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CENTRAL OKLAHOMA RADIO AMATEURS  
**COLLECTOR AND EMITTER**



50¢

SECOND CLASS MAIL  
POSTMASTER, SEE PAGE 3

HAM HOLIDAY & ARRL WEST GULF CONVENTION - JULY 28 - 29 - 30

## WHAT IS POLICY ON NO-CODE?

Many members are asking League officials what is "ARRL policy" with regard to the current discussion of a possible no-code class of amateur license. Here is some background.

After the FCC was forced to back away from its own 1983 no-code license proposals, the ARRL Board established goals for growth in the number of FCC amateur licensees and in the ARRL membership. Given that at the time there was strong sentiment against reducing the entry-level requirements for an amateur license, ARRL looked for ways to improve the marketing and increase the attractiveness of the existing entry-level license. These efforts led to the Novice Enhancement proposal which was submitted to the FCC in mid-1985 and was adopted in early 1987.

Novice Enhancement proved to be successful in several ways. On-the-air activity of Novices and Technicians increased dramatically. Upgrading and the rate of license renewal by Novices both surged upward. Novice Enhancement also motivated some people to clear the licensing hurdles who previously had not wanted to make the effort; however, in the first 18 months of Novice Enhancement the numbers of licensees did not increase as much as had been hoped. The FCC decision to reallocate 220-222 MHz (the fight for which is far from over!) caused many amateurs to attribute new significance to the issue of growth. This, coupled with widespread publicity about the expected phasing out of Morse code in the maritime service, suggested that the time may have come for another look at entry-level requirements.

Last November, ARRL President Larry Price, W4RA and Executive Vice President Dave Sumner, K1ZZ, collaborated on preparation of an editorial for the January issue of *QST* entitled, "Why Morse Code?" The editorial called for a rational discussion, within the democratic framework provided by the League, of the no-code license issue. Advance copies of the editorial were distributed at the December 10 meeting of the Executive Committee. Subsequent discussion led the Executive Committee to instruct President Price to appoint a special study committee, made up of representatives from the Board, the amateur community at large, and the Amateur Radio industry, to explore the implications of a no-code class of amateur license.

The study committee was appointed January 9 (see *ARRL Letter*, Vol. 8 No. 1, January 13, 1989) under the chairmanship of Vice President George Wilson, W4OYL, and immediately began its work by correspondence. Several committee members

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## The South Canadian Amateur Radio Society

### SCARS

met on the Saturday the 11th of March 1989 at the Red Cross. The meeting was called to order at 0937L by president Andi, WU5W.

The minutes of the February meeting were published in C&E. No one had any questions about the minutes so they were approved unread.

The treasurer, WB5RZX, announced that the account had \$1640 and dues were still being collected.

### Old Business:

Mini Baja - April 13 - 15, Bob Guthrie has organized the radio operator volunteers for support of this event. Enough people have said that they will help. A schedule will be set up for the operators this week.

89er Stage Race - This will be a sort of warm up for the radio support of the Olympic Festival bicycle events. Steve Wolfe, N18W, is organizing the operators for this event.

Olympic Festival - Steve is also signing up operators for the cycling events here. ALL volunteers must attend a mandatory Olympic Festival volunteer meeting. See Steve for the forms and details.

Technical Committee - Following discussions at the last meeting about the absentee technical committee this body has been expanded to include the following "volunteers" (some of whom "volunteered" under duress): N5HZR, K5PL, K5KUK, N18W, KA5EFJ, N5BEW. When ever someone notices that there is a technical problem with the repeater they should notify WU5W or N5HZR of what is wrong including symptoms and the time they occurred.

Storm Watch II - The second severe weather spotter seminar will be held on 25 March 89 at the Norman Public Library from 10 am to about 4 pm. Andi would like help setting up for it and if some people would bring cookies and "stuff" they (the cookies) would probably get eaten. No formal cookie roster will be established.

CONTINUED NEXT PAGE



## ALTUS AREA AMATEUR RADIO ASSOCIATION

The Altus Area Amateur Radio Association held its monthly meeting at the Altus North Main Fire Station on 9 March.

Present for the meeting were Bob N5NQO, Joe W5CCV, Bryan AA5BR, Chuck WD5BBN, Terry K5HP, Dwight WB5KRH, Phil K9PNT, Frank AA5IT, Clyde W5ZDI, Deanna WB5UMH, Paul WD5BBO and Mike W5VXU.

The treasurer's report showed that the Club has \$340 on hand.

After some serious discussion it was decided that each member should put in writing his or her feelings on the No Code situation and then the secretary will put together a letter to the ARRL stating the Club's opinion on the matter, once and for all.

With the clearing of the weather in the area it was decided that the Saturday morning breakfast meetings would be started again.

The next one will take place at the Quartz Mountain State Lodge on Saturday, April 29 at 8 am. All amateurs are invited to attend. No serious business will be discussed since most of the time will be taken up by visiting, and general fellowship.

Dwight has gotten himself in the local newspaper on several occasions and on the radio station as he is trying to get the community ready for the next storm season.

Frank is still working on putting together a large RF amplifier but his efforts have been slowed a bit due to an ORI at the airbase.

Bob is still trying to clear up a massive radio noise problem in the alley behind his house.

Mike is in the process of getting another tower. The one he just bought from Rupert is still in its original location and no progress has been made yet in taking it down.

Mike, N5VXU

## More STARS

License Class - Will be starting at 7 pm on Wednesday the 15th. The faculty will include NSMAF, NI8W, and WA7UDK.

### New Business:

ORSI Meeting - N5KUK Attended the ORSI meeting last month. Some corrections were made to the repeater information with the state coordinator. ORSI members voted to request that N6CL and N5MS assist with the telephone rate problem that is facing the repeater operators.

### Committee Reports:

Technical Committee - Nothing to report other than the expansion of the committee.

NWS - Weather Net control operators have been signed up for the spring season. A training session will be held, next week if possible and a schedule should be available then.

ARES - Anyone who plans to be a storm spotter and has not attended one of the past training sessions should plan on attending on the 25th.

CORA - We need someone to volunteer to represent us at CORA meetings. CORA is progressing on Ham Holiday and have had some dealers confirmed already.

Guests: Jerry, KAOPFZ and Bob KO4Z were visitors at the meeting.

Door Prize: There was one and someone won it after a mis-draw but I didn't write down who won what.

The meeting was adjourned at 0957 local time.

Ken, N5KUK



## NO CODE ?

were present at the Florida State Convention (Miami Hamboree) the weekend of February 4 and were able to attend meetings of the informal industry group which has been discussing the issue of Amateur Radio growth for the past four years, as well as to get together themselves. The first formal meeting of the study committee is slated for March 11.

Between now and June, the study committee will be developing a report for the Board to consider at its July meeting. The report may or may not include a recommended League position. The Board may or may not accept such a recommendation. ARRL policy will be whatever eventually garners the support of a majority of Directors. There's no way anyone can know at this time what that will be.

In the meantime, a reasonable statement of ARRL policy that reflects the Executive Committee's December 10 action is that the subject deserves careful study over the next several months. Any member wishing to provide an input to that study should be encouraged to address the study committee members, either individually or c/o ARRL HQ, as well as their own Director.

### The ARRL Letter

LEASE or SELL: DX-QTH. 55 Ft tower, 3 Yagi beams 10, 15 & 20, TV satellite dish on extra lot. Brick house near university, Mid-Hi and grade school. 3 bed, 2 bath, 2 car garage. For photos write Box 927, Edmond OK 73083 or telephone 341-4209.

last club meeting. We couldn't let this feat go unnoticed, so good luck, Gerald, and try to cut down.

## TORNADO

The severe weather season is upon us. It is time to limber up the 2 meter rig and peel an eye toward the sky. Hopefully the weather will be mild but we've had several years of good times and our luck can't hold forever. To help us stay lucky, National Weather Service meteorologist Bill Bunting will be giving severe weather spotter training seminars in a number of Oklahoma communities. Bill is from the NWS office in Norman, Oklahoma. Bill will be in Woodward on April 10th at 7:30 p.m. The place has yet to be determined depending on the expected size of the turn out. Keep checking with Andy Taylor. Leon

## GREAT PLAINS A.R.C.

WSMGN Repeater 146. 13/73

The March meeting was called to order by president Windle Hatchett. The minutes of the last meeting were read by Rod Ford and a financial statement was given by Freida Patterson. The main order of business was the upcoming eyeball QSO to be held in the great city of Mooreland on April 1st and 2nd. All plans for this event including tables, concessions, communications, and programs were discussed and finalized. Tammy Bowman is in charge of the children's program and Freida Patterson is taking care of the ladies program. A major event such as this creates a lot of work and everyone has been very generous with his time. The list of volunteers to make this a success would be too large to print so a big thanks to everyone involved.

Andy Taylor, Network Manager, Oklahoma Service Network, reports that 12 sessions, 118 check-ins, and 3 pieces of routine traffic was handled for the month of February. Sixteen members and one guest were present for the March club meeting.

## NOVICE CLASS

Gerald Bowman says that the new novice class is coming along nicely. Everyone enrolled is enthusiastic and working hard to learn code. The class meets every Monday at the Mooreland High School. Everyone is welcome to attend. Novices are the new blood of our hobby so please be sure to encourage anyone you know who might be interested in being a ham. Anyone wishing to donate one hour of their time to help by conducting a demonstration or class discussion on theory, safety, antennas, or anything relevant, please call Gerald or Leon.

Jodee D'Avignon gave the novice class a demonstration of packet radio at the last class. He explained repeaters, TNC's, and programs and generally had everyone's unblinking attention.

By the way, Gerald smoked his annual cigarette at the

# 1 AERONAUTICAL CENTER ARC

MEETS: FIRST THURSDAY, FLIGHT STANDARDS BUILDING, FAA, SOUTH MACARTHUR 7:30 PM

PR TED ANDERSON, NYSM 685-4016  
SE DOUG TEACHMAN, W00XA 392-5458  
AsPR HAROLD TODD, WASVAQ 685-3685  
AsVP CHARLIE GREENE, WASJ6U 943-5631  
EDITOR: BILL OLIVER & LUKE ELLIS 329-6333

# 2 CENTRAL OKLAHOMA VHF

MEETS: 11:00AM THIRD SATURDAY, THE BEAT

RESTAURANT, 3100 N PORTLAND, OKC

PR JACK MUSE, WBSZKZ 691-1152  
VP FRED BOARDMAN, WSNL 427-2505  
SE JOE BUSWELL, K5JB 732-0676  
TR ELLARD FOSTER, WSKE 789-6702  
EDITOR: JOE BUSWELL, K5JB 732-0676

# 18 GREAT PLAINS ARC

MEETS: 2:15 PM FIRST SUNDAY

WOODWARD PUBLIC WORKS BLDG.

PR MINDLE HATCHETT, WASPLMFT SUPPLY 766-3561  
VP BOB BAYLESS, WBOGAX NONE  
SE ROD FORD, WBSOVT(SAGE) 923-7683  
TR FREIDA PATTERSON, NSEOX(WOND) 256-2111  
EDITOR: LEON CARLISLE, K8SC2T

# 4 OK CITY AUTOPATCH

MEETS: 7:30PM, THIRD TUESDAY

SALVATION ARMY, NW 50 & PENN

PR ROBERT SHAW, WASBQI 341-4763  
VP DENNIS PATTERSON, WDSOSM 495-0769  
SE LEONARD HANSTEIN, WSMEL 789-7201  
TR LARRY DAVIS, KFSJN 722-4564  
EDITOR: CHUCK WILHITE, KSNK 721-4926

# 5 OKLA UNIVERSITY ARC

MEETS: 7:30PM SECOND TUESDAY (SEP-MAY)

115 WILSON CENTER, 1334 S JENKINS

PR FRANK DONALDSON, NS10J 329-4172  
VP JOHN MUSTENBERG, KESN 325-2382  
S/T JIM GREENSHIELDS, WDSHPU 321-9981

# 6 ALTUS ASSOCIATION

MEETS: 7:30PM, SECOND THURSDAY, NORTH

MAIN FIRE STATION (CD) ALTUS

PR FRANK FERITTA, AA51T 482-1398  
VP NONE  
S/T MIKE SCHENKEL, WSVXU 482-1797  
EDITOR: MIKE SCHENKEL, WSVXU 482-1797

# 7 BICENTENNIAL (76er) ARC

MEETS: 8:00PM SECOND TUESDAY

OKLA CITY COMMUNITY COLLEGE, ROOM 2NS

PR DENNIS MUSSEY, KAS6TM 524-4760  
VP BILL SKIPPER, K8SBS 392-4612  
S/T JERRY SPROUL, NSAHM 354-2061  
EDITOR: CHRIS EVERETT, K8S66Y 364-6794

# 9 WHEATSTRAW ARC

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

PR PERRY JONES, WSMGZ (Wiford) 772-6063  
VP GEORGE MASCHINO, K566L (OKARCHE) 263-7614  
S/T JOE GARLAND, WASFLT (CALUMET) 893-2660  
EDITOR: RALPH WILDER, WASPFK(WATONGA) 623-5421

# 19 OKLA INDEPENDENT ARC

MEETS: 7:00PM SECOND TUESDAY

SOUTHWESTERN BELL OFFICES, PONCA CITY

PR VERNON TREIBER, Jr. NSANV 767-6260  
VP TRUMAN STEINER, WBSMRE  
SE DEBBIE WHITE, NSLPF 765-5707  
TR STEVE HUSTON, K850OR 762-4726  
EDITOR: MIKE MORRIS, NSJJR 765-6260

# 11 EDMOND AR SOCIETY

MEETS: 000 MONTHS, 3RD SUNDAY, 2:00PM EDMOND

EOC. DINNER, EVEN MONTHS, 3RD FRIDAY,

PR HAROLD HELLS, WASZKX 623-5191  
VP MARTIN MCGEE, NSLIS 947-4968  
SE DAWN ROWELL, NSKMD  
TR GLORIA QUINN, K8586H  
EDITOR:

IF THERE'S ANYTHING WRONG

WITH YOUR CLUB LISTING,

CONTACT YOUR PRESIDENT TO

GET IT CORRECTED!



# 13 KAY COUNTY ARC

MEETS: 7:00 PM, THIRD THURSDAY, SEP-MAY,

PIONEER VO-TECH, PONCA CITY OK

PR MIKE MORGAN, NSLPZ 765-9539  
VP STEVE HUSTON, K850OR 762-4726  
S/T HARRY BEATIE, WDSOPR 765-3862  
EDITOR: DAVE LAAND, K8SFX 762-8616

# 14 CIMMARON ARS

MEETS: 7:39 PM SECOND TUESDAY

WXSJ PLAYHOUSE, 827 S 13, FAIRVIEW

PR JACK KELLY, NSLEN (405) 227-4515  
VP RAY BARNES, AB5Z (405) 274-3334  
SE DENNIS PAINTON, WXSJ (405) 764-3599  
TR MADINE PAINTON, NSFMM (405) 764-3599  
EDITOR: JACK DAY, NNSZ (405) 227-3462

# 15 SOUTH CANADIAN ARS

MEETS: 9:30AM SECOND SATURDAY, RED CROSS BLDG

NORTH DU CAMPUS, NORMAN

PR ANDI WOLF, WUSM 799-5150  
VP DORINDA SKAGGS, NSIVA 799-5363  
SE KEN BROWN, NSKUK  
TR MONTE BATEMAN, WBSRZX 329-7485  
EDITOR: KEN BROWN, NSKUK NONE

# 16 EDMOND AR CLUB

MEETS: 7:00PM SECOND MONDAY. SEE CLUB

SECTION FOR LOCATION AND TYPE

PR MARK NORTH CUTT, WDSOYI 755-4672  
VP WENDELL COCHRAN, WBSISO 943-4308  
S/T KAY NORTH CUTT, WDSOYJ 755-4672  
TRUSTEE: DENNIS ORCUT, WBSISN 340-0034

# CENTRAL OKLA RADIO AMATEURS

MEETS: 7:00PM FOURTH TUESDAY, RED CROSS

BLDG. 10 & HUDSON OKLA CITY (BACK DOOR)

PR FRANK TASSONE, AA56I 341-4945  
VP DORINDA SKAGGS, NSIUA 799-5363  
SE MARSHALL MADDOX, WUSP 360-3205  
TR MARK KLEINE, NSHR 329-4285

# OIDAR OKLAHOMA INDEPENDENT AMATEUR RADIO

These notes are from the March Meeting.

The Novice classes which are a joint effort of this and the Kay County club are progressing well. The students and teachers are now enjoying a two week Spring Break. It looks like this will turn out a great bunch of new HAMS in this area. Thanks to all the participating instructors.

In conjunction with this effort, a BYOF (food) picnic is planned for the 29th of April to honor the new Novices. Picnic Shelter 1 at Ponca Lake has been rented for this event. All the area HAMS are encouraged to attend this to welcome the new HAMS.

A severe weather discussion was held. There was some discussion about the upcoming spotter season and the recent training session. The upcoming Storm Watch 2 seminar to be held by the NWS in Norman was discussed. Vern, NSANV, plans to attend.

Jim DeTorto, K5FLL, gave a very interesting program on the old rotary dial phone system. This involved stepping switches and relays. Vern tells me that Jim played a tape of the sound inside the switching room, and it must have been deafening in there. Thanks a lot Jim.

The April meeting will include the election of officers. Be sure to show up if you don't want to hold an office! Dues will also be payable at that meeting.

73s!

Mike Morriss  
NSJJR

The farmer called the fire department and shouted that his barn was on fire.

"How do we get there?" asked the chief.

"Don't you still have your little red truck?" countered the farmer.

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# FLASH

## ANNOUNCING THE GREAT PLAINS AMATEUR RADIO CLUB'S ANNUAL **EYEBALL QSO** AND

# SWAPFEST

Bring Your Swapping Gear  
Lots of Free Tables

Saturday, April 1st **Mooreland, Okla.** 12:00 a.m. till ??  
Sunday, April 2nd 9:00 a.m. till ???

VE Testing Saturday, April 1st, starting at 2 p.m.

Directions: North on Main or Elm Street. Across the tracks and West just 3 blocks to city park. Shuttle service from Mooreland Airport.

Bring your family, covered dish, your own place settings & GOODIES TO SWAP!

Hamburger Fry Saturday Night at 6:30 p.m.

### \$3.00 Admission Fee

Covers Both Days  
Kids Free

No charge for tables  
No prizes  
Two motels  
20 + tables already reserved

Dinner 1:00 P.M.  
Talk in  
146.52  
146.13/73 147.72/12

Dealers Present  
Self contained Camper Parking  
6 local churches

NC5C  
Gerry N. Ford  
256-5342

NZ5T Bart  
Bart Lawson  
994-5940

WG5Z  
Gerald Bowman  
994-5453

## INDIVIDUAL IMPRESSIONS

Carl C. Drumeller, W5JJ, was a unique individual in amateur radio who made a distinct impression on all who knew him. Since Joe, K5JB, Joe, WA5ZNF and others have already acknowledged his passing into the realm of silent keys, I will confine my remarks to my personal contacts with Carl. I first met him on the air on May 21, 1953 when his call was W5EHC. It was an AM QSO on 3.9 MHz. Carl was in Warr Acres and I in Britton. I was impressed with his friendliness and dignity. Carl was interested in encouraging neophytes too. I have heard him several times QRS to their slow speed and patiently stay with the QSO. At the time I was employed as a charter TX Engr. at KWTW, Channel 9 which had recently gone on the air as CBS outlet for OKC and was a multi-million dollar showcase station with the world's tallest tower at 1572 feet. I helped install the original RCA transmitter under the direction of Morris Thomas, Chief Engr. and Hal Phillips, TX Supervisor. It was a memorable 4 years of my life from 1953 to 1957. Sometime in 1956, Hal mentioned to me that the best future in electronics for the OKC area was the FAA Academy at Will Rogers Field. Accordingly, I filled out a Civil Service Form 57 and submitted it to the FAA Personnel Office. A full year rolled by with no response till finally one day I got a phone call from Carl Drumeller. He asked if I was still interested in employment at the FAA facility and explained the year's delay was due to no slots open for my experience and salary requirements. In due time I came on board and was assigned to the Avionics Training School which had just been established. There I served with Larry Vorheis, K5RJK, a former colleague at KWTW, and we helped install the avionics laboratory and screen room. An opportunity later arose as Instructor in the "Directed Study" correspondence training Branch and I transferred to that area for about 3 years, transferring again in 1961 to a residence instructor position in the ILS/VOR Section of Air Navigation Facilities Branch. There I served as Electronics

Engr. Instr. until my retirement in July 1979.

During this period, I joined the Aeronautical Center Amateur Radio Club which Carl had helped organize. After serving as President, Carl became perennial Secretary of ACARC and first Editor of Collector and Emitter. He was a prolific writer with many published articles in amateur radio periodicals. He loved to lecture on standing wave ratio and other transmission line subjects. He impressed me as a dignified "college professor" type who chose his words carefully and had his lecture fully prepared. He had good eye contact with his audience and could draw out individual response as he lectured. Carl hated the term "ham" applied to amateur radio. He also firmly objected to the code term "XYL" applied to wives. He said "XYL" implied that the woman was no longer young nor a lady! Carl preferred "YF" instead which enunciates almost like "wife". Of course with his firm and set opinions in such matters, Carl had his detractors who thought he was too stilted and stodgy.

I ran into Carl again one spring day when a grandparent day was held at Putnam City Elementary School. He had the usual pride of a grandfather and we enjoyed a good chat as we partook of lunch in the school cafeteria. Carl's wife Mildred was with him. They had 2 sons, 1 daughter, 12 grandchildren and 3 great grandchildren. Summing it up, Carl Drumeller was a credit to amateur radio and a great guy to remember!

Charles E. Maupin, W5HQM

### No-Code Comments from KOYIY

From: KOYIY @ AGON To: ALL @ USPBBS  
Subject: No Code Reversal

After reading many bulletin board comments on the nocode argument I have reversed my position and strongly favor a no-code license. I do this with a trade-off in mind. Keep the privilege above the most populated HF and VHF bands. Abandon the question pool concept and require the mastery of knowledge of electronics and regulations. Finally, build into the requirements some specifications for becoming an operator. Perhaps a VE monitored

internship to assure that we have the beginning of something new in amateur radio that is now sadly missing. Credit for these ideas go largely to two young men; K9RZ and WFOD of Chadron, NE.

Otherwise, I see another 'golden parachute' about to open for a generation of young people who rank at the bottom of a multi-national examination (of 13 year-olds) in science and mathematics, just completed by the Educational Testing Service (ETS). At the top of the list is South Korea and second place goes to British Columbia. The National Science Foundation predicts a shortfall of 400,000 bachelor degrees in science and mathematics majors by the turn of the century, a frightening statistic in the age of the super-conducting super-collider and the spin-offs it may bring. The reason for the problem is arguable but I am convinced that instant gratification is not one of the answers. Young hams could find a new pathway to higher education via amateur radio if we will just offer them a disciplined challenge in a contemporary context. Then, reward them handsomely with amateur radio credentials for which they could have a genuine pride of accomplishment.

73 de Jim McCafferty, KOYIY, P.O. Box 68, Whitney, NE 69367

Via WB5FWE Gateway and K2GKK.

### No-Code Comments from K2GKK

I add my comments on the subject of "NO-CODE" to the outstanding thoughts of KOYIY (@AGON) which have been on the forwarding circuit since mid-February.

Many, if not most, of us who can be considered "long-timers" in this hobby have at the root of their animosity toward the so-called "no-code" proposals, a deep-rooted feeling that is basically, "I worked for MY license, why can't THEY work for THEIR licenses?". We "long-timers" need to realize that love of "CW" isn't inherently "GOOD" nor is a dislike of "CW" innately "BAD". Code is simply a ONCE-MANDATORY skill for ANY long distance communication. Many tasks that were justifiably required for an amateur radio license in the past are no longer pertinent. Is an ability to couple a rotary spark gap transmitter to a "cage" with counter-poise germane to the radio art of today? Any number of similar comparisons can be drawn.

I, like KOYIY, do not propose any sidestepping of the International Treaty requirement for a "CW" proficiency demonstration for HF operation. However, except for some highly specialized weak signal activities, virtually all VHF and UHF activity by hams

CONTINUED ON NEXT PAGE

is "Non-CW". I hardly think that a "CW" requirement is really mandatory for this operation. As anybody who listens to the ham bands (HF, VHF, and UHF alike) knows, the existing "CW" requirement has NOT "separated the grain from the straw". As one man has said, we just got less of both.

Think, I mean REALLY think, about it. What is the purpose of ANY licensing exam? It is to ensure that those persons granted access to the privileges are at least minimally qualified to use those privileges without causing harm, distress or interference to others. The skills to be demonstrated for any privilege need to keep pace with conditions in any field of endeavor. Today's training and certification of medical doctors is based on current knowledge. Should amateur radio licensing not operate under like criteria? Is our present system one which furthers the stated purposes, aims, and even the reason for the existence of the "Amateur Radio Service"? Is it not possible that changes might advance those aims more satisfactorily?

When the Novice Class License was initiated in the very early 1950s, there was tremendous "hue and cry" by men and women who were "long-timers", that amateur radio was being totally ruined and many of them actually quit the hobby. The same type of thing happened at EVERY major change in ham radio. Folks got upset and quit when vacuum tube "continuous wave" transmitters supplanted spark. I personally went through almost total replacement of AM (full carrier) by SSB. The same thing happened in the last 15 years on VHF bands with the switch from AM to FM. The little "dead bugs" known as transistors replaced most tube use. Nothing stays the same except that which is dead. Even that which is dead will decay.

Time is upon us once again to move. I hope it is forward, but to stay in one place is, in effect, to retreat. The best defense is still a good offense. As I said before, I consider the proposal by KOYIY to stop the "question pool" nonsense and require the MASTERY of a field of electronic knowledge and regulations for any "no-code" license to be a TRUE GEM on the subject of NO-CODE. 73 de Mac, K2GKK

Net/ROM Comments from WA6VSE

From: WA6VSE@WB6YMH To: ALL@USPBBS  
Subject: Comments on TheNET

To all packeteers,

Some of you may have read my vocal and sometimes abrasive comments on the NETROM/"TheNet" issue. I haven't been rabble-rousing just to get attention or anger folks.

I live in the Los Angeles basin. I know Ron Raikes, WA8DED, the author of NETROM. I met him at a packet radio conference almost 3 years ago. I discussed the development of NETROM with Ron on numerous occasions as he was creating it and, like many, personally SAW the earliest Alpha and Beta testing of NETROM actually going on.

I also know Thom, WA6IGY. (My wife graduated from high school with him.) Thom is VERY competent and honest to a fault. His analysis of the NETROM and "TheNet" source code files is impeccable. Believe it, "TheNet" is a ripoff of NETROM.

Neither of us owes any allegiance to Ron in any way other than respect. We're not related, have no common business interests, etc. Thom and I are both just ham friends/acquaintances of Ron's who are sickened by the way he has been ripped off and abused by a portion of the amateur packet community.

The amateur radio community will no longer be able to hold its head high with pride for its accomplishments in packet radio if we continue to build our networks with stolen software products. Only by publicly denouncing the ripoff, boycotting "TheNet" nodes, and locking them out of the routing tables of legitimate nodes can we erase the blot on the integrity of the entire amateur radio community that this software piracy has created.

I hope that you will support those of us who feel compelled to try and right this wrong and restore honor and dignity to amateur packet radio.

With regard to "the evil that lurks amongst us" (otherwise known as "TheNet", which is clearly nothing more than a rip-off of NETROM):

If we allow software piracy and theft to become the standard of conduct in the amateur radio community ... if we tolerate, even encourage it ... we'll cease to be worthy of the spectrum we occupy. If we condone the theft of software ... "so long as it's used to build an expanded network" ... how long before we've convinced ourselves that it's OK to steal the hardware, too? How many

new companies will endeavor to bring new products to the ham market? ("Why bother with the hams, they'll just steal our designs and copy our software!")

Putting the packet community back on the right track ... by refusing to use stolen software to build our networks in reality, more important



The March meeting of the Aeronautical Center Amateur Radio Club was called to order at 1930 by President Ted, NY5W. There were 16 members present. After a round of self introductions, Tom, K5LDI, gave the CORA report.

The treasurer, Doug W0DXA, could not give the treasurers report as he has not received the books from the last treasurer.

The person scheduled to give the program was sick. An interesting Bull Session resulted.

QSOs on the new band frequencies was discussed.

An antenna party for the station was bandied about but nothing specific was decided on.

Ted said we would have a good program next month.

The meeting was adjourned for coffee and doughnuts at 2025.

See you next month.

Bill, K5KDR

## FCC-ISSUED CALL SIGN UPDATE

The following is a list of most recently issued FCC call signs (February 1).

|              | Group A<br>Extra | Group B<br>Advanced | Group C<br>Tech/Gen | Group D<br>Novice |
|--------------|------------------|---------------------|---------------------|-------------------|
| District     | WR0E             | KF0AS               | N0KDL               | KB0DXQ            |
| 0            | NV1L             | KC1NN               | N1GGY               | KA1TFB            |
| 1            | WN2I             | KE2LI               | N2IYO               | KB2H0R            |
| 2            | NT3O             | KD3LH               | N3GVC               | KA3UDC            |
| 3            | AB4MU            | KM4NM               | N4UWY               | KC4IUS            |
| 4            | AA5JZ            | KG5RI               | N5NVT               | KB5IKW            |
| 5            | AA6MO            | KJ6OQ               | N6UHO               | KC6BTW            |
| 6            | WX7A             | KF7RD               | N7MFY               | KB7GTC            |
| 7            | WO8H             | KE8WL               | N8KIA               | KB8GKZ            |
| 8            | WF9L             | KE9OM               | N9IDA               | KB9CBH            |
| 9            | KH2K             | AH2CE               | KH2DN               | WH2ALX            |
| Guam         | **               | AH6JO               | NH6SL               | WH6CBV            |
| Hawaii       | **               | AL7KT               | NL7OK               | WL7BTO            |
| Alaska       | **               | KP2BN               | NP2CU               | WP2AGN            |
| US Virgin Is | NP2E             | KP4PV               | WP4TO               | WP4IHC            |
| Puerto Rico  | **               |                     |                     |                   |

\*\* All 2 x 1 call signs have been assigned in these areas

than packet growth, "the network," or anything else, for if we don't have our integrity, we have nothing ... no matter how rapidly we can blast bits back and forth across the countryside.

Let's show the onlookers that we're better than that!!! 73, Carl, WA6VSE (via WB5FWE Gateway and K2GKK)

# CELEBRATE 100



## SOONER PARADE

Presented By The City of Oklahoma City

Friday, April 21, 1989 • Downtown • 1 p.m.

OKLAHOMA CITY CENTENNIAL  
1889-1989

Parade Information - 231-1889



## GETTING TO KNOW

A few years ago, four or five, or maybe less, one or two, I don't remember exactly how long, but this editor introduced a new feature to the Collector and Emitter called "Getting to Know Your Fellow Members". This seemed to go over fairly well and about the only ones who were offended by the articles were those who never made it. Oh, perhaps one or two of the subjects didn't exactly like what was said about them, but they haven't sought revenge as of yet. One has said he would, but nothing has come of it yet.

Anyway, time has passed and we have many new members in the club and many new amateurs in the fraternity who missed out on these articles. I feel it is time to reintroduce one of our most noted members to the club and inform the newer ones about this rather unusual person.

First of all, he isn't a native of Oklahoma. An extensive traveler, he has seen most of the world. On one of his last tours, he made a stop in Oklahoma and fell in love with this part of the country so much, he decided to make it his permanent home. It was a difficult choice for him to make, being undecided as to whether he wanted to settle down in Oklahoma or one of the southern states. He is also very fond of Mississippi with its cajun food and especially their beer. His boyhood days were spent in the hills of some state located in the northeastern part of this great nation. He has mentioned many times that love nor money could make him want to go back to his original home. He has developed a slow southern drawl and speaks so slowly that you almost go to sleep between words. He has stated on various occasions that he feels all Yankees should go home and not bother us "Okies".

There are so many things about Oklahoma which he loves that space will not permit me to tell you about all of them. He is very complimentary of our roads and streets in our fair state. He has never seen a chuck hole that he didn't like. He feels the highway system in Oklahoma is among the greatest. Going along with our good highways and streets, he feels our motorists are among the most polite he has ever seen. Normally, when a person is about to be run over by some idiot or someone pulls out in front of you, it is your natural instinct to honk and make all kinds of

nasty gestures and remarks at the individual, but not him. He just waves and with a big smile on his face, lets the person know that anyone can make a mistake one time. He doesn't even mind getting behind an old lady who is driving about 25 m.p.h. in a 55 m.p.h. zone. This gives him more time to enjoy the scenery.

He loves our city and state governments. Many times I have heard him bless our city fathers and state governor and legislators and remark about what a fine job he feels they are doing. He never complains about the taxes he has to pay and feels they are spent very wisely in our fair state.

He isn't all that active in amateur radio. He has been an avid dxer and has probably worked all countries so many times he rarely can be heard on the hf bands, unless it is working a rare one on cw. At the present time, he is pretty much of a pack rat and even has a digipeter. Although he won't admit it on the air, I have heard him say many times that his favorite form of communications is still with the broken wire method. He loves cw and has often expressed his opinion that he feels the code speed requirements are much too low. To have the extra class license, he feels one should be able to copy at least 50 w.p.m. He would probably turn in his license if the FCC ever did away with the code requirement for obtaining a license of any kind.

He is a very quiet individual and seldom voices his opinion about anything. Normally, he will just go along with the flow and let others state their opinions without butting in. Seldom will he get into an argument over anything. He usually mixes in with the crowd at the club meetings and rarely has anything to add, and then only when called on. He checks in with the morning and afternoon group on his way to and from work, but seldom has anything to say. He will just give his call for "I.D. Purposes" and let everyone know he is "Monitoring".

He will admit that his knowledge in most subjects is very limited, especially when it comes to electronics. Instead of offering the answer to a question, it is usually him who has the question. He loves to listen to professional people who seem to know it all, especially would be electrical engineers. You will never hear him degrade the class of license held by another amateur. He presently holds the Extra Class license, but one day hopes to earn the coveted Advanced Technician Class.

Although he uses equipment bearing the Icom brand, he feels there is better gear on the market. If he could afford it, he would probably use either Yaesu or Heath equipment. The primary reason he

keeps the Icom around is they furnish him with all his T-shirts.

He never complains about the quality of the signal from another's radio. To him, all radios sound about alike. He admits to having a tin ear and has trouble telling if a mike is too hot or too cold.

He enjoys many hobbies other than amateur radio. He has been known to take extended trips on his Suzuki motorscooter. He loves animals and one of his most prized possessions is a camel given to him by one of his closest friends. He is very talented when it comes to musical instruments, being very adept on the electric keyboard and guitar. He has even written a song or two. He is a marvel to see on the dance floor. The rhythm he possesses is probably what makes him such a great cw operator.

Not only does he enjoy fast cw, he also loves fast cars. Although he drives General Motors products, he feels the foreign made cars are much superior to those made in the United States. If it has a clutch in it, forget it.

He is one of the regulars at the Thursday lunch sessions. He seldom comments about the food or the location. It seems his favorite places to eat are those which serve food similar to his old highschool cafeteria and the Golden Arches. Not to embarrass himself, he will normally only take small helpings of a few items and not go back for seconds. He might take thirds and fourths, but never seconds.

His wife is also licensed and can be heard on the repeaters more than he. She works at a large store and has to take all kinds of guff from irate customers all day long. Fortunately, she has a calm husband to come home to who seldom complains about anything.

He reminds me of one of Oklahoma's favorite native sons, that being Will Rogers. He never met a ham he didn't like. He speaks very highly of everyone and never utters a harsh word about anyone.

He loves practical jokes and jokers. He has a lot of close friends, but he has said many times that probably his closest friend and the one he most admires is K5NK.

Yes, this is a very unique person. If you haven't met him or talked to him on the air, you should. Come to the next club meeting and ask someone to point him out and there will surely be someone there who knows him.

CONTINUED ON NEXT PAGE



## NEW ANTENNA MANUFACTURER

It has been several years since we had antennas manufactured in Norman and Duncan. Fortunately for us, we now have a new firm who has started manufacturing a high quality antenna here in Oklahoma that should create many new jobs and add a good source of personal income to the state.

Cashion Manufacturing Company, Inc., recently started operations on a 24 hour basis, employing two persons on each 8 hour shift. The product is a 10 meter dipole which supposedly will out perform any antenna on the market today.

The company was formed by none other than Mr. J. D. Lowry, noted author and expert on antennas, especially the 10 meter variety. He is presently serving as President and C.E.O. and his wife fills the capacity of Vice-President. So far they have no need for a treasurer.

The antennas come in two models, one being the APR-1-89-A version which is normally used as an inverted vee. It is constructed of number 24 wire, copperweld, and blue in color. This makes it harder for the birds to see as well as the neighbors. Each leg of the antenna will be approximately 1/4 wave length long as soon as they figure out how long 1/4 wave length is for 10 meters. It is fed with RG-58 coax, which must be used. New coax doesn't have enough resistance to stop some of the s.w.r.'s flowing through the feedline. The antenna is supplied with 33 feet of coax and has no PL-259 attached, simply a ragged end. To connect the antenna to the station, one must use other coax which has been stored for some time and make a splice long enough to reach the transmitter. This is probably the most tedious procedure required to install the antenna. One must carefully twist the two center conductors together and make a nice solder joint with a blow torch. This connection is then wrapped with masking tape and the shield of the two pieces of coax is then spliced by unravelling them at the ends, rolling them up in a neat strand and soldering them together. After all the soldering is done, the splice must be wrapped with duct tape to keep out water and dust. Normally, the center of the antenna is connected to the highest point possible, with the ends sagging down to a point about belly high and tied on to something driven in the ground or existing structures, such as a tree or fence. The antenna is rotatable to be more directive. All one has to do is have ample objects to connect the ends to.

The second version, the APR-1-89-AF, is used as a straight dipole. Once again, the center is connected to a point as high as possible with the ends connected at the same height. It is identical to the

APR-1-89-A model except for the model number. Connection to the station is the same for both models.

Both models exhibit outstanding features. The s.w.r.'s are great. A lab test revealed an s.w.r. of 2.5 to 1 at the resonant frequency and falling off to about 1.2 to 1 at 250 khz above and below resonance. Impedence is a constant 48.9 ohms.

Both models can be used in a mobile installation. Mr. George Adkins, AD1S, is presently field testing both models on his mobile home. As long as George doesn't drive under any overpasses, he uses the APR-1-89-A model, otherwise, he must use the APR-1-89-AF version.

The demand for the antenna has been exceptional. So far production has been running far ahead of requests. On the average, they are shipping out one antenna a week.

In anticipation of the great demand for the antennas, Mr. Lowry has hired Mr. Ron Recer as his marketing specialist. Mr. Recer has been courting Johnny Cooper Electronic stores and Radio Shack as the primary outlets for the antennas.

A more detailed report can be found in the April 1, 1989 issue of QST under Product Review for these fine antennas.

## CLUB MEMBERS IN THE NEWS

It has been rumored that Craig, KB5BOB has filed for the Mayor's office in Mustang. It seems there is an over abundance of hams in the city and he wants to get rid of a few to make life easier for him. He is trying to talk K5SXJ in running for Chief of Police.

Results of the antenna examination given at the February meeting are now posted and a high majority of the members made passing grades. It seems that WA5BQX was caught stealing the test papers and as a result has been placed on 3 year's probation. The only flunk was by W5MEL, who wrote the test.

Mike, N5DDB, has applied for a grant to purchase 160 acres between Memorial Road and N.W. 122nd street to build a bird sanctuary. It seems there is an abundance of great horned owls and hawks in the area and he wants to provide a safe home for the critters.

Gary, KA5BQS, can't decide whether he wants to get a flat top or a permanent. He intends to bring it up for a vote at the April meeting.

Since the oil boom has busted and he has gotten so thin, Larry, KF5JN, is to become one of the jockies at Remington Park this summer. Watch for him in the Pick 6.

Since Jim, W5JDH, has become so proficient in DOSE, he is thinking about opening a DOSE store. You can get a dose of anything you want.

Leonard, W5MEL, plans to have the first printing of his autobiography in the book stores by the first of April. Proceeds from the sale of the book will be used to pay for plumbing and furnace repairs.

Vic, W05S, has enrolled at the University of Francis Tuttle in a language course to learn how to speak Okie. The words he is having the most trouble with are "Mobile" and "Roger".

WA5BQX is planning to expand his business and install tinkle stops along the Broadway Extension.

Jim, KA5PSF, is opening a Private Eye Agency around April 1. He has personnel in training at this time.

## MORE CLUB NEWS

King B. R. has asked me to inform the club that the March meeting has been cancelled due to lack of interest. It has been rescheduled for the 3rd Tuesday of April.

I am informed that the Fox Hunts which are held every other Saturday morning have been scrubbed. It seems the Society for the Prevention of Cruelty to Animals has filed a protest and asked that the little fellows be left alone. The hunts are to be replaced with a Jane movie in hopes Tarzan will show up.

Effective April 1, the discussion of Packet and Computers will no longer be allowed on the .82 machine. If you desire to talk about such subjects, it will be necessary to use the .21 repeater. W5MEL has been appointed O.O. of the .82 machine and will be sending out pink slips to anyone caught discussing such obscene material. The first one will only be a warning, but the second one is 30 days.

## LAST CLUB MEETING

Approximately 40 members and guests were treated to another fine meeting at the last session. It was perhaps one of the most educational ones we have had. President Bob Robert put on an excellent demonstration as to the proper procedure for completely zapping a modern day transceiver.

King B.R. first demonstrated one of the new 10 meter antennas being produced by the Cashion Mfg. Co. A noise bridge was connected to the antenna to show how to properly use the bridge and determine the resonant frequency of the antenna. After this was demonstrated, he applied a little rf to the beast but all that happened was the chair fell off in the floor.

K5NK



### Minutes of March Meeting

Meeting was called to order by President Jack, WB5ZKZ, at 12:05 p.m. at the Homestead Country Kitchen, with 22 members and guests present. Minutes were approved as published in the C&E. Ellard, W5KE, gave the Treasurer's report.

At Fred, W5NL's instigation, motion passed that member's birthdays be recognized (but not their ages) at club meetings.

New member George, W5DKC, from Cashion, related events from when his mother was a member of the VHF Club. Marge, K5LRE, was a member back in 1954, and used to enjoy antenna assistance from the likes of Steve, W5VCJ; Stan, WB5BYJ (now AA5HQ); Fergie, K5SXJ; and the likes. Marge passed away in 1972 but many of us remember her.

We also welcomed new members Jim, W5JDH, and his wife, Eunice; and, Paul, N5PT, who was a little late but made it never-the-less.

Sid, K5MKW, brought his camera and tripod, and set up an impromptu portrait studio to get pictures of all the gang. With that done, meeting adjourned at 12:16 p.m. Joe, K5JB, Sec'y

### Packet Racket at K5JB

I really rattled on last month about that Lan-Link program, but remember that I said I had never run it, and that the article was like the book reports I prepared in school (based on superficial knowledge of half-vast generalities, heh!).

I saw WD4LPU sending a UI frame that said something like, "OTC K5JB" so I responded by sending him a connect. It passed a message from Doug, N5DUB, and heck, I didn't know what to do next. I fumbled around a bit and disconnected; guess I should have read my article! (:QSP: WD4LPU.)

Dave, KD5FX, in Ponca City left the following note:

"Just finished your C&E article, it was VERY interesting this month. I'm sending you a SASE disk for the LAN-LINK

program. I'm a constant user of YAPP right now and happy with it, but the LAN-LINK looks like it might have some features that I could use. You can modify the YAPP.CNF file so it doesn't mess with the TNC every time you run it. I don't like programs to mess with my TNC either!!! I've tried to use TERM and a couple of others without success, you couldn't tell 'em which com port to use and I use COM2: so they wouldn't work."

"Ur arrangement of the day sez that K5JB is also on 146.05?? 146??? is that a typo?? (etc.)"

Yeah, that was an error on the frequencies. I temporarily have one of the MS/DOS BBS ports on 145.05 but it is on an indoor antenna (because that is all I have left to hook to).

Most of my packet radio software isn't current but anyone who wants something I have (if it isn't a commercial program) needs only send me a formatted MS-DOS diskie and return postage for a mailer. Call me, or leave a message on K5JB BBS if there is something specific you are looking for.

### New TCP/IP Software

Dave, WB5FWE, acquired a new version of the main TCP/IP program (called net.exe) for us to play with and I sent a copy off to Paul, N5PT, to give a try. It seems to have fixed the problems we had with the previous "upgrade" which had some fatal flaws in it. The current version, 881225, W9NK version 4.2x, has enhanced Net/ROM support. An AX.25 user can now connect to the system mailbox via Net/ROM. Previous attempts to connect to a TCP/IP station using Net/ROM resulted in a "busy" signal.

There are some new abilities to tweak Net/ROM parameters, but they would be interesting only to someone who is using the thing as a Net/ROM network device. Since we are only using them as portals we only have to tell them that we aren't interested in any net routing broadcasts except from our "best neighbor", as Doug, N5DUB, calls 'em. I let the thing build the routing tables from the broadcast information it receives so I can peek at them for curiosity. Since my station isn't capable of adding any value to the network, I don't permit it to transmit any node information except its own name.

Phil Karns, KA9Q, author of the various TCP/IP programs is restructuring the way his main net program works and

we are still awaiting word on when it might be available. Phil reported at the TAPR annual meeting that he was converting to Turbo C which suits me fine. I am glad he finally saw the light; he was probably convinced the first time he could compile the whole package in a fraction of the time it previously took.

If you are interested in trying TCP/IP, let me know and I will try and fix you up with the software and an IP address. Since Bob, KA5MIZ, is in Wisconsin for a couple of years, I will be handling the IP address coordination. Joe, K5JB

### New Hardware for TNC-1

There will soon be new life for the original TAPR TNC-1 (Heath HD-4040). The following was lifted from a March 13 Compuserve HamNet message from Andy, N0CCZ, to Lynn, WB6UUT.

(This is) From the February 1989 Packet Status Register, an Overview of the TNC1 mod by Lyle Johnson, WA7GXD. The rest of the article covers the mod in more detail.

### OVERVIEW

The TNC 1 Upgrade adds an enhanced TNC2 to the TNC 1 chassis. When the upgrade is completed, the TNC will have all the capability of the TNC 1 coupled with all the capability of the TNC 2.

Looking at it from the TNC 2 perspective, the upgraded TNC 1 provides all TNC2 features plus the following new ones:

- (a) Software selectable serial port (ABAUD) and radio port (HBAUD).
- (b) Two sets of default parameters in battery-backed RAM (optional).
- (c) Two sets of EPROM-based software (optional).
- (d) Complete TNC2 firmware capability (NET/ROM, for example). This also "ensures" availability of firmware for the upcoming AX.25V2.1, etc.
- (e) Two modem disconnect headers (one for the TNC 1, one for the TNC 2).
- (f) Front panel RESET switch.
- (g) A TNC 1!

We're hoping to have kits available for Dayton, price not yet determined. 73, Andy

### Packet Network Topology

Some of the folks, who have built and are maintaining the packet long-haul network, have been discussing various

schemes to try and improve performance. One involves higher speed modems. Another involves using multiple frequencies to try and prevent collisions caused by "hidden transmitters". In the three articles that follow, I extracted parts of some work by others that might offer food for thought.

Let me define some terms so it will be a little easier to follow these folks. CSMA is carrier sense, multiple access. That is what we are supposed to be doing on packet. Problem is that to sense the carrier, we all have to hear it, and we don't; therefore, CSMA doesn't work too well on the radio. Paul, N5PT, believes he has the answer in a method called BTMA (busy tone, multi-access). The next two authors believe that frequency separation is the answer. Hank, N8XX prepared a paper for the 1988 Ohio Packet council that described a hexagonal network that used six different frequencies. Each node would have one transmit frequency and four receive frequencies. If the six frequencies are given letters A through F, each station would fall into one of two groups. One group would transmit on A, C, or E and the other group would transmit on B, D, or F. Each node would receive on all three frequencies of the other group.

Notice in Figure 1 that each node has three links. The three stations that each node links to have frequencies from the opposite group. These frequencies are link frequencies, not user access frequencies. The user access frequency would be an additional radio/packet modem.

Glenn, N6GN, in reply to Hank's draft, sent some comments relating to the possible hardware approach to this type of network. These two articles were condensed from the TCP/IP Newsgroup mail on USENET.

It is fun to take out pencil and paper, draw a map of Oklahoma with the existing nodes (digis, Kanodes, and Net/ROMs) and play what-if. It would be a very ambitious project to put such a network in place but you have to start somewhere; so, get out that pencil and paper.

(Incidentally, the full text of these articles is on my BBS, in the technical files directory. Joe, K5JB

#### BTMA v.s. CSMA

I am interested in trying to improve the state of the art as it exists today on amateur packet radio. Specifically, I

would like to come up with a better collision avoidance method that will help solve the hidden terminal and exposed terminal problems.

I am thinking about using BTMA (Busy Tone Mult. Access) where a receiver of packets transmits a tone over an area comparable to his reception pattern. This would have to be done on a frequency far removed from the packet channel to avoid desensing the receiver, probably on 220 MHz or 50 MHz. Has anyone had any experience with trying this out or know anyone who has?

Another solution would be to use a duplex repeater, forcing all stations within range of that repeater to listen to its output (As in regular CSMA) before transmitting. This gives all stations equal reception coverage areas. This still does not solve all problems, however. Stronger stations capture the repeater's receiver, and since all traffic has to pass through the repeater, throughput may be high but capacity is limited.

If you would like to work on BTMA with me, I need 2 or 3 stations to work with me that are setup for multiband VHF operation. As a minimum the following equipment would be needed:

VHF packet station capable of operating on several 2 meter freqs. A decent 2 meter omni-directional antenna

2 meter directional antenna (optional - for experimentation) Separate VHF station, 220 MHz or 50 MHz FM with omni-dir. antenna, same site as 2 meter antenna.

The equipment would not need to be modified internally except (possibly) for the TNC CD lead. I have not completely thought everything out yet, and am open to suggestions as to how this setup could be done. Let's experiment, fellow hams! Leave your reply on WA5BOX-2 mailbox (.05) or Leave a message on N5PT TCP/IP mailbox (.01). Paul, N5PT

footnote: The full duplex packet repeater is used in Tucson and BTMA has been tested on the west coast. Check out past issues of PSR and Gateways for details.

Joe, K5JB

#### A Hexagonal Network

(From a proposal presented by N8XX at the 1988 Ohio Packet Council annual

meeting. This came from USENET, TCP/IP Newsgroup)

**ABSTRACT:** This paper presents an alternative to the linear networks which we currently are using and building in Ohio and surrounding states. It overcomes the well documented "ALOHA" syndrome, where actual throughput of a linear, random access network, where nodes hidden (by either topography or distance) cannot hear each other and cause collisions. It builds upon concepts previously discussed at the ARRL Computer Networking Conferences. The effective throughput of the system would be close to the baud rate of the links involved.

Lemke, WB9MJN, has proposed a cellular network. (See "Cellular Area Coverage Transport Networks" by Donald V. Lemke, WB9MJN, in the proceedings of the ARRL 7th Computer Networking Conference). He proposes full duplex nodes on the 1250 MHz. band. adjacent nodes have inverted transmit and receive frequencies. It is assumed that the three directions would be handled by three pairs of frequencies for the three directions. Getting three transmitters to coexist with three receivers at a site might be a bit difficult, though it probably could be done.

The fellows at AMSAT have a somewhat different idea - they use three or more receivers and a single transmitter at a site, hooked through a computer which receives AX.25 frames on four channels, and generates AX.25 frames on two output frequencies.

What does a spacecraft have to do with terrestrial networking? Well, if we use such a functional module as a building block, let's see what kind of a network might be developed. We could have a node with three receiving channels (bands?) It would transmit on a fourth frequency. We could use a fifth port (used typically on a satellite for two-way telemetry and control functions) for connection to a LAN. Let's look at what a node in Fairfield might look like. It might receive from Brookville, Indiana, on one frequency, from Dayton, Ohio on a second frequency, and from Walton, Kentucky on a third. It would transmit on a fourth. If duplexers, could handle three receive frequencies and one transmit frequency (or if the frequencies were on separate bands?) the channel could be full duplex. However, the concept could work on a simplex mode, albeit at a slower rate and possibility for col-

lisions and retries. We'd need a total of six frequencies to make the network, but spectrum should be available.

From a series of such sites we can build a hexagonal network with a path of redundancy around any node - so that the network would not fail if an individual node failed. (See Figure 1 for a part of such a network which could be put in place in Southern Ohio, Northern Kentucky, and Southeast Indiana.) Each node would be equipped with three receivers, one transmitter, and a computer designed to look like a multi-port TNC. We could use the receive and transmit modules from the Microsat modified for 51, 220 or 440 MHz (if we wanted to go simplex), or figure out if a 900 or 1250 MHz duplexer could be made to work with three receivers and one xmtr on the same band. N6GN reports that VERY inexpensive modules are available for a 900 MHz, personal (CB-type) band in Japan - maybe these will be imported for use in the U.S. 902 MHz ham band? Or, maybe we could adapt the ever cheaper 900 MHz, cellular telephone strips for such use? We'd use another port for connection to a LAN frequency, using standard rigs (for now).

What sort of computer might work? Would a PS-186 handle the job? Would the TAPR NNC work? How about TEXNET? Would the microcomputer being used for the Microsat project be an economical and otherwise practical choice? The Microsat is supposed to be able to handle at least 5 input ports and two output ports at 4800 BPS or higher, and the cost is supposed to be low. The advantage of the MICROSAT hardware is that it MUST be available by May 1989, because THE BIRD WILL FLY!! at that time.

Vic, K1LT, et. al. (at the OPAC meeting) figured out that 6 frequencies would be needed, and the closest node transmitting on the same frequency would be twice as far as the desired node. This corroborates the assertion of Lemke in his paper.

If simplex nodes could be used, but the overall throughput of the system would be cut by at least 50%. Special attention would need to be paid to turnaround time of tx to rx to be effective. Software would have to be designed to NOT transmit if a packet were being received by a node, nor to attempt to transmit data to a node when it was transmitting. All in all, it would be MUCH better to work full duplex. Possibly we could use pairs near 51/54 MHz, near 221/224 MHz, and one du-

plex pair in the 440 MHz range. Other possibilities would be 6 frequencies strategically located in the 902 MHz band, or 1.3 GHz band, or ????? Getting started with equipment currently in use on 50/220/450 might allow us to develop software and prove the concept before we plunge into the unknown world of 900 or 1290 MHz.

The job of the node controller would be to receive packets from the receive ports, and queue them for transmission (if simplex) or send them along to destination if duplex. It would need to allow for TX turn-on time, inasmuch as when the node were idle there would be no need for the transmitter to be running, and would have to be able to handle routing and alternative routings to handle congestion and/or failure of a node. A PS-186 or similar should do the job.

The nodes could be connected to LANs, or merely act as trunking switches. If desired, a BBS forwarding port could be added to eliminate BBS forwarding on the LAN frequency.

The general idea was well received at the OPAC meeting, and we agreed to continue a dialogue on how best to improve and implement such a network. Hank, N8XX

#### Hardware for the Network

(The following was sent by Glenn Elmore, N6GN, in response to Hank's article, above.)

Here are some initial thoughts about the N8XX hexagonal network proposal. (The frequencies fall into the two following types:)

TYPE A: Transmit on a, c or e; receive b,d,f

TYPE B: Transmit on b, d or f; receive a,c,e

I don't know how this proposal strikes you all relative to optimum network design, but I think it might be pretty easy to accomplish the physical layer.

Suppose we build a 1200 MHz linear transverter with a single LO which can be phase-locked to run at either 1220 MHz or 1326 MHz depending on station type. Split the LO for separate use in the TX and RX sections. The transmitter power chain can be the Mitsubishi driver and 20W brick. This arrangement should be economical with about the same cost as my earlier 'whither layer 1?' posting. A \$5 FET front end

should easily allow the system to be limited by antenna noise temperature on receive.

For sake of discussion let the frequencies be: (these do meet the approval of my now-out-of-date ARRL directory)

a 1248.1 MHz  
c 1248.5 MHz  
e 1248.9 MHz

b 1298.1 MHz  
d 1298.5 MHz  
f 1298.9 MHz

Each station is also equipped with a single WA4DSY modem transmit section and three receive sections. The transmitter is modified to run at 78.1, 78.5 or 78.9 MHz. The receivers are crystallized to run at 28.1, 28.5 and 28.9 MHz. Now, by selecting 1220 or 1326 MHz LO, and the desired 78 MHz TX freq a station can be:

TYPE A: (bdf)-receive with (a,c or e)-transmit - 1326 MHz LO; or, TYPE B: (ace)-receive with (b,d or f)-transmit - 1220 MHz LO

This allows 50 MHz of transmit/receive isolation for duplexing on a single omni antenna. However, if two more PIN switches are added to the transmitter board (\$12 per switch), three separate 'directional' antennas can be used on transmit. In addition to selecting the particular transmit antenna, by simply adding two more oscillators onto the DSY modulator (or synthesizer divide-by #), the station could select one of the three transmit frequencies to minimize QRM to other nodes based on terrain and propagation characteristics of the site. This is acceptable since the other node already has all three receive frequencies covered using an omni receive antenna. Transmit turn around time should be limited by the DSY modem.

This arrangement allows more flexibility at only a little added cost; the extra transmit antenna(s) and PIN switches. It also offers S/N reduced by only (directional ant gain - omni antenna gain) from the full blown point-to-point link I showed in 'whither layer 1?'. Running separate TX/RX antennas might very well remove the need for a duplexer, per se. Identical (except for frequency) simple-to-fabricate interdigital filter-mixer assemblies could be used for the transmit and receive sections. Running with tx-if > rx-if and with low if power levels helps keep the transmitter out of the receiver too. The Mitsubishi power chain needs only

about 0 dBm and can operate over the full 1240-1300 MHz range.

The symmetry of the station should help reduce manufacturing cost and complexity. As my earlier posting described, this 1200 MHz arrangement

seems the most attractive for moderate speed point-to-point networking.

I have already built, and have operating, a transverter similar to the one described above.

OK, now you network architecture guys can tell me why the N8XX proposal is no good from your viewpoint and this hardware diatribe is wasted.

Glenn, N6GN

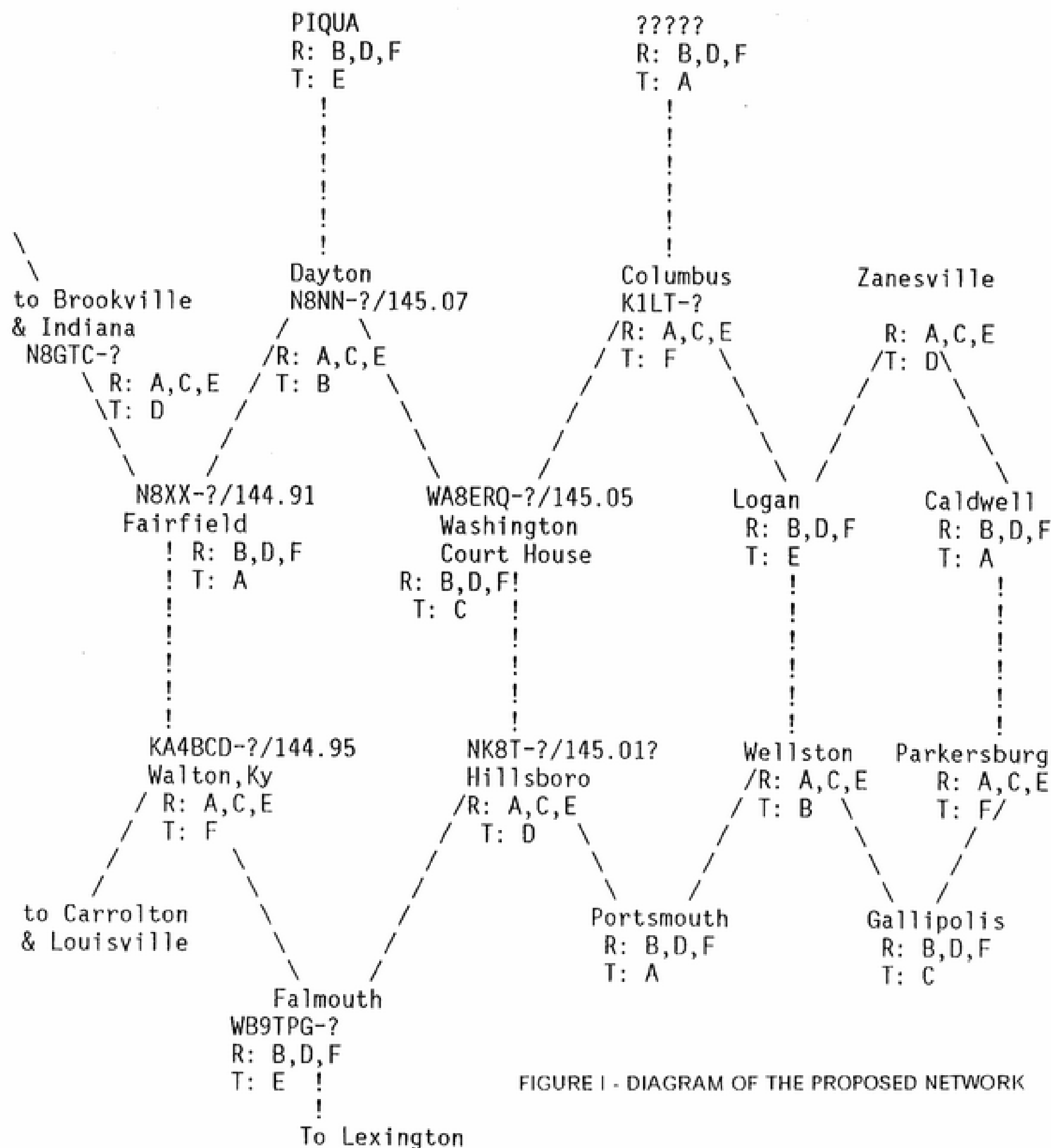


FIGURE 1 - DIAGRAM OF THE PROPOSED NETWORK

Here's a diagram of the network in part of southern Ohio, northern Kentucky, and southeast Indiana. Exact sites are not critical, as long as nodes can hear each other, and are approximately on the circumference of a circle. A few calls are listed, as the holders are currently active in packet and helping with networking in various ways. I did not intentionally ignore others who may be helping with the networking efforts.

## BICENTENNIAL AMATEUR RADIO CLUB

*"To Promote Radio Communications"*

The meeting was called to order at 8:00 P.M. Tuesday, March 14, 1989 at Oklahoma City Community College 7777 South May, Oklahoma City by Pres. Dennis Musser. There were 14 members and guests present.

The minutes from last month were read. A typing error was found in the Treasurer's report for the club's bank balance. It was corrected and the minutes were then approved.

Old business began with a discussion of an Article in the By-laws that had been tabled the previous month. It was once again tabled so that Pres. Musser can make inquiry into the Article that is to be voted upon.

Repeater Report was given by Dick Baker. In the examination of the repeater sight at South Community Hospital he found the repeater cabinet had been tampered with. A 7/8" heliax connector had been missing, but the pin remained on the coax. The cost for replacement was estimated at some \$90-\$120. The connector was to be purchased by the next meeting if an outer shell was not found in anybody's scrap box.

Dick also said that the antenna on the repeater was in need of replacement. The antenna that was suggested to be replaced was the DB2-24 with an estimated cost of some \$350.00 to \$500.00. The general consent was to first take care of the heliax connector, then next month determine the purchase of the antenna if within the budget capability. The repeater, according to Dick, was in reliable shape and could be moved from his repair shop to the hospital anytime.

>>>> A very big thanks goes to an anonymous donor for providing a final for the 76er's repeater. It really was appreciated!!! From all of us. Thanks!!!<<<<

For new business, Pres. Musser reported that a need has developed for several wavelength antennas: 40-75-80-160 dipole with traps. One idea brought up was to purchase

KAY KOUNTY  
AMATEUR RADIO KLUB

MARCH MEETING NOTES- This meeting was held back at the Vo-Tech where we had a very good turnout. The main items that were discussed are-

Repeater work, this will (hopefully) be done on Friday March 24th, the autopatch codes will be changed at this time because the new controller will be installed. All those who are PAID-UP will be notified of the new codes. It will also be given a good 'tuneup' and should be back in first class condition.

Callbooks, the club voted to buy both a US and DX callbook that will be available for all club members to use. I'll announce next month who will have them so you can give them a call and ask for an address.

Our program was presented by Fred Kemper of Me-Too Media who runs the weather observing station at the Ponca Airport for the FAA. He put on a very interesting program for us. See below for an update on the other items.

NEXT MEETING- Our next meeting will be held again at the Vo-Tech. It will be on Thursday April the 20th at 7 p.m.

the antennas. As a result of further discussion, a motion was made and seconded to build the antennas as a club project. The club will build the antennas after the end of the next business meeting. Bill Skipper will help coordinate this project with his lecture of antenna construction.

The OKCCC has a bulletin board that is available to all. The system has ham radio programs and other needed information for ham operators. The phone number is 682-7559 up to 2400 BR. It operates 24-hours a day. The SYSOP is Denny Myers.

The club meeting was adjourned at 8:45 P.M.

The presentation of the "Antenna Program" followed the adjournment of the meeting. Next month will be the second part of the "Antenna Program" and will be conducted by Bill Skipper.

We the club wish to welcome our six new members: Robert Landreth Jr., Larry Michal, Eddie Sanders, William Soward, John Thomason, and Edward Kane.

Our program will be by N5PC about a new antenna tuner that he has perfected. It's also time to start thinking about elections, they are coming up in May.

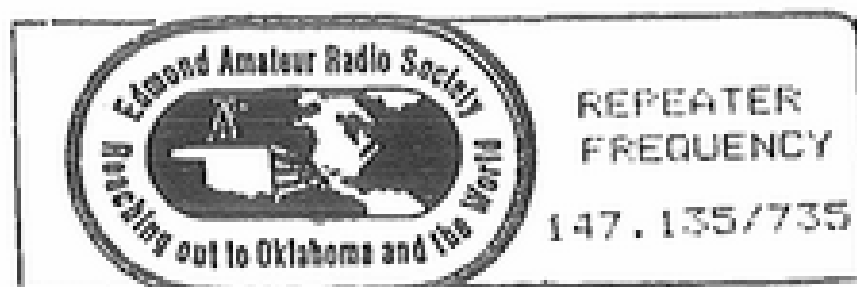
PUBLIC SERVICE EVENT- The next event is April 1st at Lake Ponca. It will be a biathlon. A 5K run, a 30K bike ride, and another 5K run. Listen on the Monday night nets for more details. Another event that will take place on the same day is the Special Olympics. This is an all day event at the football stadium. We will need a lot of help to handle both of these events. Contact N5LPZ, W5ZWM, or KD5FX if you can help. Remember, public service is one of the justifications for amateur radio using the valuable spectrum that we have, have you helped out this year? (Did that make ya feel guilty? It was supposed too!)

NOVICE/TECHNICIAN CLASS- A new class began on Feb. 7th at the Vo-Tech building. We have a very good turnout so far, about 12 people enrolled. Mike N5LPZ and Dave WN5LUI are doing most of the teaching, with some help from Mike N5JJR and yours truly. WE NEED SOME MORE HELP!!! If you can come help just a couple of nights please contact Mike N5LPZ. This would be a great chance to brush up on your theory and rules. (Did that sound like a re-run from last month? Well, it was, N5GIW was the only one who has helped us so far, we need MORE!)

EMERGENCY TRAILER NOTES- The club bought a nice 10 amp automatic charger for the batteries. We also have permission to keep it next to the building so the batteries will stay charged. We had a short work day on it last Saturday, thanks to N5JJR and his son for helping out. We got it all cleaned out and some of the wiring done on the three public service radios inside. Just a little more work and it will be done. I put the charger on the third battery, it's been pretty sick for quite awhile, maybe it will perk up with some attention.

That about wraps it up for this month, tune in the Monday night nets at 9 p.m. on 146.97 (the late night place to be) for more details and the latest developments. 73 fer now, Dave KD5FX.

CLONES  
are people  
two



Greetings from EARS!!

February 28th was the first weather spotting class for 89. Some 75-80 people attended. Several EARS members were present along with other clubs being represented. The class was quite well organized, as is usual, when the National Weather Service holds one. The next weather spotting class will be Saturday March 25th. This will be an all day class from beginner to advanced. Please try to attend if you can. It will be held at the Norman Municipal Library. I believe the hours are 9 a.m. to approximately 4 p.m.

Congratulations to Scott Haas, KB5EBT, and Jason McGee, KB5EYE, for completing their RED CROSS first aid and CPR training. We hope we will not need their services, but do we ever know?

The St. Patrick's Day Parade was held on Saturday March 18th. Those of the EARS club participating in the line up of the parade as well as the parade route were as follows:

|        |  |
|--------|--|
| N5HIP  | Phil Wolfenbarger                          |
| KA5ZPN | Joe Harp                                   |
| WR5G   | Jerry Boyd                                 |
| K5SKA  | Bill DeMand                                |
| N5LZF  | Marlin McGee                               |
| KB5EYE | Jason McGee                                |
| KA5YSF | Donna Guinn                                |
| KA5WAV | Tommie Guinn                               |
| KB5BGM | Glo Guinn                                  |
| KB5HWH | Steve Guinn                                |
| KB5HWI | Stephanie Guinn                            |
| KB5HXT | Mike Delaney with XYL Debbie and son, Mike |
| KB5INN | Jim Richardson                             |
| KB5INM | Linda Richardson and their son, Paul       |
| KB5EIC | Jamie Cook                                 |
| N5NUK  | Bill Wilburn                               |
| N5KUE  | Bob Long                                   |
| KB5LID | Brad Efaw                                  |

The Explorer post also had several hams helping, but due to the deadline, I wasn't able to get their calls. EARS was presented a very nice plaque from the Oklahoma City all Ireland Club for our help this year.

#### CLUB MEETING NOTES:

The March meeting was held at the Edmond Police Station training room and had many members present as well as several visitors attend. By the way, we looked the posters over very carefully, and despite very reliable information, couldn't find N5HIP's picture on the wall.

Ed Granger, KB5DZU, and Joel Beasely, KB5FCF, have volunteered to be the contact persons for orientation on the club HF station. Any member wanting to use the rig(s) and have not been orientated, should contact them. Joe Harp, KA5ZPN, has volunteered to teach Packet to anyone interested. REMEMBER CLUB MEMBERS, the club station is there for you to enjoy!! TRY IT, YOU'LL LIKE IT.

Larry Traub will be heading up the Field Day Event plans this year and will try to get the same pavilion we had last year at Arcadia Lake. He will also need volunteers to help coordinate the event. Anyone interested, please give him a call. Yes, I know that's not for a couple of months, but this year we're going for the GOLD! Well...we'll make sure were going to have a lot more fun (which isn't easy) than we had last year.

By the way, Field Day will be the last week in June - 29-30.

#### PARADE REMINDER:

The CENTENNIAL PARADE will be held on April 21st in downtown OKC and several volunteers will be needed.

#### HAMPOUT:::::

Our Annual (whenever we want to) Hampout trip will be to the Wichita Mountains State Park on April 15th. All you need is a place to sleep and something to eat; the fun will come from somewhere. Contact Harold or Phil on the air for more information.

The April Dinner Meeting will be at St. John's the Baptist Catholic Church on April 14th. The menu will be a spaghetti dinner with trimmings and the cost will be around \$5.00. The scholarship committee will be

catering it again so bring your appetite.

::::::::::HAM HOLIDAY::::::::::

EARS will again be handling the registration desk for Ham Holiday so many people will be needed to handle the 3 day event. There is still a need for someone to handle talk-in to the Lincoln Plaza. If anyone is interested, contact one of our CORA reps, Steve Hamlin or Howard Wise. There is also talk of having a hospitality room at the Lincoln Plaza for EARS members to rest and relax. Try to encourage others to stay at the Lincoln Plaza as this will help keep the cost down for Ham Holiday.

Good news: The repeater, 145.37, will be getting a remote base which will link UHF repeaters in our area. Our 444.5 repeater is getting a new controller which will help those on UHF. I'm sure the benefits of these additions will improve conditions on both repeaters. Our main site receiver was taken off the duplexers to help improve the range of the repeater. If you have noticed any improvement, the repeater committee would like to know. We are also looking forward to the EDN link from Tulsa to Lawton. This link is scheduled sometime later this year. The link will be on UHF.

There is talk of an Advanced Licence study group if enough people are interested. It would probably be held at the Church on Sunday's during the afternoon. Anyone interested contact Phil N5HIP for information.

CONGRATULATIONS to our newest upgrades - Jim Richardson, KB5INN, and Linda Richardson, KB5INM.

We would all like to wish Lee Vaughn (KA5WIS) the best on a speedy recovery from surgery. Lee is not only trustee of the 147.135 repeater, but a dedicated member of EARS. He probably talked his doctor into letting him out on Sunday morning in order to attend the club meeting Sunday afternoon. HA! Our thoughts are with you.

Well, we better close for now. Look forward to seeing everyone at the April club dinner meeting.



## The Second Oklahoma Land Rush

April 22 is the 100th year anniversary of the "Great Oklahoma Land Run" to the Unassigned Lands of Oklahoma Territory. As a centennial celebration of that event, a family event has been proposed.

Instead of coming by "horse and wagon", we propose to use more modern conveyances; the automobile, motorcycle, or whatever suits your fancy.

The boundaries for the unassigned lands were the Cimarron River on the north, the South Canadian River on the south, the Indian Meridian on the east (seven miles east of Douglas Blvd.), and a north-south line through Fort Reno on the west. These areas are all within the range of one or more repeaters.

At 12 noon, on Saturday, April 22, we will depart from our preselected "border crossing" areas and proceed (at legal speed limits) to the Oklahoma State Capitol parking lot. 146.07/67 repeater will be used during the final few miles to help guide those who need help locating the "finish".

We plan to take a group photograph at the finish for publication in Collector & Emitter. After photographs are taken, the "hungry ones" will "convoy" to the Village Pancake House at N.W. 27th St. and Classen Boulevard for a bite to eat.

If you need additional information, or would like to express your desire to participate in the Oklahoma Land Run of 1989, please inform WB5SJX, Jim, in Stillwater. You can contact Jim on the Oklahoma Night-Owl Net on 146.67 (-600) at 2230 local time in Oklahoma City. Via KD5IS and K2GKK.

Like reactances in series  
(either all capacitors or all inductors):

$$X_{\text{total}} = X_1 + X_2 + X_3 + \dots \text{ (with capacitive reactance, total is negative)}$$

Different reactances in series:

$$X_{\text{total}} = X_L + X_C \text{ (} X_C \text{ is a negative value)}$$

Like reactances in parallel:

$$X_{\text{total}} = \frac{X_1 \times X_2}{X_1 + X_2} \text{ or}$$

$$X_{\text{total}} = \frac{1}{\frac{1}{X_1} + \frac{1}{X_2} + \frac{1}{X_3} + \dots}$$

(With capacitance reactance, this total is negative.)

Impedance (resistance and reactance in series):

$$Z = \sqrt{R^2 + X^2}$$



### "THE SOONER PARADE"

SUBMITTED BY:  
STAN VAN NORT, N5JFQ

The Oklahoma Land Run Centennial is being celebrated this coming April, and here in Oklahoma City there are going to be special events the entire Centennial Weekend. In the spirit of the "first" settlers, the centennial celebration will begin "sooner" on Friday, April 21, at 1:00 PM with "The Sooner Parade" in downtown Oklahoma City. The parade will be of 'Cotton Bowl' quality thanks to the cooperation and advice from Jim Skinner, Operations Director of the Cotton Bowl Parade.

On April 22, there will be activities all day long at the spring Arts Festival including a huge birthday cake & ice cream to feed 10,000 people. There will also be a free outdoor concert and a spectacular fireworks & laser show to conclude the festivities at 9:30 PM.

As the Parade Director, I would like to extend to you an invitation to come to downtown OKC and see "The Sooner Parade" on Friday and again on Saturday for the Centennial Day at the Festival.

Amateur radio operators from several clubs have also volunteered to assist in the staging of the parade. It will be a large task lasting almost all day long, with staging to start in the morning. Any other amateurs, especially those with parade experience, can volunteer by calling me at 231-1889

Ohm's Law for resistance:

$$E = IR \quad I = \frac{E}{R} \quad R = \frac{E}{I}$$

Ohm's Law for conductance:

$$I = EG \quad E = \frac{I}{G} \quad X = \frac{I}{E}$$

Ohm's Law for reactance:

$$E = IX \quad I = \frac{E}{X} \quad X = \frac{E}{I}$$

Ohm's Law for impedance:

$$E = IZ \quad I = \frac{E}{Z} \quad Z = \frac{E}{I}$$

## REVIEW OF PARADE HIGHLIGHTS

-The Oklahoma City Council approved a resolution recognizing the Centennial Celebration and authorizing a half day holiday for city employees to begin at 12:00 Noon on April 21, 1989 and encouraged other businesses and schools to "jump the gun" and participate also.

-Admiral William J. Crowe, Chairman of the Joint Chiefs of Staff in Washington and native Oklahoman will be the Grand Marshall of the Parade.

-The parade will be televised live on KOCO, channel 5.

-Giant floating helium balloons, like in the famous Thanksgiving Day parade, will fly for the first time in Oklahoma City at "The Sooner Parade".

-Over 30 floats and 15 bands are highlights in the total list of over 100 parade entries. It was noted this year's Cotton Bowl Parade had 12 major floats and 15 bands in an hour long program.

-Many out of state entries: Domino's Pizza Pones (Ann Arbor, Mich), Mayflower Moving Co. Float (Indianapolis, Ind.), Owens Country Sausage (Richardson, Texas), Greyhound Bus Lines (Dallas, Texas), and the Coors Belgian Hitch (Zearing, Iowa).

Capacitors in parallel:

$$C_{\text{total}} = C_1 + C_2 + C_3 + \text{etc.}$$

Inductors in series:

$$L_{\text{total}} = L_1 + L_2 + L_3 + \text{etc.}$$

Two inductors in parallel:

$$L_{\text{total}} = \frac{L_1 \times L_2}{L_1 + L_2}$$

More than two inductors in parallel:

$$L_{\text{total}} = \frac{1}{\frac{1}{L_1} + \frac{1}{L_2} + \frac{1}{L_3} + \text{etc.}}$$

Transformer voltage ratio:

$$E_s = \frac{n_s}{n_p} \times E_p$$

Transformer current ratio:

$$I_p = \frac{n_s}{n_p} \times I_s$$

Transformer efficiency:

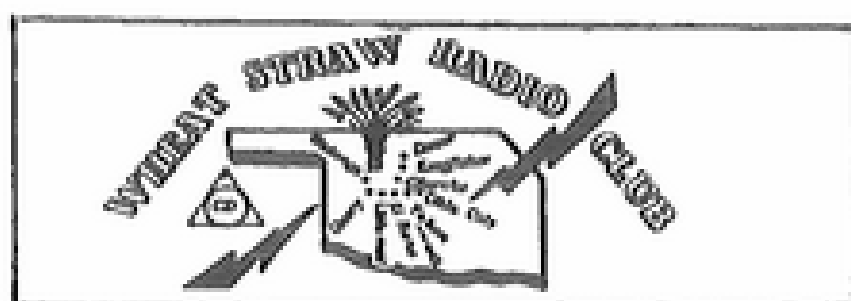
$$P_o = nP_i \text{ (} n = \text{efficiency factor as a decimal)}$$

Inductive reactance:

$$X_L = 2\pi fL$$

Capacitive reactance:

$$X_C = \frac{1}{2\pi fC}$$



The March 12th meeting was held in the Peoples National Bank community room at Kingfisher. There were 34 present. We had one visitor, WA7AZO Carl from Hennessey. We were certainly glad to meet him, and welcome him to our club. Carl has been checking into the club net for some time.

A committee has been named by president W%MGZ Perry to look into and arrange for the 30th Anniversary of the Wheatstraw Club. They are K5GBN Johnny, WA5PFK Ralph, and N5IJN Tom. I understand WA5RLP Margaret has a list of the charter members.

The next meeting will be stepped up to April 2nd as we caravan to the Mooreland Eyeball QSO, April 1st and 2nd. The caravan will leave Watonga from McBees's Steak House at 8:30 am on 146.52 simplex. Our president will join us at Seiling, then the meeting will be held on the way to Mooreland.

Some of the members said they were going to the Weather Watch II and Net Operation meeting at the library in Norman, Saturday March 25th.

K5GBN Johnny announced that WA5FVJ had a heart attack and at that time he was in the Baptist Hospital. His name is Ken Rodenberg, Route 1 Box 6, Drummond OK 73735. We are all sorry to hear about it, wishing him the best with a quick recovery.

W05B Ed, net control for March 1, set another record by one for the Wheatstraw ARC. He had 32 check ins. We enjoyed every one of them.

KB5FYF Jane of Weatherford got her new call this month. She is now N5NZU, congratulations Jane.

KD5OG Ralph is home now, thanks to the medical profession. Now he can enjoy his dog Peedy, and his radio. We are happy you're home and take care of yourself.

Sunday meeting. WD5GLD had a program on AMSAT, it was over my head. Any way he showed us the software for tracking the Russian space station, how it could tell where it is at all times and the time of day. Dick said there are six sate-

lites in orbit of that caliber. The program was good but it left me wondering which way the men would have to turn their heads to blow their nose, since they make a complete orbit of our planet every ninety minutes.

K5GGL had a film showing the examples of how a telephone operated from the first number until complete. It was by the Bell System. It was great George

We adjourned for refreshments and more good fellowship. Good refreshments, thanks ladies.

THIS MONTHS SUBJECT IS THE  
PEILS OF CANTON OK

Leo was born June 25 1920 on a farm southwest of Homestead. He attended different country one room schools near Okeene. Leo graduated out of the eighth grade at Hitchcock. Finishing highschool at Liberty and Southard.

Leo and Darla Bedwell were married January 3 1942. To this union one child was born, a daughter who now lives in Kingfisher. World War II interrupted Leo's life. He served in the E.T.O., landing on Normandy Beach, D Day June 6 1944.

After getting out of service Leo went to work for the Corps of Engineers driving heavy earth moving equipment until retirement. During his employment he was moved to different parks and lakes, landscaping, building all kinds of park improvements.

Darla retired and the two of them were enjoying life. They were another "snowbird" couple going down to the Gulf for winter in South Texas. Near mid winter Darla had a severe heart attack, in a hospital, much too serious to be flown home. When Darla got well enough she was moved to their trailer. Leo being a licensed Amateur of course took his equipment along. Every evening Leo talked to several Wheatstraw members plus Denver, stations in Kansas, Enid, Prague and several other towns. Darla was close to the radio where she heard us and would tell Leo what to tell us. It helped all to hear them every day. A tragic loss to all who knew her. She passed away March 10, 1982.

Leo's daughter gave him 2 grand daughters, now he has 2 great grand daughters. In later years Leo and Ann got

V.E. TEST SESSIONS ARE HELD THE 3RD MONDAY OF EACH MONTH AT 6:00 AT THE OLD OKLAHOMA CITY RED CROSS BUILDING AT 10TH AND HUDSON.

THESE SESSIONS ARE CONDUCTED UNDER THE W5YI PROGRAM AND ARE SPONSORED BY C.O.R.A.

TEST SESSIONS ARE FOR ALL LICENSE GRADES; FROM NOVICE TO THE EXTRA CLASS. WALKINS ARE ACCEPTED. WHEN ATTENDING A TEST SESSION, PLEASE BRING THE FOLLOWING:

1. PEN OR PENCIL
2. CALCULATOR (IF DESIRED)
3. DRIVER'S LICENSE (OR OTHER SUITABLE I.D. FOR MINORS)
4. ORIGINAL HAM LICENSE (YOU KEEP)
5. XEROX OF HAM LICENSE (WE KEEP)

FCC FORM 610s WILL BE FURNISHED AT THE TEST SESSIONS. A \$4.75 FEE WILL BE CHARGED EXCEPT FOR NOVICE TESTS. IF POSSIBLE PLEASE BRING THE CORRECT CHANGE. THIS FEE COVERS AS MANY ELEMENTS AS YOU SUCCESSFULLY CONTINUE TO PASS

married. Ann is employed as a nurse at the hospital in Fairview. Ann has 3 daughters and 9 grand daughters.

Leo has done re-shingling, sowing wheat, combining, and picking up and delivering new vehicles.

Leo gives AB5Z Ray Barnes of Longdale credit for getting him interested in Amateur Radio. Leo had come up through the ranks of Novice through Amateur Extra, with the call of WZ5H. Enjoying Amateur Radio Leo spends most of his free time on the HF frequencies.

Having nineteen lovely women in his life, no son or grand sons, Leo has turned to the kitchen. He is the official chicken and home made noodle maker of the community.

In 1988 Leo had a radio school turning out 12 Novices. Then a class with 11 upgrading to Technician. In 1989 he has a class of 8 going for General. Leo has been nominated to ARRL as teacher of the year, good luck Leo.

Leo and his wife are dedicated to their friends and community. Keep up the good work.

WA5PFK, Ralph

# CIMARRON

CARA territory felt a little left out when net participants from the east half of the state began reporting heavy snow! We are dry out here, and we were not in a receptive mood when last Tuesdays dust storm blacked us out. Ponds are dry generally. The wheat that is our meal ticket is recovering from the hard dry freeze though, and nothing is wrong that a good soaking rain couldn't fix.

Several super solar flares have occurred recently. It will be interesting to see what effect this may have on communications. It has certainly furnished a spectacular view of the aurora borealis for the lucky few early risers who saw it.

More pertinent to us, perhaps, is the effect it may have on our weather.

CARA's March club meeting was held on the usual second Thursday, March 9th., and the evening was spent usefully, under the chairmanship of President Jack Kelly, N5LEB.

Nadine N5FMH, reported that steps had been taken to insure that some of our newer members were finally placed on the C & E mailing list. Editor Joe Harding has assured us that the missing issues would be sent. Thank you, Joe!

CARA members are looking forward to the SEVERE STORM program by Bill Bunting of the National Wx Svc. It will be held April 11th., at 7:00 PM, in the Fairview City Auditorium. The public is invited...no...URGED to attend. The weather no longer just means the difference between a good crop or a poor one...it can mean life or death to many!

CARA members are urged to participate in the 145.45 weather watch by Jack N5LEB, who is the Civil Defense Officer in Fairview.

The hat was passed, during the meeting, to replenish the refreshment fund.

Steve KF5SW, suggested that we have a few TECH-TALKS in future meetings, and was promptly given first chance. Steve always comes up with something useful and we are looking forward to his presentation, April 13th.

David Rumsey N5MZP, came up with a possible solution to our search for a Disaster Communications trailer. He and Leo WZ5H, are to report on what success they have at our next club meeting. We already have acquired a portable tower, and it is hoped that CARA will be prepared in the foreseeable future for what we hope will nev-

## \*\* ARES REPORT \*\*

The Central Okla. ARES Dist. consists of 8 counties in central Oklahoma. As ARES Dist. Emergency Coordinator, I am responsible for the ARES preparedness to respond to the need for communications. Each county has or will have an emergency coordinator whose job will be to organize a group of amateurs who know what their assignments are in case of a disaster. These people are the heart of any response team because they can coordinate the amateur community with the various disaster relief groups to provide communications. Radio amateurs have always responded to any call for help in these matters, however any one who has experienced this activity knows advanced training and job assignments come in handy. Part of this planning is getting acquainted with the various disaster groups and government agencies before hand. This gives them a chance to know who you are, what you can do to help, and that you are not just one more sightseer under foot to keep track of. One thing to stress with these people is that all you will be doing is communicating for them and not running around playing cop.

You do not have to be a member of ARES or the ARRL to help, however, the emergency coordinator in your county could do his job easier if he knew about you - so contact him.

er happen....a real...surenuff Disaster!

Terry N5MLT, reported a new desk for his radio shack and the rest of an enjoyable evening was spent in STB!

Those attending the meeting was: Ray AB5Z, N5LEB Jack, David N5MZP, Betty KA5RTW, WX5Y Ruth, N5FUN Dede, N5FMB Nadine, WZ5H Leo, WK5V Denny, KF5SW Steve, N5MLT Terry, KA5SZD Vern, and NN5Z Jack.

The CARA VE test session was held on schedule March 11th., by WZ5H WK5V, AB5Z and NN5Z officiating. Those taking tests included Terry McColl, Vern Brewer, Olive Adams, Harold Wells, Tom Worth, Sheryl Baker, Robert Baker, David Cole, David Rumsey, Harley Eliot, and Tom Adams.

David Cole passed his Extra Class theory, and Tom Adams passed his 13 wpm code test. Although there were several near misses, we had only one up-grade....Thomas Worth N5LWT, of Enid, who has a brand new Advanced Class ticket!

This looks like a good place to write "30"! Remember club meetings...second Thursday of each month...WX5Y Playhouse, 827 S. 13th...Fairview, America! Be there or be square.

73's NN5Z

If you do not know who he is call or write to me and I will give you the information.

Some counties do not have enough resident amateurs to form a team so the Central District has started to form a response team. It will be complete with an emergency trailer containing a 5KW generator, 24 hours of fuel, fold up tower, feedline, antennas, power cables, and lighting. This is put at our disposal courtesy of the OCAPA Club. Also accompanying this unit is a Salvation Army mobile canteen.

This team will go into any one of these 8 counties \*\* only \*\* after being requested by the local county emergency coordinator and local amateurs. It will be placed at their disposal until no longer needed. This should eliminate duplication of response units in each of these counties. This however does not mean they cannot form their own unit if desired.

A radio station capable of HF, VHF, and packet is located at NW 50th and Penn. in Okla. City. This is an ARES controlled station to furnish contact between the disaster site and the agencies they wish to contact. The Salvation Army can furnish food and sleeping facilities for the amateurs who man this station in an emergency.

If you wish to be a part of this group contact Frank McCollom, N5FM, 2421 NW 118th St., Okla. City, OK. 73120 or phone me at (405) 751-3577.

For some years now a group of amateurs with Jim Buswell, N5BEQ, as net control tried to assist the Oklahoma City EOC test the warning sirens in Oklahoma City. The net later was conducted with Sylvia Henderson, N5IZZ, as net control. Since Sylvia has moved to Connecticut to be with her husband Randy, W15W, now working at ARRL headquarter, we have had a new volunteer. James Rouse, N5NEI, is the new net control and net manager.

The test have been frustrating for the amateurs who made their way on the first and third Saturdays of the month to siren sites and found the sirens that they reported inoperable last time were still not working. I have been on the same siren location for over a year and it never has worked once. Others have had a similar experience.

After a letter to my Councilwoman and several eyeball contacts with Jim Patty, the Director of Emergency Management for Oklahoma City, I was privileged to read a memorandum written by the person in charge of maintaining the sirens. I would like to share his

CONTINUED ON NEXT PAGE

G. R. ZEDD

SASE and I'll take it up with my manager. Over."

"Zither, Zong - whatever is your name - if you want QSL from greatest hero of Red Army radio club, you send ten IRCs care Box 88, Moscow, maybe you get card in about twenty years, da?"

"Boris, old pal, old buddy, old sock, I sure would like to have your card, uh-haw. Who is the control operator there making sure you don't screw up the knobs? Over!"

"A5A, this UA1AAAAA for ID. Ziff, Zagger - whatever - how does it feel, being second-class operator behind greatest radio sportsman, myself, Boris Badenov, hero of whole Soviet Union and everyplace radio waves have propagated so far, hah?"

"UA1AAAAA, this is A5A. Well, Boris, old bean, your signal went up a little that time and I could almost make out what you're saying there. Hey, do you have the address of your big boss over there? I want to let him know we've made this heroic effort to make out what that garbage station of yours is putting out. Maybe he'll want to give me a medal for working so hard to further glassblower, or whatever that stuff is he's been pushing, you know, about us getting along better and all."

"Zaggernaut, this is Badenov returning. Your signal mostly lost in racket from hated American Woodpecker. Hey, Yankee dog, I read in Pravda how your favorite teams are cheat and low-lifers and put on probation long time by your decadent NCAA, da? How you like not seeing your teams on TV, and they can't go to no bowl games long time, hah? I think is very funny, Zapper, your teams all get caught being cheat! Ha ha ha! Over!"

Zedd covered his boom mike so the VOX would not key. His face had darkened with rage and pain. "This is hitting below the belt. Insults to me and my family and my station - and even to the South Canadian Amateur Radio Society - I can handle. But this is really a low blow. This is dastardly."

Zedd uncovered the mike. "Okay, Boris, I didn't get any of that. You've faded into the QRM. Take care, buddy, and seven-three. This is the world's greatest, G. R. Zedd, from Honor Roll Ranch in the heart of the wishbone country. UA1AAAAA, this is A5A. So long."

The audio came back so strong that lampshades rattled in the hamshack and KD5IT's eyeglasses cracked, much to his consternation and loss of professorial dignity:

"Zibblehoffer, this Badenov! You don't cut me off, you capitalist

oink! I want tell you more about how I laugh when I hear about Sooner and Cowboy penalties! I laugh in your face over this cheat, da? You want know how great hero of Soviet Socialist Republics spread word on your teams being criminals? Hey, I -"

Badenov's voice got no farther. With a cry of outrage, Zedd had cut the audio and swung around to the master console for his antenna farm. With his knee, he simultaneously sent power to his No. 1 linear.

The BIG linear.

The one south of the house.

In its own separate building with 16 acres of floor space.

The room lights got brown. The earth trembled as monster motors began to turn antenna arrays far overhead. Needles on panels centered. Computers smoked.

"No, Mr. Zedd, no!" cried WU5W, near a swoon of terror and consternation. "Not the BIG linear! Not at full power! Not into the stacked eighties and the four-mile rhombic!"

Alas, it was too late. Tormented beyond human endurance, Zedd not only had full power at his fingertips - and the uncanny precision of his entire antenna farm at his disposal - but he was clearly twiddling the knobs that tilted his arrays for the best bounce off the ionosphere.

At the moment he keyed his mike, bluish lightning played blindingly beyond the windows of the ranch house. There was a sound like no one had ever heard - a high, wailing, screaming sound. Tortured electrons.

Into the mike, Zedd said, "Boo!"

We are told that the fireball that descended on Badenov's antenna farm was terrible in its intensity. Badenov had just had time to jump into an asbestos suit. He survived.

Whether he learned his lesson - that even a man of Zedd's saintlike patience can be pushed too far - remains to be seen.

The moral of the story is clear. Don't make fun of someone whose team is on probation. Some of them don't see anything funny about it at all, at all.

-- KU5B

ARES ARES ARES

views with the amateur community. I might add that after reading his memo to his superior I agree with his assessment of the situation.

First: There are no warning sirens at any city lake that is operable.

Second: Vandals destroy some as soon as they are fixed.

Third: One, #83 at Harvest Hills School, has a broken power

line that runs under the parking lot and the school is unwilling to allow excavation to repair it.

Fourth: The 2 1/2 Ton basket - lift service truck cannot get to some sirens to work on them unless the ground is dry.

Now the greatest majority of the sirens are over 30 years old. They were originally purchased with Civil Defense funds during the bomb scare of the late fifties. Their primary function was to warn of an "Attack". Later they were assigned the task of warning the citizens of a tornado. About 8 years ago a few newer units were put into service. The Electronic Control equipment at the EOC is described by the memo as "Pre-Neanderthal" and due to its advanced age and obsolescence of components, is almost impossible to maintain at any acceptable degree of reliability. Due to inadequate funding and shortage of personnel, there is presently no means available to perform the necessary preventive maintenance. They can only try to fix it when it breaks.

Now consider the major flaw as the writer sees it, is in the system itself. Even if the system was operating at 100%, its ability to provide adequate tornado warning during a storm would best be described as a cruel joke on the citizens of this community who feel they can depend on it. The sirens for the most part are mounted 1/2 as high as is the minimum effective height. If they were not obstructed by buildings or trees, the practical effective range of each siren is a radius of one mile (a total area of about 9.86 square miles). With a total of 47 sirens, total system coverage would equal approximately 463 square miles; for a city of about 625 square miles. This coverage is mediocre (for people outdoors). If a person were indoors, with TV or radio playing, and with storm noise, the effective range of each siren would be reduced to only a few blocks. There is no back up power on any of these sirens. "I feel that we are grossly remiss in our responsibility to the public as long as we continue to lead them in the mistaken belief that they can place their sole reliance in this system for alerting them to an impending tornado." "I use a battery powered NOAA weather radio with the warning beeper to provide warning for my family", writes the memo author.

I, as the ARES District Emergency Coordinator, feel that this person knows what he is talking about. I intend to heed his message. I recommend you do the same.

N5FH

| SUN   | MON   | TUE                                       | WED                 | THU   | FRI  | SAT  |
|---|---|---|---------------------|---|--|--|
| MARCH<br>S M T W T F S<br>1 2 3 4<br>5 6 7 8 9 10 11<br>12 13 14 15 16 17 18<br>19 20 21 22 23 24 25<br>26 27 28 29 30 31 | MAY<br>S M T W T F S<br>1 2 3 4 5 6<br>7 8 9 10 11 12 13<br>14 15 16 17 18 19 20<br>21 22 23 24 25 26 27<br>28 29 30 31 | APRIL                                     |                     |   |  | 1<br>FIRST DAY<br>OF THE<br>MOORELAND<br>EYEBALL QSO |
| 2<br>2ND DAY<br>EYEBALL QSO<br>WHEATSTRAW<br>ARC  | 3   | 4   | 5                   | 6<br>AERONAUTICAL<br>CENTER ARC<br>New Moon   | 7  | 8<br>SOUTH<br>CANADIAN<br>ARS                        |
| 9   | 10<br>EDMOND CLUB   | 11<br>O U<br>76'ERS<br>OIDAR              | 12<br>First Quarter | 13<br>ALTUS AREA<br>A R A<br>CIMMARON ARC     | 14   | 15<br>CENTRAL<br>OKLAHOMA<br>VHF CLUB                |
| 16  | 17<br>VE EXAM<br>6 PM RED<br>CROSS BLDG   | 18<br>OK CITY<br>AUTOPATCH                | 19                  | 20<br>KAY COUNTY<br>A R K<br>1st Day Passover | EDMOND<br>SOCIETY<br>EDIT NIGHT<br>FOR<br>C & E                    | 22   |
| 23<br>30  | 24  | 25<br>CORA CORA<br>CORA CORA<br>CORA CORA | 26                  | 27<br>8th Day Passover                        | 28<br>HAM HOLIDAY XVI<br>THE LAST FULL WEEKEND<br>IN JULY 28-29-30 | 29   |

## Q. R. Zedd

### SOME PEOPLE HAVE NO CLASS

Q. R. Zedd, A5A, world's greatest Dxer, was relaxing in his hamshack recently and tuning all bands, all modes, all frequencies, as usual. A handful of the faithful from his local radio club, the world's greatest (of course), were sitting around watching in admiration and hoping to pick up a few tips on how to get nearer the DXCC Honor Roll, which Zedd leads as always.

It was an inspiring scene. There sat Zedd, feet on the edge of his circular operating desk, looking relaxed and debonair in his Oklahoma State sweats, his Boomer Sooner cap and his Rome Olympics sweater, casually working countries on CW with both hands, talking to an old pal in XU (or maybe it was Ardmore) on 160 meters (using the VOX-operated boom mike stuck to his forehead with a rubber suction cup), keeping an eye on the moonbounce operation and the OSCAR transmitter, and obviously

listening for new calls on his other hf scanners and the bank of VHF gear arrayed between his operating arena and the bleachers along the south wall where we all sat.

The holder of the country's only 1x1 callsign was still wearing his black armbands in recognition of the bad stuff perpetrated recently by the NCAA. He looked a little tired, his handsome visage sagging slightly, after his whirlwind visit to Dallas, where he lent his expertise to the Cowboys' staff planning next year's personnel and strategy.

The great man brightened visibly, however, as his beloved son Zepp tottered into the room, showing a plastic toy lawnmower and jabbering a mile a minute on his tiny, back-mounted UHF rig. I think he was working a remote link into a 15-meter transmitter being monitored by Zedd as control operator, because he was talking to Poland. But Zepp passed the Advanced Class test at 14 months of age, so maybe he didn't need supervision.

"Da-da!" Zepp gurgled. "Oochie schoochie dewey plah-play!"

"Right, son," Zedd snapped. "Now pay attention to your business there and work that UA station that's calling you."

About this time, one of Zedd's

automatic scanning monitors -- maybe on a 20-meter rig -- lit up like the Lloyd Noble scoreboard when Billy's boys are playing at home.

Zedd signed with two Russians, a Brit, a couple of Fiji islanders and everybody in Southeast Asia. "I recognize that call!" he said with a glare of concentration, flipping switches to rotate a 10-over-10 at 800 feet.

Then Zedd keyed a mike: "UA1AAAAA, this is A5A, over!"

Back came a familiar voice, about 90 over 9: "A5A this is UA1AAAAA. Name here is Boris Badenov, you Yankee imperialist swine, in case your brain is more dead and you cannot remember greatest Dxer in world, hah hah! Zipp, Zapper, whatever your name, you are usual about three and three, I repeat, three and three, but I put you in log as five and nine, give you a thrill. Over!"

Zedd sighed and tripped the VOX: "Howdy, Boris, you old skunk. This is Zedd. You're getting in here okay, about the same signal strength as my neighbor's bug light a couple miles down the road, and your readability ain't quite as good, but I'll log you as five and nine also, old chum, and if you want a QSL, you just send me two green stamps and a

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