly. Ken Stepp, N5DBM, Emergency Coordinator also keeps track of all members QTH and their ability to operate HF, two meters and their antennae, and if they have standby power. Our club, at present, can provide, if needed, one 3KW, one 1.5 KW, AC generators, plus one 14 volt 140 amp generator, so our standby power capability is in pretty good shape. Ken also continues as primary Net Control during tornado watch or other emergencies. Roving scouts, when needed, are usually Martin, WD5FEI, and Bob, N5BUJ. In the event our repeater goes off, for whatever reason, go to the 147.63/147.03 machine. This is the present back-up system. Another back-up antenna along with all local officials--Police, Fire, and Civil Defense--is located in temporary quarters at the old National Guard Armory at 4th and Boulevard in Edmond. Eventually all units will be moved to permanent quarters in the basement of the old Post Office building.

Ken Stepp, N5DBM, is the liason officer of the club to David VanNostrand, Civil Defense Director of Edmond. Anyone who desires to participate in such worthwhile services to our community should contact Ken direct as he is always in need of more troops.

EDMOND TRAIN WRECK--9/10/81--0900 hrs. Ken Stepp, N5DBM, and Martin, WD5FEI, provided phone patch services along with Ron Moore, N5BEW, from 9:00 A. M. to about 4:00 P. M. Again, our club was ready, willing, and able..AN EMERGENCY IS COME AS U ARE! The Boy Scout Motto, BE PREPARED, ain't all bad!!!

DAHs and DITs....Station identification on our new repeater continues to be the sweet female voice of Karen McCoy, XYL of Bob McCoy, N5DBM....Charles Frodsham, KØAYS, is collecting old AM radios of all types. Anyone interested in this activity should contact him direct. He also has a Swan 350D up for sale---see ad elsewhere... ...WA5ZGN, J. D. Keeling, let his license lapse and hasn't been heard from fer sometime. J. D., UR missed....Dee Mize, WD5FHR, the Fat Happy Rat, has been running his Army MARS net on Sundays and is sorely missed. Dee, maybe you can change nets, or get a back-up fer one day...(not Bill Wright, KC5GN).

No notes from last meeting as URs Truly was in the Wheel City...Detroit, so we missed out. That's a gud place to be from!!!!!

Don Moore, WA5FFK, is back in Oke City from a two year mission in Honduras. Sold out everything down there, however, he has already obtained a new Kenwood 830 and we invite him to visit our club.

That's abt it frm here..our President, the Honorable Clarence Dollmeyer has a few words, so will turn the mike over to him.

73s...Bob, KA5APN...Clear

### EARS President's Corner

It's no use trying to copy the CW that is on 15m tonight-- and I dont have an antenna up for anything else so best I do something constructive with the evening.

First, I find myself saddened by the apparent loss of two of our members. As of now we must drop Ben Allen, K5IRO, and Art Roberts, W1GOM, from the roster for non-payment of dues. We dont relish doing it, but we cannot go on subsidizing C&E subscriptions for people who do not support the club financially

Some may remember that we voted to develope a club membership card at the January or February meeting. Well, the idea is finally begining to take shape. Those present for the August meeting saw a very rough draft of the card combined with the C&E subscription validation card, all combined in the forn of a double post card which would be mailed to members as a dues notice. A similar thing is done by MORI, except they use envelopes and 18¢ stamps instead of post cards. The post card part needed the blessing of Joe Harding, WA5ZNF, in his capacity of C&E Editor. His concurrence has now been obtained so assuming that the membership buys off on the final draft at the September 20th meeting, you can expect to receive your card in the mail during October.

Too many of our members are missing out bynot attending the meetings. If any of you have any suggestions for making the club more to your liking, we wouldlike to have you come out and say your piece. You may have a good idea there. However, we will never know it if you don't come out and tell us.

Geuss I can exercise executive privilage and slip in one bragging paragraph. The XYL and I journeyed to Layton, UT for our vacation and managed to be present for the arrival of a Grand-daughter -- the first girl on this limb of the family tree in approx. 130 years. None of us really believed it could happen. Everything else was anti-climactic, including setting up and operating KB5RR/P7 while there. Did manage to develop a pretty nice center isolator from a 79¢ plastic pipe fitting. Managed to get an antenna up without dropping any bricks too.

Enough of that!! I can only urge every member to come out and participate this fall. We will have plenty to do setting up our club station facilities at the new Edmond Emergency Operating Center. See you there!

SK SK EARS DE KB5RR CL CL

CENTRAL OKLAHOMA RADIO AMATEURS, INCORPORATED

AMENDED CONSTITUTION

ARTICLE 1 - NAME: The name of this organization shall be the Central Oklahoma Radio Amateurs, Incorporated, a non-profit organization hereafter referred to as CORA.

ARTICLE 2 - PURPOSE: The purpose of CORA is to coordinate group activities in the public interest between the Amateur Radio societies in central Oklahoma. These activities consist of a statewide meeting of Amateur Radio operators to be held annually in the Oklahoma City metropolitan area; better use of communication skills in support of The American Red Cross, Civil Defense and the American Radio Relay League; and the seeking of solutions to problems facing Amateur Radio licensees throughout the state.

ARTICLE 3 - MEMBERSHIP: Membership in CORA shall be as follows:

a. SUPPORTING - Each of the several constituted Amateur Radio societies in the central Oklahoma area, endorsing the purposes stated in Article 2 above and providing financial or other support to this organiztion shall be a SUPPORTING member of CORA.

b. ASSOCIATE - By virtue of an individual's membership in a supporting member central Oklahoma Amateur radio society, he shall be an ASSOCIATE member of CORA.

c. DIRECTORS OF CORA - A Board of Directors shall be established as follows:

1. Each SUPPORTING member of CORA shall duly appoint or elect three Directors to serve on the Board of Directors of CORA for a term of one year beginning in September of each year. Each Director shall have one vote.

2. The immediate past President of CORA shall serve as an advisory member of the Board of Directors for a period of one year. He shall have a vote.

ARTICLE 4 - OFFICERS AND THEIR DUTIES: The officers of CORA shall be the President, Vice-President, the Secretary and the Treasurer. The Directors of CORA at the annual September meeting shall nominate and elect the above officers to serve for a period of one year. Nominees for the above offices are to be only from the members of the CORA Board of Directors. They shall be elected by a majority vote and shall hold office for a period of one year. There is no restriction on the re-election of any individual to an office he has held in the previous year so long as he remains a Director of CORA.

a. The President shall call and preside at all meetings and represent the organization in all official matters. He shall appoint all committees that may be necessary in the administration of the organization's business.

b. The Vice-President shall take over the duties of the President in the President's absence. He shall have all the authority of the President when acting in the presidential capacity. He shall assist the President in performing all activities of the organization.

c. The Secretary shall keep a written record of the minutes of each meeting of CORA and originate correspondence as directed by the President.

d. The Treasurer shall receive and disburse all funds entrusted to CORA and keep an accurate record of such, shall be personally responsible for all funds entrusted to him and shall give an accounting of the disposition of all funds at each meeting of the organization.

ARTICLE 5 - FINANCIAL MATTERS:

a. CORA will receive financial support from each supporting Amateur radio society as approved by each individual society. Funds for a specific activity shall be requested by the President from financial supporting societies upon approval of the Director membership.

b. Upon final completion of a specific project or activity by CORA, the financial supporting societies will be repeid their financial support if possible. Any liability for loss shall not exceed the amount allocated for that activity.

c. A complete accounting of the financial matters of any CORA activity or project will be made available to the financial supporting societies when funds are returned.

d. The CORA fiscal year shall be January 1 to December 31.

e. In the event of dissolution of CORA, all wind-up expense, payment of outstanding obligations and distribution of of excess assets shall be made as provided by law. In no event shall distribution be made to individuals.

ARTICLE 6 - EXPENDITURE OF FUNDS: The President shall authorize any expenditure up to an amount of $25.00. Expenditures of funds above $25.00 require the majority concurrence of CORA's Officers and Board of Directors in attendance.

ARTICLE 7 -VOTING: All matters of CORA shall be decided by a majority of the Director Members present at any meeting.

ARTICLE 8 - MEETINGS: Meetings of CORA shall be called by the President as may be necessary to conduct activities meeting the several objectives stated in Article 2 above, usually the fourth Tuesday of each month. Advance notice of meetings including time, date and location, shall be given all Director members.

ARTICLE 9 - CHANGE OF CONSTITUTION: This constitution may be amended by a majority vote of the Director members present at any regular meeting provided that Director members have received thirty-days-advance notice of the proposed change.

Approved and adopted 28 May 1976,
As Amended 23 Oct 79, 26 May 80 and 26 Aug 80.

BYE*BYE TET.....

TET USA, Inc., maker of fine antennas and other amateur gear will be moving from its headquarters in Norman, Ok. to larger facilities somewhere in Southern California on or about October 1st. Neal Smith, KF5T, says to watch the magazine ads for the new address and phone number. We are all sorry to see TET leave our area, but we wish them well in sunny California.

HOME GROWN.....

Having an equipment manufacturer within a reasonable distance from my QTH is certainly something different for me. As a matter of fact, when I moved to the OKC area, it was a shock to be able to drive down the street and look at some gear or buy a part. Having grown up in a small, western Oklahoma town, I just assumed that everyone ordered their parts from Allied Radio, Lafayette, or Radio Shack (yes, Radio Shack used to sell by mail). You just didn't buy a PL-259 at the drug store the same way you bought your guitar strings. I'm not making a commercial for any local dealer, but I think it's great to be able to go to the store, buy something, and walk out with it in my hot little hand. You don't even get instant service with a toll free 800 number and your VISA card.

SCARS BUSINESS.....

SCARS president Wade, KB5EK, called the meeting to order at 8:45 a.m. on 12 Oct. H.O. WA5MLT gave a report on the ARRL. The SET (Simulated Emergency Test) was announced for October. Jack, WB5TZZ, and Jerry, W5HCJ, talked to the new manager of the Red Cross, and as the locks have been changed, both men have been issued keys to the building. Jess, AF5X, was appointed to act as a nominating committee and will have a proposed slate of officers ready for the October meeting. W5UCJ and K5KDR will begin to make arrangements for the Christmas party. a discussion of dues and repeater maintenance will be taken up at the next meeting.

-- WA5RPP

A BRIEF BIOGRAPHY OF THE FAMED Q.R. ZEDD

In response to the tremendous interest in last month's column about the famed Oklahoma DXer, Q.R. Zedd, we humbly offer a brief biography of that greatest of radio amateurs for the benefit of the unfortunate few whose lives have been impoverished by lack of knowledge about him and his amazing exploits.

Zedd was born in August of 1927 during the great DXpedition to Tibet. His mother, Constance Wilhemina (Areff) Zedd, was operating the No. 1 CW position on the expedition, and went into labor during the third day of operations on a mountainside in a blinding blizzard. Members of the party were dismayed that she had her baby under such circumstances, especially since it was a difficult labor and caused her CW QSO rate to drop below 100 per hour for several hours. She was a brave girl, however, and stayed at the key all through the night, clutching her infant to her breast with one hand while keying and logging with the other.

Zedd's father, Zepp Zedd, was of course also on the expedition. Unfortunately, an avalanche killed him on the fourth day and members of the party said it was lucky the weather was so cold or otherwise they might have had to interrupt the expedition to bury him more properly.

Zedd's widow (Q.R.'s mother) was undaunted by the tragedy and continued to take part in famous expeditions designed to hand out a new country to the worthy. In the Congo in 1930, at the age of three, Zedd himself worked his first 5,000 QSOs while relieving his mother as a CW op. He stuttered badly and did not spell very well, but as his mother wrote in QST subsequently, "Who cares if he can spell as long as he sends 35 words per minute and gets the calls in the logbook right?"

By the time he was six, Zedd was holder of the highest license class in several countries. During World War II he invented radar. After perfecting TV and the plastic milk bottle in the early 50s, he retired, independently wealthy, and returned to his first love, amateur radio. As is well known, he invented SSB.

Zedd was married in 1957, but two years later his bride divorced him in a singularly messy trial during which she claimed their union had never been consumated. Zedd's defense, that it was during a peak in the sunspot cycle, was thrown out of court by a judge who later dabbled in CB. The closing argument by Zedd's lawyer, "Nobody Has Time For Everything," (sometimes referred to as the "Wives Are Always Around, But Sunspots Only Peak Once Every Eleven Years" argument) quickly became a legal classic despite the fact that it was made in a losing cause.

Zedd lives south of Norman on his modest 800-acre antenna farm, where he operates around the clock from his five-transmitter station. Airline pilots on north-south routes sometimes point out his taller towers to passengers while flying well around them. In addition to six rhombics, Zedd has stacked 10-element monbanders at 600 feet on all bands from six through 160, and, of course, a few dishes and long wires for more exotic bands.

Zedd has worked everything on every band. One of his favorite pastimes is to crack a pileup every hour or so when a rare one is on in order to tell the operator at the other end how his signal sounds now compared with earlier, to send fond regards to the op's wife and children, and if he is in an expansive mood to test various of his homebrew speech processors. Zedd has worked the Russian Woodpecker on seven bands and has the QSL cards from Box 88 to prove it.

A modest man, Zedd lives alone except for the company of his nubile 19-year-old blonde QSL secretary (herself holder of an Amateur Extra license and the coveted Yodar Kitch award on ten meters). He often honors Norman's Tuesday morning coffee group with his presence, and sometimes lets them fondle some of his cards. He is a charter member of SCARS.

Asked how it feels to have worked more than 400 countries on seven bands, Zedd replied with characteristic modesty, "Shucks, it warn't nothin'. Anyone can do it if they're willing to invest a little time and money, and become a genius at operating on the bands."

Zedd's many incredible feats of DXmanship, as well as his many one-man expeditions to remote and exotic DX lands, are beyond the scope of a single article. If we again experience a tremendous outpouring of intense interest in this grand man, we may be able to secure a fullscale interview with him and report further on his exploits in some subsequent issue.

--WB5TZZ

## THE ASCII GROUP

The newly formed group sometimes known as the ASCII GROUP for want of an official name has been formed. The group meets every second Thursday at the Heathkit Store at 8.00 P. M. The purpose of the group is to promote ASCII communications over the air. They now have taken over the 10 - 70 repeater and have it on the air. While its primary purpose will be for the use of ascii, it will also handle voice, at least for the time being. If you are interested in computors and/or ascii then give it a try. If you just want to talk about computors that is reason enough to get with the group on one of the weekly Thursday night nets. The net is voice and is at 9 p m. Also any night at 9 p m is a good time to find some one as that has been set as an informal net or calling time.

## ALTUS AREA AMATEUR RADIO ASSOCIATION

The Altus Area Amateur Radio Assn. held its monthly meeting Thursday September 10, 1981 at the North Main Fire Station with thirteen amateurs and one hopeful present. The majority of the meeting time was taken getting the club records in order due to the loss of our secretary who was transfered to Alaska.

Special guests were Joe, WA5MCS and A.L. WA5MCR came over from Crowell, Texas and reported on the Crowell repeater project whick will be linked into WR5ANX here in Altus. Gene, N5CDU and Al WD5 IQR from Vernon, Texas also came over and reported on the Vernon project.

A discussion on the SET scheduled for October lead to a decision that we should all cooperate on this project as during severe weather season the weather net includes us all.

The next meeting will be held at 6:30 P.M. at the East City Park on the northwest corner and will be an Ice Cream Social. Members and Guests are invited and bring your family.

73's Dwight WB5KRH



## HOW OLD ARE YOU?

Age is a quality of mind
You have left your dreams behind.
If hope is cold, if you no longer look ahead,
if your ambition fires are dead.
Then you are old.

But if from life you take the best.
If in life you keep the jest, if love you hope, now matter how the years go by,
no matter how the birthdays fly,
Then you are not old.
from Fritsch, via KA5GEP

FOR SALE ALL TYPES OF PRINTED CIRCUIT BOARDS CIRCUITS OUT OF QST,73,HAM RADIO AND OTHERS CALL BOB WA5CJG 376-3569.

FOR SALE TRS 80C COLOR COMPUTER WITH 16K RAM AND EXTENTED COLOR BASIC VER.1.0. PRICE IS ONLY $425.00 CALL BOB 376-3569.

Monday is an awful way to spend one-seventh of your life.

All you need to grow fine, vigorous grass is a crack in your sidewalk.

A pedestrian is a man who has two cars, a wife and one or more teenage children.

Tact is the art of making a point without making an enemy,

FOR SALE: Kenwood Twins (T599A/R599D). 2 VFO Capability and a variety of combinations R & T. Used 4 yrs. by a little old MARS OP. Never failed. $600 with OP/SVC manuals. Jess McKenzie, AF5X at 329-1543 after 6pm or weekends.

# THE BIG SIGNAL NEWS

OKLAHOMA CITY AUTOPATCH ASSOCIATION, INC.

The NEW AUTOPATCH is INSTALLED and OPERATING on 81-21 !! Our congratulations and appreciation to the two OCAPA members responsible for this fine work. Larry, WB5NYX designed the patch and Buddy, KA5AOY constructed it. It is a sophisticated re-generative autopatch, which "regenerates" the de-coded tones prior to transmission to the telephone system.

Operation of the new patch is slightly different, and there will be new access codes. All paid-up members will receive the codes and operating in-structions. Read the directions carefully and you will have no difficulty.

OCAPA repeaters are open to any licensed amateur, but the autopatches are closed except to active members. Of course, a member can access the patch for a guest, transient, etc. The new two-digit access codes must remain confidential in order to be effective. By the way, the new patch is capable of muting the access tones on the output, so the potential moocher with a tape recorder can forget it! Hi.

For general interest, the RX antennae for 22-82 and 81-21 are now located at 1200 feet. TX antennae are located at 880 feet, but 81-21 will be lowered to 700 feet in the future when new heliax is run. TX output on 81-21 will be increased to more than compensate for the loss in antenna height.

Frank, N5FM has been appointed Emergency Coord-inator for the club. He is in charge of all poss-ible emergency contingencies for OCAPA, including Weather Net, emergency equipment and operation. Frank welcomes your suggestions and help.

John Spivey has been appointed Director of Public Relations.

Art, W1GOM has been appointed Program Chairman. Art would like to hear your ideas for future programs. Give him a call at 947-5347.

Thirty-three members and three guests attended the September meeting. We welcomed several new members including: Sue, N5CTT; Ralph, W5JCO; Elmo, W5JCB; Thelma, WB5WBJ; Frank, N5CIJ and Paul, WA1LGG. In the future, all new members will receive a membership packet which will include the repeater operating guidelines, club constitution and by-laws and a roster. A copy of the by-laws will also be sent to current members with the new autopatch instructions. Note the amendment to Section IX.

Perry, K5URJ reports that the 6-meter repeater is alive and well. 6 meters has really come of age because the repeater now has a resident kerchunker! Perry badly needs a solid state XMTR strip capable of 6 meter operation. Any calls would be welcomed.

Rueben, WD5FKF reports that the 450 Mhz repeater is operating OK. Audio on the telephone line is down, but all else is satisfactory. A new person is needed for the 450 Mhz technical committee. Requirements are a working knowledge of UHF gear plus the in-testinal fortitude to climb up 650 feet! Call Rueben to discuss this appointment.

In closing, I would like to repeat that all OCAPA machines are "open" to licensed amateurs. The auto-patches are for use of members only. The club has expended nearly $8,000 this year for maintenance and improvement of the repeaters. Our membership bears this expense and we cordially invite area hams to join us. We enjoy your use of our facilities and we need your support to continue our excellent program.

The next OCAPA meeting will be held OCTOBER 20 at the Fire-Police Training Academy located on North Portland between Reno and N. 10th Street. Time is 7:30 PM. (0030 UTC) 73 de AD1S.

## OK DX ASSOCIATION

The liveliest OK DX meeting (ever) was held on 14 September. We hope that word-of-mouth will en-tice additional DX fans to join us for the next meeting: OCTOBER 12 6:30-8:00 PM

at the HOFBRAU Water Hole
3333 N.W. Expressway

Sandwiches, Dinners and Num-nums served!!

As a reminder, OK-DX is not a club. We welcome any ham (and spouse) who has an interest in HF DX. We have no dues, no officers, no minutes. We do have informal exchange of information about band conditions, QSLs, upcoming DXpeditions, new countries, and almost anything else.

In addition to everything else, OK-DX meetings are the perfect place to tell fish stories about your DXCC totals!

In order to make the year-end issue of QST, your updated DXCC status must be submitted to the ARRL no later than September 30.

Coming up on the bands: JX8A Jan Mayen will be op-erating all bands during CQ-WW contest. Look for alot of other goodies on during this test.

FB8WG/Crozet is rumored for late October or early November.

WB1GDO/CE0 San Felix is expected in late October, but could come up sooner. The Greek operators had to back out due to licensing problems, but GDO has added a couple of Chileans to appease the angry natives...

AD1S would like to plan a YV0 DXpedition for 1982. I have made several inquiries with YV clubs, but we'll need stateside support. Does anu (pronounced any-you) have some ideas? Aves Island has been silent since the 1979 hurricane which claimed the lives of the weather crew on the island...including one ham operator.

We hope to have as our guests two DX ops for the October and November meetings. We hope their sched-ules permit KH3AB - Bill to join us in October and H44SH - Stuart to be with us in November. These two fellows have given many a new one...and have some interesting stories to tell. 73 de AD1S.

FOR SALE: Kenwood TS120s with shop manual. $495.00 Call Art, W5PTM, 732-8401.

# GREAT PLAINS A.R.C.

We had fourteen members and guests present at our September meeting. We had a very pleasant session visiting before the meeting but finally got started. The minutes were read and approved. The treasurer's report was read and approved. We held 13 nets in August with two weather nets and 146 checkins.

Again I want to remind everyone that the upgrading classes will be starting with our October meeting. If you are interested and want further information you may contact any of our club officers. Their phone numbers are on page 3. We will be starting with a review of the novice class and go as far as interest warrants. Again, they will be starting OCTOBER 6.

An invitation has been extended to Woodward's city manager, Ed Dawson, to visit the radar site. He accepted the invitation and did visit during one of our storm alerts. He saw the action first hand and showed great interest. He said he would be out again to visit. We are very happy to see this interest so that we can work together for an emergency that all hope will never happen.

We talked about setting up a booth at the Woodward county fair. I want to report that we did have a booth a HF rig and two 2-meter rigs. We had many interested visitors. N5CCV, Gerald, was working CW which proved to be the attention getter. He also checked into the 5 o'clock net. This was our first time at the county fair. We had a lot of fun and have many ideas for making our booth even better next year.

KØCIO, Larry, Has invited all hams and their families to his home at Coldwater KS Sept. 20 for a picnic at his lake. A covered dish picnic is planned with swimming and fishing if you desire. There will be a transmitter hunt. From past experience I can assure you will have a grand old time visiting at Larry's and his XYL's, Eleanor.! !

Members discussed the possibility of puting ARRL publications in the local library. N5CCV, Gerald, read tha article from the ARRL Radio Club News to the club. WD5DHG, Donna, was asked to check with the library to see if they were interested.

Our meeting adjourned at 8:45 and the majority of us met again at the Pizza Hut for our usual "after meeting meeting"! We continued our visiting started before the meeting. When we left everyone was groaning from all the g good food, but the evening was far from over. On the way home we had a large round-robin going on 2-meter that included some of our fellow hams that were too far away to attend!

On August 28 WB5EGZ, Doug, Woodward civil defense director, received a call from the Okla City Weather Dept on tha NAWATTS line that there was a severe cell developing in the Buffalo area. They wanted us to send spotters out. The radar was turned on at 10:13 pm by N5CMW, Bill, and WB5EGZ, Doug. KØCIO, Larry, at Coldwater KS was net control. There was hail, high wind and hard rain.The cells had tops as high as 50,000 feet. Those helping with the storm net were WB5EGZ, Doug, N5CMW, Bill, WB5EDD, Oren, WBØPGD, Ron, WBØQGW, Carla WA5PLW, Wendle, WB5OVQ, John, WB5OVT, Rod, WN5LUI, David, KA5AAE, Jim, N5CCV, Gerald, W5HLZ, Lee, KC5OU, Harry, WØDOZ, Ansel, KAØKEK, Nolan, KØCIO, Larry, N5AKN, Sonny. The area covered was Vici, Sharon, Gage, Shattuck, Rosston, Beaver, Woodward, Mooreland and South Central Kansas with a radar contact with Ashland KS. Radar was secured at 12:44 pm.

On August 31 a storm net was called. The police had spotted a tornado above the ground in the Waynoka area. Those responding to the weather alert were WB5ECP, Doc, KB5XI, Gordon, WB5EDD, Oren, KØCIO, Larry, KC5OU, Harry, N5CCV, Gerald, WBØPGD, Ron, WBØQGW, Carla, WN5LUI, David, and WA5PLW, Wendle. WB5EGZ, Doug was at the radar and WD5DFH, Bill was net con.

On September 8,9 and 10 the Fall Civil Defense Seminar was held in Oklahoma City at the Ramada Inn. WB5EGZ, Doug, said that there was over 70 area directors in attendanve. There were eight representatives from the seven counties in the northwest area for the largest attendance ever. Mr. Wilson from Taloga was e elected the new northwest director.

WA5PLW, Wendle, has been making improvements on the 147 72/12 repeater concerning temperature changes within the building and a warning system indicating when the repeater switches from ac to dc power. A great job, Wendle!

KB5XI, Gordon, and XYL Joy are almost ready to move into their new home. They have done a great job remodeling it. It sure looks nice.

KØCIO was talking about his antennas and new tower that were to arrive in 6 or 7 days and made the statement that since it had rained and he couldn't cut hay he aught to jump in the pickup and go after it. Well, he was talking to the wrong two guys because WBØPGD, Ron, and KA5AAE, Jim, quickly took him up on it. (CIO lives at Coldwater KS). Before another hour had passed KØCIO found himself on the way to pick them up and on to Plano TX to get the tower. He not only got his tower but KA5AAE also bought a tower. They don't have them up yet but they'l sure be nice when they do! By the way they swear they were extremely good guys. That the trip was too long and fast to be otherwise. But, anyone that knows these guys .....

Well it finally happened. I came home from work and my watermellon patch was bare of all ripe mellons! When I left for work that Friday morning all was apparently calm. And it was, until my OM WBØPGD walked out and saw two coyotes run out of my garden. (They had been serenading us every evening.) Well folks, I reckon he "lost his cool". Anyway, he went to the patch and loaded 25 melons in the pickup. He was tired of feeding four legged varmints! He had a barrel of fun giving them away. I wonder if he will beat the coyotes when the next bunch ripens!

A side note to the melon story. He met W5ZUS, cal, in the barbershop. Cal had his little grandaughter with him. PGD gave them a melon. Well, they were on a motorcycle and Cal told her she would have to hold the melon. Picture this; grandad in back, grandaughter in front with both arms tightly wrapped around that melon! When Cal got home he called the barbershop and told the guys he believed that if there had been a wreck she would have saved that melon!

73 WBØQGW

## THE ZANY NEWS FREQUENCY

By JOE, WA5ZNF

This month's column will attempt to answer some of the questions we have received. Most of them have been covered in CORA meetings but the word doesn't always get down to everyone.

Q HOW MUCH DOES IT ACTUALLY COST TO GET MY OWN COPY OF C&E DELIVERED TO MY MAIL BOX?

Last month we mailed 887 copies. There were 32 pages. Your copy cost 32¢ to get to you (not counting the literally hundred hours of volunteer work by dedicated members). That price includes - printing, folding, stapling and the postage. Multiple club memberships and advertising made up the deficit. Before going to the new format it cost even more and clubs had to supply volunteer labor to fold, staple, etc. That is now done by a new printer at $60 to $100 per issue less.

Q CLUBS A LONG WAY FROM THE OKC METRO AREA WANT TO JOIN CORA TO GET C&E. WHAT ARE THE ECONOMICS INVOLVED?

See above. BUT, after the 887 are mailed the total cost per member, subscriber is:

| ZONE | 10 copies to this zone | TOTAL COST (print, mail) |
|---|---|---|
| Oklahoma County | " | 8 ¢ |
| 2 | " | 11 ¢ |
| 3 | " | 11.4¢ |
| 4 | " | 11.6¢ |
| 5 | " | 12 ¢ |

(Zone 5 covers all surrounding states)
Mailing is now done on an informal, unscheduled basis and only a couple of people are needed to stick labels on and bundle.

Q I HAVE SOME HAM EQUIPMENT I WANT TO SELL. WHAT DOES AN AD COST ME? I AM A CORA MEMBER.

There is no charge for a "classified" ad as long as you are not in the business. Personal equipment ads are welcome. Give to your club editor if possible. Business "display" ads are charged for at $30 for full page, $17 for half page and $9 for a quarter page. Business card ads may be run for one year, 12 issues, for only $30. If you turn in an ad your club will be credited with 25% of the amount - if you ask for it.

Q WHY DOES MY CLUB SECRETARY/TREASURER HAVE TO SEND OR GIVE ME A YELLOW SLIP TO SIGN, SEEMS LIKE A WASTE OF TIME AND EFFORT.

In order for us to enjoy 2nd class postage privileges, and attendant low cost (your copy would cost nearer 50¢ otherwise) the Post Office requires that your signature be on file at the C&E "office" to verify that you have paid $3.00 (thru dues) for a years subscription.

Q I HAVE AN IDEA FOR A TECHNICAL ARTICLE WHICH OTHER READERS MIGHT BE INTERESTED IN. DO YOU WANT IT, AND HOW DO I GET IT TOGETHER.

Sure we want it. That's what the C&E is all about - share the information and knowledge. You don't have to be a professional writer, just have the desire to share. Write it the best you can, type it or send it in longhand, draw schematics the best you can and give us permission to edit and redraw. We will print it as soon as possible. Sometimes articles that are not fighting the clock are held over so that we will have an even number of pages. We have to end up with 16, 24, 32 or 40 pages each issue.
If you type or draw, keep columns to 55 spaces for ELITE type, 46 spaces for PICA OR 4 5/8".

Joe Buswell, K5JB, Mike Salem, N5MS, Harry Dannals, ARRL, Ray Miller, W5REC, Ellard Foster, W5KE.

Awards were made to the four gentlemen pictured above at the Saturday night banquet at Ham Holiday/ARRL West Gulf Convention. Each is well known in the area for giving, giving, giving of their time and talents to further the interests of amateur radio. It would take a couple of columns to detail the reasons for those awards - suffice it to say: "You could not have picked a better crew."

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Q CAN WE HAVE MORE PICTURES?

If they are turned in. We need them on Saturday before edit time (Always the third Wednesday of the month). Photographs need to be clear, sharp and with some contrast. It will never look better than your print. If you have a color shot that is really newsworthy you can have a black & white print made at your photo-finisher from the color negative. Have it made the same or larger size than it is to appear. Identify all people, etc. in the picture. There is not much point in running a picture without a story and a good cut line. Although the prints are needed early, always coordinate the submission with your club editor so he can plan space for it.

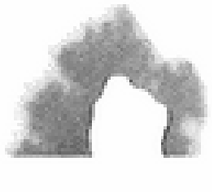
## UP A LASER RIVER ON A COHERENT BEAM DEPT.

A recent article in Electronic Engineering Times points out a new problem for Gordon Gould and Control Laser Corporation, the recently acknowledged inventor of the laser. It seems that recent space studies have shown that a natural occuring laser action on Mars might threaten Gould's position as the inventor of the Laser.

Air Force researchers have detailed a laser action which takes place at the dry-ice sections of the Martian ice-cap. The laser action occurs when sunlight falls on carbon dioxide at the ice cap. This sunlight-pumped carbon dioxide laser system poses a threat to Gould because of the Patent Office's rule that prohibits the patenting of a "natural phenomena." Gould has spent quite a bit of time and money rightfully claiming the patent from the previously acknowledged inventors, Charles Townes and Arthur Schawlow of Bell Laboratories. He has also instituted several suits for infringment of patent against various companies that have been paying royalties to Townes and Schawlow. Also, Control Laser Corporation of Orlando, Florida is suing Gould to set aside his patent rights and is expected to cite the Air Force's discovery to show that Gould patented a natural phenomenom. This would, of course, be the first time that anyone has cited an unearthly natural occurrence for the purpose of challenging a patent.

Micheal Salem N5MS





HAM HAPPENINGS REFER TO CLUB SECTION FOR SPECIFICS

# OCTOBER

| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
|---|---|---|---|---|---|---|
| | | | | 1 | 2 | 3 |
| 4 | 5 | 6 GP | 7 | 8 ALTUS AREA | 9 | 10 |
| 11 CALLMET WEATHERTRAC ARC 0-17 2:30 | 12 CHOCTAW ARC USAF MARS | 13 Shawnee | 14 | 15 kay | 16 | 17 SET |
| 18 SET EARS | 19 ARES | 20 | 21 EDIT 16 | 22 | 23 | 24 |
| 25 | 26 | 27 Shawnee Amateur Radio C.O.R.A. | 28 | 29 | 30 HAMARAMA | 31 |