

SECOND CLASS MAIL Postmaster, see page 3

## Q. R. Zedd

### RING THE BELLS FOR LITTLE ZEDD

#### Births

A son, 8 lbs. 10 oz., to Mr. and Mrs. Q.R. Zedd, A5A, just a hoot and a holler south of town, at Norman Regional Hospital Tuesday.

Most faithful readers will have seen the above announcement, or one similar, since the news went out on AP, UPI, Reuters, CNN, all ARRL frequencies and the C&E Bulletin. We do, however, have a serious historic function here as part of our ongoing journalistic responsibility, so we want to make sure you have the facts before getting to the other stuff we have to report this month.

Tondelayo did just fine. Zedd, A5A, world's best DXer, was in a QSO with a rare one, so Tondelayo understandingly drove herself to the hospital. Momma Zedd (of Mena, Ark.) was visiting, and she would have taken the dear girl on her Kawasaki, but Momma was down at Red's in a break-dancing contest she just couldn't leave right then.

The little mother was radiant after a labor of a few hours, and the darling baby was hollering like mad in the nursery. The boy-child was kind of purple and wrinkly and repulsive, but newborns are all like that.

The proud parents announced that they would call the child Zepp Marconi Zedd, after Q.R.'s father and one of his ancestors on his mother's side.

Zedd installed a CW monitor in the crib, and Tondelayo recited AC theory during feeding times.

By the time you read this, it is anticipated that

mommy and daddy and itty bitty Zeppy will have left the sweetsie itsie hospital and toodled home in the cutey nicey truckie, to the funsy lovesy ranchie forever more.

Bells rang in London at the news of the birth. The Pope issued an encyclical. The White House sent a telegram. The South Canadian Amateur Radio Society sent a flower. A few dignitaries -- the Queen, Debra Winger, Brian Bosworth and the like -- visited the ranch.

Last Sunday, a worldwide alert startled the USAF as an unidentified Soviet bomber streaked through U.S. radar defenses. However, it was quickly determined that the plane was on a special mission to Honor Roll Ranch from Moscow, and the Iluyshin 222-B was given a special escort through the Zedd antenna farm and to safe landing at the Goldsby International Airdrome.

When what to our eyes should appear, hopping out of the bomber, but this big dude with a bushy black beard, 44 front teeth, rumpled Russian

army uniform (complete with 17 rows of medals) and pasture-patty boots, leaving a trail of crushed Twinkie wrappers and empty Coors cans.

Had to be, and was, Boris Badenov, ace Soviet DXer and longtime irritant to the great Zedd.

"Where is this capitalist lackey swine, Zipp, eh?" Boris roared. "I have come from beloved mother Russia, give the nerd my personal congratulations and let him feel my BY QSL card! Is big thrill for him, hah? Where at is he, eh?"

A couple of the local boys and two disguised CIA agents brought up a car, complete with multiple bugs and hidden cameras. As Badenov looked the conveyance over, out of the airplane behind him bounded this vision of loveliness in a black leather jumpsuit, black boots, rhinestone dagger belt and crimson flagellation gauntlets, none other than Natasha Bullwinkle, brunette, nubile, youthful QSL secretary from Box 88 and Badenov's constant companion.

CONTINUED NEXT PAGE

# WATERMELLON FEED U'ALL COME

7:00 PM AUGUST 21, 1987

WEST SHELTER - BETHANY'S

ELDON LYON PARK

1/2 MILE WEST OF ROCKWELL ON 36TH

VHF & Aeronautical Center Clubs will furnish the watermelon.

You bring: (1) appetite, (2) knife, (3) fork, (4) plate, (5) salt, (6) lobster bib, (7) towel, (8) raincoat, (9) any or none of above.

## CIMARRON

The pace of summer has been exhausting this year. Many friends and relatives, particularly grandchildren, have made Red Gate Farm a part of their summer and while it has all been enjoyable, it has made routine commitments non-routine. Fortunately, CARA has been reasonably quiet.

It needs to be reported that our friend Fred Simpson, known to us as N5FUO, but who is a past W5CFO and W5HMA, is silent key. CARA will not be the same without Fred. We loved him very much. Ruth, whose Extra call, WX5Y, is brand new, carries on the tradition, along with son Bill, N5HQR and his lovely wife Helen, N5HQL.

The new VE program has certainly made upgrades a lot more convenient, if not easier. CARA has a rash of new call signs. Besides Ruths WX5Y, Ed Annote is now WZ5F, Leo Peil is WZ5H, Norman Dow is KB5DIA, Deanna Adair is KB5DIB, Jack Kelly, our CD director is KB5DIB, and of course Denny Painton has been WK5V for some time now.

Field Day had its distractions including my 50th High School Reunion but CARA had a good group of Hams participating. Steve Schoonmaker, KF5FW, Bill and Helen Simpson, N5HQR and N5HQL, Terry McCall KA5TVF, Denny Painton and Nadine, WK5V and N5FPH, and Ed Annote WZ5F all participated and a good time was had by all. Plans are already being laid for a better score next year.

Code practice is being held in the playroom of Ruth Simpson. If you wish to partici-

pate, see Denny Painton.

Members of the Baptist Amateur Radio operators supporting their Disaster Relief Operations are planning to meet at Ham Holiday. We are to gather in the Lobby at 2:00 Sat unday. There will be an election of officers for the new year.

There were too few members present at the July CARA meeting for business to be transacted but an evening of Ham talk was enjoyed by Denny and Nadine, Jack and Betty, Ruth, Terry and Steve Schoonmaker. Members of CARA are urged to be present at the August meeting.

Last but not least, our old friend and long time club member, Leo Peil, now WZ5H, has weathered open heart surgery. Leo, we did pray for you full recovery and hope that this is it. 73's....Jack

### ZEPP ARRIVES, WRINKLED

W5RZX tried to help Natasha into the car, but she slid nimbly aside and made a quick, savage gesture.

"Ouch!" W5RZX screamed. "Ow! Ow! Heck!" And possibly some other words, because Natasha had stuck him with her dagger.

"You touch sexpot intellectual genius and radio sportswoman of Soviet Union, pig, and I stick you with my knife!" Natasha hissed.

"Now you tell me!" W5RZX moaned.

"But now," Natasha cooed, moving closer, "I see you are how you say in pig capitalist countries, kind of cute, eh? Hey, big boy, you kind of... how you say... hunk, hah? How you like come Armenia with me, do some DX, huh?"

Patriot that he is, W5RZX declined, citing pressure of studies and the American Way. Natasha snarled a bit, but then accompanied Boris to the ranch.

We would like to tell you what happened at the ranch when the two great DXers met,

### AN EARLY WARNING

Be it known by these premises that MORI will meet on Tuesday AUGUST 4th to vote on raising club dues.

The meeting will be at Southwest Oklahoma City Junior College, at 8:00pm.

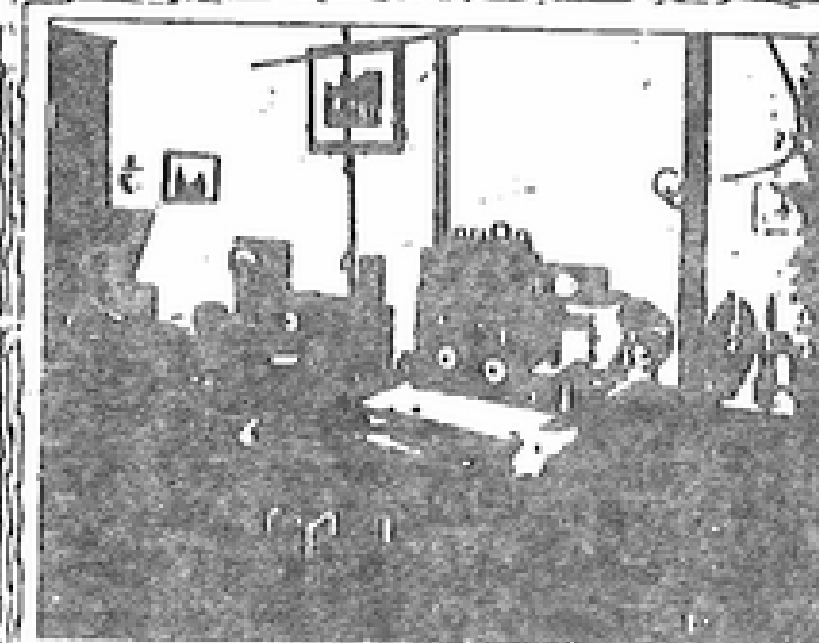
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## QSL cards!

# QST

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AUGUST, 1921

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and actually that was our intent when we started this article, but how space evaporates when you're having fun, and the juicy part will have to wait until next month.

Try to bear up, guys. It won't be all that long.

--K5B

**1 AERONAUTICAL CENTER ARC**

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

PR BOB PACE, WASCJG 376-3569  
VP  
S/T JACK INAM, WBSVNI 677-8537  
EDITOR: BOB PACE, WASCJG 376-3569

**2 CENTRAL OKLAHOMA VHF**

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

PR JERRY METHORE, KDSIS 524-5080  
VP RICHARD GIMMEL, KASTTH 721-3991  
SE JOE BUSHNELL, KSID 732-0676  
TR ELLARD FOSTER, WSKF 789-6702  
EDITOR: JOE BUSHNELL, KSID 732-0676

**3 MID-OKLA REPEATER**

MEETS: FIRST TUESDAY 8:00PM, OC COMMUNITY  
COLLEGE 7777 S MAY ROOM 101

PR BOB ALLEN, WSEPV UNLISTED  
VP TIM RAUSCHER, KASHUG 848-9910  
SE RICHARD WOOD, KSONH 677-0363  
TR JIM JONES, KSPER 634-5235  
EDITOR: TIM RAUSCHER, KASHUG 848-9910

**4 OK CITY AUTOPATCH**

MEETS: 7:30PM, SALVATION ARMY, NW 50 & PENN

PR CHARLES HOFFERBER, WSFHU 340-4468  
VP DAVE HOLDER, WSGDY 524-4711  
SE DAVID CARM, KFSEB 751-5672  
TR ART HERMANDEZ, KFSOK 354-9724  
EDITOR: DAVE HOLDER, WSGDY 524-4711

**5 OKLA UNIVERSITY ARC**

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

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

**6 ALTUS ASSOCIATION**

MEETS: 7:30PM SECOND THURSDAY  
NORTH MAIN FIRE STATION (CD) ALTUS

S/T MIKE SULLIVAN, W78NU 477-2938  
EDITOR: MIKE SULLIVAN, W78NU 477-2938

**7 BICENTENNIAL (76er) ARC**

MEETS: 7:30PM SECOND TUESDAY  
KIP'S RESTAURANT, RENO & MERIDIAN

PR DONALD DUCK, AESM 691-4199  
VP TED VAILANINGHAM, WDSJHT 262-1675  
SE JERRY SPROUL, WSAUH 334-2061  
TR  
EDITOR: JIM SEALS, K8SIN 381-2005

**9 WHEATSTRAW ARC**

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

PR RALPH WILBER, WSPFX (WATONGA) 623-5421  
VP TOM JOHNSON, WSIKH (EL RENO) 262-5631  
S/T JOE GARLAND, WAFLE (CALUMET) 893-2660  
EDITOR: JAN KUHN, WJUT (OKMCH) 263-4480

**10 CENTRAL OKLA COMPUTERS**

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

PR PAUL PAPE 755-1058  
VP RONN FOLK 737-3580  
S/T MARTIN SCHIEL 670-6891  
EDITOR: MARTIN SCHIEL 670-6891

**11 EDMOND AR SOCIETY**

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

PR PHIL WOLFENBARGER, WSHIP 789-0681  
VP LEE VAUGHN, KASWIS 348-2961  
TR EDITH VAUGHN, KASYPI 348-2961  
SEC JANA THOMASON, K8SADP 342-1798  
EDITOR: LEE VAUGHN, KASWIS 348-2961

**12 QUARTER CENTURY W A**

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

CHM ROBERT RUNYON, AA00 373-1818  
VCH GENE MALLON, K5OLE 341-8289  
S/T HOWARD BAKER, W5AS 321-5453  
EDITOR: ROBERT RUNYON, AA00 373-1818

**13 KAY COUNTY ARC**

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

PR DAVE LAND, K8SFI 762-8616  
VP STEVE SCOTT, KASSGK 762-0117  
S/T HARRY BEATTIE, WDSOPR 765-3862  
EDITOR: CHARLES NORTH, WSEYD 762-8136

**14 CIMMARON ARS**

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

PR BILL SIMPSON, WSHOR 274-3334  
VP RAY BARNES, AB5Z 764-3599  
SE DENNIS PAINTON, WKSJ 227-3672  
TR TERRY MCCOLL, KASTVF 227-3462  
EDITOR: JACK DAY, WMSZ 227-3462

**15 SOUTH CANADIAN ARS**

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

PR MARK KLEINE, WSHZR 329-4285  
VP ANDREA WOLFE, WUSW 799-5150  
SE LINDA BRANDT, WSDNH 321-5081  
TR MONTE BATEMAN, WDSRZI 329-7485  
EDITOR: DAVIS EGLE, KDSIT 321-7570

**16 EDMOND AR CLUB**

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

PR MARK NORTHCUTT, WDSOYI 755-4672  
VP BOB MOORE, KASETA 799-1765  
S/T KAY NORTHCUTT, WASBYJ 755-4672  
EDITOR: MARK NORTHCUTT, WDSOYI 755-4672

**17 OK CPH USER GROUP**

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

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

**18 GREAT PLAINS ARC**

MEETS: 7:30PM FIRST TUESDAY  
WOODWARD PUBLIC WORKS BLDG.

PR WINDLE MATCHETT, WASPLMFT SUPPLY 766-3561  
VP RON TICE, WBOPE6 (MOORELAND) 994-2138  
SE ROD FORD, WDSOVTIGAGE 923-7683  
TR FREIDA PATTERSON, WSEOT:WOND 256-2111  
EDITOR: LOIS FORD, W5J6D (GAGE) 923-7683

**19 OKLA INDEPENDENT ARC**

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

PR LIN JACKSON, KASIJM 762-7299  
VP BRUCE LEFEBURE, KASIKI NONE  
SEC BIL WICHY, WMOHCO 762-3297  
TR DAVE WHITE, WNSLUI 765-5707  
EDITOR: GLEN BISHOP, JR., KASPUB NONE

**21 TRI-CITY ARC**

MEETS: 1ST THURSDAY OF THE MONTH.  
PLACE:

PR ROBERT BOLTON, KASHMU 379-2365  
VP RON PHILLIPS, WBSUPU 382-1856  
S/T J. B. BILLS, KESMU 379-3992  
P.O. BOX 655, HOLDENVILLE OK 74848  
EDITOR:

**CENTRAL OKLA RADIO AMATEURS**

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

PR JIM BUSHNELL, WSBEG 236-0368  
VP FRANK TASSONE, KASHGS 341-4945  
SE LEE WARD, WSHIR 789-0681  
TR SUSAN ST LAURENT, KFSLG 324-8180  
CON/CON: CHARLES HOFFERBER, WSFHU 340-4468

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# SCARS

## held its meeting

on Saturday, June 11, at 9:30 am in the Norman Red Cross. There were twenty seven persons at the meeting. Ken Brown, NSKUK, is now a US citizen as well as a citizen of Australia( a dual bander?). Congratulations Ken.

## Monte reports

a balance in the treasury of \$1270. There were no expenses this past month.

## Preparations

for Ham Holiday are moving right along, according to Dave KSPL. As of Friday, July 10, there were about 120 preregistrants and the letters were coming in at about 25 per day. Dave reported that many of the planned programs were in place and the committee expected the hamfest to go very well. SCARS will have a table at the flea market for members. All you have to do is agree to sit at the table for a while. Call Mark, NSHZR, for further details.

## Field Day

was an outstanding success this year. Activities started as the sun came up with Ken, KASEFJ, going out early to make sure we got the shelter in Reaves park. Louis, KDSWA, and Bruce,xxxxxx, came out at about 10 am with 30 feet of tower and Louis' TET tribander. The beam was up in an hour. Marshall, WUSP, brought a sailboat(OK I know this sounds dumb but wait till you read why) on a trailer.

The mast of the boat served as a second antenna mast from which an 80 meter delta loop was erected. Actually the delta loop started out as a rectangular loop and was moved several times until we found a good configuration. The loop worked well on 80 during the nite.

Two regular transmitters were operated along with one novice/technician station. We had several persons operating this station this year. Most

of the contacts were on 10 meter phone. There were a significant number of CW contacts this year made by John, NSHHL. A total of 1014 contacts were made by the group after dupes were removed.

Yours truly worked the 2 am to 6 am shift and was amazed at the number of folks out at the park at 2 am. Must have been a dozen at least. I worked 80 m for a little over three hours and had good luck compared to the last couple of years. A gas grill showed up about 7 am and Louis and Dorinda whupped up an excellent breakfast omelette.

## A CW filter

has been installed in the Kenwood TS120 at the Red Cross. Mark, NSHZR, had bought a 270 Hz filter in Dallas and installed it recently. This ought to be a big improvement for you CW buffs. It will certainly help when we use the HF transceiver for demos in the Novice class.

## More new calls

from the last Upgrade class and VE exam are:

Bob Long.....	NSKUE
Al Porterfield.....	NSKUM
Ron Heyenga.....	NSKUN
Judy Sanford.....	NSKUO

## Anchor away?

Randall, NOHRF, departed Norman in July for Rhode Island and a US Navy training program. Randall finished OU this past spring and was commissioned at that time. He will be in a surface warfare school and then down to Biloxi to join the crew of the recommissioned Wisconsin, a WW2 battleship. Randall developed an interest in 2 meter SSB after buying a talkie with that capability at HamCom. In the last few weeks he was here he worked Florida and California on 2 meters. So listen for him if you have SSB on 2 m.

## Novice Class

SCARS will be conducting a Novice/Tech class this fall on Monday evenings from 7 pm to about 9:30 pm. The classes will start on October 12 and run through November 30. A VE exam is planned for December 2 for tech and other upgrades. Contact Monte, WBSRZX, or Davis, KD5IT, for more info.

## The next

meeting will be on Saturday, August 8, at 9:30 am in the Norman Red Cross building, 1205 Halley Drive. Hope to see you there and at Ham Holiday.

-----KD5IT-----

### TO MY NEIGHBORS: NOTICE

1. You have called to my attention the fact that transmissions from my station are causing interference to your reception.

2. Interference such as you describe is not caused by HAM operations, as HAM stations can not and do not cause TV interference. Nor is this interference the result of any malfunction of my equipment or poor operating habits, for my station is NOT a HAM station.

3. Be advised that your government is placing a \$500 per year tax on all TV receivers. Because it is difficult at this late date to obtain a listing of TV set owners for taxation purpose, our government has established a vast network of TV jamming installations with the goal that TV set owners will make themselves known to these jamming stations so that their names can be added to the tax rolls. This station is just such an installation.

4. Your government greatly appreciates you turning yourself in. You will be one of the first taxed. You have also verified that this TV jamming equipment is functioning properly.

5. We have also made note of the time and channel you reported this jamming. This information will be given to several TV rating services.

6. You have therefore provided a valuable service to the entertainment industry.

So that you will not only be the only one taxed, please be patient as we continue our TV jamming operation.

# Salem

## N5MS DOS - JULY EDITION

Where do these devilish people come up with the torture that is known as MS DOS? Now, when I first happened upon the term, I figured that anything that had the same alliteration as my initials and call sign can't be all bad. Well, I have been known to be wrong. And perhaps I am being a little unfair to the Disk Operating System that mimicks my namesake. For the most part, I use computers as tools, not toys. I need a data base and word processor for the office, I buy a computer. I tell you, it is great to get all those boxes in the mail. I mean, you just keep unplugging these shiny bright white boxes with the IBM logo on them. You plug them together and voila, that's all they are, just put together. Enter the expert, i.e., the computer nerd (that is what N5HZR calls himself). Actually, few people achieve nerdness, in the computer sense. Many people have nerdness thrust upon them. And a few, like myself, can only dream of the expertise that nerdness represents.

The unique feeling that you get from plugging all these boxes together is really the thought that to the computer illiterate, a computer is just as helpful and useful a tool when it is turned off as when it is turned on. Or for the uninitiated, it is no help at all. Learning MS DOS is an experience by itself. Nobody need be ashamed that maybe they are not up to snuff and this creaky old DOS is really easy to learn, you are just terminally dumb. Not really. After all, DOS is up to Version 3.3, a guaranteed indication that maybe those people at Microsoft are not really as smart as they think they are.

I bought a book on MS DOS. It was sort of a hands on approach. I did learn from it. I learned to not spend money on books that you don't read. The MS DOS manual is just about the same, but you don't

read the DOS manual for a different reason. You don't read it because it is incomprehensible. So, you are really left to learn DOS by osmosis from your friends and under the rule of necessity. That is, when you need to learn something, you read or ask what to do.

I have been looking at Word Processing Software for almost two years. I have tried some of the public domain stuff and a couple of bootleg programs,

Finally, after a lot of searching, I dropped the public domain stuff and switched to Word Perfect. It came highly recommended from some of the aforementioned computer nerds.

And what is particularly strange, they are right. It is truly a great and powerful software. I found a copy in the flea market in Dallas around the first of the year. I called SSI in Utah and asked them how much it would cost to update. They said just send the front page and a check for \$60.00 (In particular, don't forget the check). I got the updates, which included all new manuals and disks.

I had a fairly good size document that I needed to type. But, because of problems that I anticipated in learning new software, I just didn't feel confident about typing the paper with WordPerfect. What if it got caught in a loop and I lost the entire document? (Can't, they have a timed backup program whether you need it or not). Would it take me longer to type the document because the command structure was completely different and I might get confused? (Again, can't happen since most of the functions have been placed with the Function Keys and SSI furnishes a template that fits over the keyboard). Well, it didn't happen and I typed the document and made corrections in rapid time order.

WordPerfect has several features that are peculiar to it. One of the neatest is to create an index and tables of material cited within the document. This is unbelievably easy. One such document that I had prepared several months ago took two secretaries almost a full day to type the index and create the tables of citations. That can be expensive. With WordPerfect, it is perfection itself to create these features. As you type the text, you

mark sections and drop them into particular categories. This goes for the indexes. If you change or add something, not to worry, just delete the material that the marked.

If you want, you can type the document, then go back and mark everything. This is great, except that you have to be a little careful. It probably takes a little longer since you have to carefully search and mark the sections you want.

It took me several hours to mark all the appropriate texts for the indexes and tables. I planned on punching the right buttons to create the tables, but before I did, I made about three copies of the document on backup disks so that there was no way I would screw the document up and not recover it or at least a copy. Well, the moment of truth came. I started generating the indexes. The screen sort of went blank, an inauspicious beginning, then brought a couple of lines on the screen and started counting some numbers. It took it about five minutes of very heavy searching and checking, but then all of a sudden, the screen just filled with information. I was amazed. They were not perfect, but it didn't miss much. The only real errors that it picked up were because I had mismarked a case. I went through and edited out some of the problems and cleaned them out and added somethings that had been missed. Well, it was just amazing.

Another feature for this software is that it has footnote capability. You can generate end notes, head notes, and footnotes. It will sequentially number the footnotes and if you add a footnote to a document between the other footnotes, it will renumber the remaining notes. What a Country!!

Well, this truly was a beginning and I enjoyed using the software. Now a couple of months ago, I went to a computer auction and bought a laptop, the IBM PC Convertible which might be able to turn it into a productive asset. I had envisioned being able to wrap the computer up in its canvas bag and take it where you might want to go.

There is only one problem with PC Convertible. It uses the new 3.5" diskettes and my computer only supported 5.25". So, if I wanted to swap disks between the machines, I needed another disk drive.

Fortunately, when we went to Dayton, K5JB found a drive made by Toshiba that came with mounting hardware and even faceplates for installing a 3.5" drive in a PC AT or clone equivalent. We discussed it and I looked at his. Since Hamcom in Dallas was coming up, I figured that I would be able to find one there. Well, almost. They are apparently a hot item and I had to look all over before I found the only one left at the entire hamfest. I brought it back and assembled it on Sunday night. On Monday evening, K5PL and N5HZR came over and I pulled the AT apart and we plugged it in.

The drive came with a multipage booklet with very comprehensive (I thought) instructions about assembly and installation. This was quite a revelation for a piece of computer equipment. For example, the Serial Interface adapter to the PC Convertible came in a box with some styro-foam and a single sheet of paper with a drawing only of how the adapter attached to the computer. Not much. Well, the booklet with the 3.5" drive seemed fairly explicit. But danger lurked ahead.

I had been using DOS 3.0 up to that point. It is not equipped to use the 3.5 inch drive unless I wanted to only limit it to 360K. The drive is capable of 730K of storage. The new 3.5 inch drive in the new IBM series will hold 1.4 Meg. So I ran out and got DOS 3.2. You also need a software driver installed in the config.sys file. This assigns the Driver.Sys file to the new drive d:. Well, this is the way it is suppose to work, but it wasn't consistent.

The drive simply was not reliable. Sometimes, it would format a disk at 730K, every other time, it would show a format failure because (it said) there was invalid media or the Boot track was unreadable. I would start the

format sequence over and it would format the same disk that had supposedly failed just as if nothing had happened.

Another quirk that it showed was that it would not permit the computer to write more than 400K into any one disk. It would show the disk full. But if you ran chkdsk, there would be storage left. This was inconsistent. Argh! The drive was incorrigible. These problems were discovered fairly early and the symptoms didn't change.

Well, it was time to trot out the big guns. I opened the little Booklet and got the number (I thought) for customer service. I dialed it. Busy. Well, at least it seems like I got company. I dialed it off and on at least 20 times or more during business hours the next two days. Still busy. Finally, I thought, like a computer person is suppose to think, maybe there is a back door. I dialed information for california and got the main plant number for Toshiba. Well, there are actually several divisions in Toshiba and I only got one office, but they were kind enough to refer me to division (another phone number) that made the disk drives. I called, they said that the customer service number in the booklet had been disconnected. I asked why there was no intercept and a referral to a new number. I dunno, they went on. Well, I finally got the new customer service number and dialed it. At least it rang, and rang, and rang, and on and on. Since Sprint charges for ringing, I tried to pick the time to call, like after 5:00 p.m. central time.

Well, the first week stretched into another week. I finally got ahold of the customer service representative. He was very nice, considering he said he fielded more than 200 phone calls a day from people such as myself. Yes, there did seem to be a problem in the manual. Yes, it seemed there were some incompatibilities with certain machines. But you might try these sequences and specify the drive by the use of the statement Drivparm, a quaint, but for the most part unreferenced DOS command. It did not work. Now, the frustration was beginning to show. If I had a cat or dog, I would have kicked it. In desperation, I called the main number for Toshiba again. I thought about joining a general complaint about

them selling milling equipment to the Russians with a specific complaint about this drive. I bet the Russians got better service than I did. I got the name and address of the president of Toshiba U.S.A. I wrote him. I complained about them changing the customer service number with no notice. Probably, they overloaded the circuits so badly with calls that the phone company made them do it. Still, people were finding them at the rate of over 200 calls a day for just the one guy I talked to and there were several people in his department.

Did I get the drive working? Well, yes, but it was not easy and just was about as complicated as it could be. The problem was the BIOS. Apparently, it was not compatible with my drive. The CSR suggested several things and Drive parameters. He said take everything out of the config.sys file and autoexec.bat file because frequently some of these programs would interact with the driver. Add them back one at a time to see if you could make them work. No good. This is when I finally enlisted the help of WA5JXX who had been in and out of town. With some help from K5PL and N5HZR, we effected a head transplant of the BIOS. Then I configured the machine for a 730K drive using the Version 2.03 Advanced IBM Diagnostics. In this form, you didn't need to add the software driver. Voila, the disk worked perfectly. I haven't seen a hiccup one.

Why did it not work? I dunno. Maybe somebody can explain it to me. I did not think that my machine was that old. After all, I got it in the middle of 1985. But, the problem was there. Joe K5JB got his drive to work on an ATT 6300. Mark N5HZR had bought one of the same drives and it plugged into his Compac and worked fine. Mine, no go, until the BIOS transplant.

What about Toshiba? Well, they have been having their problems with the American public. Quite frankly, it gave me some pleasure to watch Senators in Washington D.C. smash stereos



and TV's made by Toshiba on the Capitol steps. Their president in Japan resigned. I guess my letter really had an effect, Right? Well, no, not actually. But the president of Toshiba here in America did do the honorable thing. He called a sales manager and had him call me and apologize and they offered some more assistance and sent me another one of the devil drives for my trouble. The CSR had told me on the phone that they had shipped about a million of these drives and only had about six hardware failures. I thought that was not bad. Most of the problems required software patches. I guess we take compatibility between machines for granted, but that was definitely not true here.

Do I like the drive? Very much so. It is now 100% compatible between the AT and the PC Convertible. I can take the files home from the office and plug them into convertible and print away and change them, then take the files back to the office and print them on the laserjet. Why do I type this column on an old D style IBM Executive typewriter? Why don't I bang it out on the portable and print it at the office? Well, I do have my reasons, one of which is a great loyalty to this grand old typewriter. However, the main reason is that I usually don't have much time to type this before it is due at C and E pasteup. I also provide WA5ZNF with camera ready copy. I don't have a lot of time to fiddle with the copy at the office when it prints short or long on a page, so what I see is what I type (WISIWIT). Unfortunately, that means that you, gentle reader, must endure misspellings (oops) and uncorrected grammar. I guess I really need to get organized someday and get this down to a science like K5JB.

Micheal Salem N5MS

#### FATHER JOHN

I noted with especial sadness the death of Rev. John McGinty on April 23, 1987. He was 89. This was shortly before I went to Dayton and I had not been reading

the papers, so I missed the funeral. I first met Father John early in my amateur career. I had gotten my Novice license back in 1962, but had not gathered up enough equipment to get a station going after six months. A priest in my hometown said that he knew Father John and had talked to him about me and that Father John had a transmitter (homebrew) that he would let me have. He arranged for us to travel to Oklahoma City to see Father John and he went with us to visit an old friend. I was about 13. And after I left, he was like an old friend to me also. He carefully encouraged my interest and questions and unveiled a nifty homebrew 15 watt transmitter which was crystal controlled. The construction was careful and it looked especially neat with a 6DG6 single oscillator. The transmitter, unfortunately, did not work and I struggled with it for some time. In the meantime, I got another one and started making contacts. But before my Novice license had expired, I found out what was wrong with Father John's transmitter. The 5R4 rectifier would glow red hot and the transmitter put out no power and the meter indicators worked poorly. It didn't occur to me immediately that the source of the problem was a shorted power supply filter capacitor. That is why the rectifier tube was red hot. Well, I did figure it out and replaced it. The transmitter then worked like a champ. I plugged it in and rigged up a T R switch and pretty soon was working stations all over on the single 40 meter crystal that I had. My other transmitter ran the legal limit, 75 watts, but the homebrew transmitter was a bunch of fun.

I held onto that transmitter for about 10 years and eventually wound up giving it to another novice, I really don't remember who. I don't know where it is now, but I hope that some Novice is getting some use out of it. Unfortunately, in these days of high dollar transceivers with all the fancy bells and whistles, the old transmitter seemed like an anachronism.

I saw Father John only a couple of times after that. We met at some of the local hamfests and I saw him at a weather seminar. He was always bright and cheerful and keenly interested in radio, his hobby. His original station that I saw back in 1963 was a Collins KWM2. We sat there that afternoon and tuned up and down the

bands. What a kind person to take his Sunday afternoon and spent it with a kid and his parents. I especially appreciated his trust in me in giving me the transmitter he had so carefully constructed. We could use a lot more Father Johns in this world and he will be missed.

Micheal Salem N5MS

#### TYPEWRITER KUDOS

I mentioned my old IBM Model D Executive typewriter earlier. If the type seems a little clearer or you don't notice that the "z", "6" or "3" or other characters don't drop out anymore, well, that is because this grand old machine has had a heart transplant in the form of a replacement of the power roller, performed by none other than Jim Greenshields of Greenshields' Typewriter and Printing. I had complained at one of our regular Wednesday evening ice cream meetings that the old typewriter was getting a little tired. Jim offered to help, he said, as a public service, so that I would continue to use the old gal and not convert to that tiny type of many computer printers. He said that this machine had an eminently readable typeface. So, he whisked the machine off and about a week later, it came back operating in tip top shape.

This is about the only thing that I use the machine for. But it has performed yeoman service, for at least 15 years on just the previous overhaul. It was probably time that I got a little more oil in its gears. About the only problem that I ever had with this machine was finding ribbons, but about 10 years or so ago, I found 4 or 5 dozen at a garage sale for cheap and bought them. I only use a ribbon every three months or so typing these articles at home. I think that I still have a dozen or so and will probably be scouting for some more (cheap) in a year or so. I don't think that I will ever replace it, especially after learning to count the spaces with its proportional space type. I might get a proportional space cartridge for the laser jet,

though and see if it can match the type style. It is quite distinctive. I think that Jim likes it. Since he is a printer, I had him look at a book of laser cartridges to see what fonts he might recommend. He had a distinct preference for the TMS RMN type style (like this machine) and turned up his nose at the Helvetica.

The cartridges are kind of expensive, so if anybody out there has any for sale cheap and if it is something I can use, please let me know. Another solution is to use soft fonts. Roger WA5JXX has downloaded several that he has found on CompuServe and we played with those on the machine. The Laserjet Series II is an amazing machine. The resolution of 300 dots per inch is good enough for just about any normal wordprocessing or even typesetting. Most typesetters work with 2000 dots per inch and I saw a laser printer the other day advertised for the printshop market with a resolution of 600 dots per inch. I haven't bought any printshop programs yet, although I am looking around. I think that it would be especially neat to get something like that. The output from some of those has been spectacular. But, at least for now, I think that I will churn out my C & E stuff on the old IBM.

Micheal Salem N5MS

#### LAKE CANTON FUNFEST FLIGHT

It seemed that I could not open an amateur publication the last several months without seeing an announcement of the annual lake Canton "Field Day" Exercises. It even made the "C & E" three times. Well, since I am an Oklahoma Amateur Radio Operator, I thought that I would check it out again this year after failing to make it to Canton last year.

I think that one of the problems that the promoters have is that they should not call it an "exercise." That is not the way to get usually sedentary amateur radio operators out in the heat. There is a basic truth in advertising problem here anyway. I was

there at Lake Canton and I didn't see anyone working more strenuously than lifting a can of Pepsi. So for those of you who thought that the Lake Canton Field Day "Exercises" were just that, at ease and not to worry.

Our primary movers behind this extravaganza are Tim WA5LTM and Jim WD5HPC. One time before Tim got me up there in the airplane and we landed at the airstrip at the Lake even though it was overrun with weeds, but not too bad. This year, the weeds had won. I think that a landing, or even a low pass at 20 feet would have been doing the town of Canton a favor by mowing the airstrip. Too bad that somebody doesn't get out there with a grader about once a year and peel the grass and weeds off the runway.

Plan B was to fly to Fairview. They have a very nice strip and airport. The day was kind of hot, but the wind was out of the south about 20 miles per hour. It only took about 45 minutes to get there, a couple of minutes to scout the airport and then about 5 or 6 minutes to fly to Fairview. Tim and Hershell KA5KWM drove over and picked up Chas and myself.

Well, as masters of planning that we are, we managed to get to Canton just in time for the early dinner. Jackie, Herh's wife, always seems to have something ready to eat when I arrive. So Chas and I walked around and visited, then we all sat down for dinner. I know that I ate too much, but what the hey, it was a long flight back against the hard wind, right? I had to be back in Norman by 7 p.m. or so, but we were running a little late and I think that the battery in the airplane is finally giving up the ghost. It will hold a charge for a week or so, but then eventually runs down and won't turn the engine over.

One thing that I can say about the Lake Canton Field Day exercises, the prize committee does an outstanding job. Nobody goes away hungry.

Micheal Salem N5MS

#### HAM HOLIDAY HIJINKS (Tower Division)

I understand that they want to expand the programs at Ham Holiday to include a couple on Friday nite. I was asked to talk about antenna support structures (towers, remember?), city ordinances and restrictive covenants. It is a topic that I have used several times and it is especially critical now that some cities are trying to exercise a lot of power over structures within their limits.

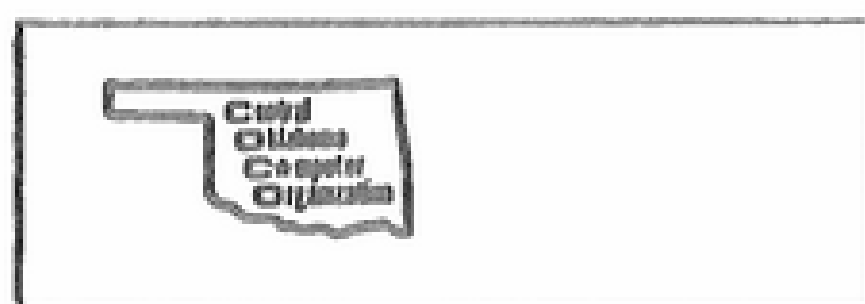
Several things have happened in the last several years. First, the FCC issued PRB-1, the order of limited preemption of city control over radio towers. It has been upheld, at least for now, in the Thernes case in Kentucky. Second, cities have also become more sophisticated in their ordinance drafting. They have had to. If we want to keep them from attempting to legislate towers out of business, we must also make more sophisticated arguments in favor of towers.

Third, the first place we should start is with exercising a little diplomacy. The main problem in most of these cases is not the City, but the neighbors. Even if the antenna violates a height code restriction, it may generally not be enforced unless a neighbor complains. I read an article in the paper that some cities will not even enforce certain passive violations such as towers, unless a neighbor within 300 feet complains. Now, that is not a very big area in which to exercise diplomacy. So after a fashion, good neighbors make tall towers.

There is some other new information to discuss. For example, the EIA has adopted a new revision "D" for the Structural standards for Towers. It is designated EIA-222 "Structural Standards for Steel Antenna Tower and Antenna Support Structures." It was issued Nov 1986 and became effective June 1, 1987. We all need to become familiar with this. It is formally designated ANSI EIA-RS-222-D. Anyway, there are several other things to talk about, soooo, see you there.

Micheal Salem N5MS





Meetings held at Red Cross Bld.  
NW 10th & Hudson

2nd Saturday of each month  
9:00 AM -- Come early  
Club dues: \$10 per year

President Paul Pape called the meeting to order at 9:05 AM on July 11, 1987. 84 members and guests attended.

#### Old Business

1. No one brought a disk of public domain software to add to the library. The number of programs in the library stands at zero.

2a. President Paul Pape reported on the progress (?) of the CoCoFest Committee. At the moment of the report there were no definite, confirmed, guaranteed demonstrations lined up for CoCoFest. Paul asked for volunteers and got four nibbles.

b. Following a justifiably scathing lecture on the apathy which pervades the club, President Pape issued an ultimatum: either volunteer to serve on a committee or vote to postpone CoCoFest.

c. One member mentioned that August 8 conflicted with two other computer affairs in Texas: one in Fort Worth, the other in Austin. These events were attracting some of the dealers that we had hoped would attend CoCoFest.

d. Rob Runyon moved to call off CoCoFest. Before anyone could second his motion, however, more discussion erupted. Following that, Tony Wangler resurrected the motion to call off CoCoFest, and a number of people seconded it. This motion carried almost as lopsidedly as did the motion in February to have CoCoFest '87 in the first place.

e. In case it's not perfectly clear, let me repeat it very simply: COCOFEST '87 WILL NOT TAKE PLACE! WE HAVE CANCELLED COCOFEST BECAUSE OF A LACK OF INTEREST. Instead, on August 8 we will have a regular meeting at the Red Cross Building.

3. Because we won't be having a CoCoFest this year and because we have obligated

the club to man a booth at Ham Holiday, we decided to support that event in true COCO style. Bob Pace asked for volunteers to work the table and, as you may have expected, no one was dying to volunteer. If you'd like to participate in what is sure to be loads of fun, contact Bob at 376-3569.

4. I will call Joe Harding and have 1000 COCO business cards printed up to distribute at Ham Holiday.

5. The Red Cross Building won't be available to us much longer, as you all know. We discussed other locations, such as Lee Lash's church at 36th and North Walker (the proposed site of CoCoFest), Oklahoma City Community College, and Will Rogers Park (the building where the IBM PC Users Group formerly met). I volunteered to serve on the committee. When Paul Pape actually heard someone volunteer for something, it was such a shock that he collapsed on the floor. Luckily, the Red Cross was on hand to resuscitate him. Other members of the committee are Bob Pace, Dale Goad, and Sam Murr. We WILL have alternatives to present to the club next month. If anyone has any recommendations for potential sites, please call Martin Schiel, 670-6891.

6. The Enid chapter is publishing a newsletter for \$7.50 per year. If you're interested in subscribing, contact David Graham, 724 E. Maple, Enid, OK, 73701.

#### New Business

1. Rob Runyon announced that he would soon have the used disks from 1983, thereby completing his set. If anyone has missed ANY back issues, contact Rob. There's a rumor that he will offer volume discounts.

2. Through the end of August I am running a special on the used disks that I purvey. The complete set of 60 diskettes is selling for \$50. Alternatively, you may buy six packs for the price of five. Also, I'm now carrying high density (1.2 meg) floppy diskettes priced at 8 for \$10. The DS/DD are still 25 for \$10. End of advertisement.

3. The attendees voted to contribute some money to member Wally Walker, who is undergoing treatment for a

brain disorder.

4. Chuck West announced that MicroLink, a multi-user BBS, will be back on line very shortly. For \$10 per month a user can have unlimited access to the bulletin board.

5. Dorothy Roberts is looking for some volunteers to present some topics to her monthly beginner's SIG. She's especially looking for people who can discuss PEEKs and POKEs, graphics, etc.

6. Tom Mangham has listed CoCoNet in the COMPUTER SHOPPER. Look for the listing in the August issue. Thank you, Tom.

7. Ronn Folk thought it might be wise to consider buying a new computer for CoCoNet. Ronn recommended an IBM PC clone to replace the Southwest Tech machine. Much discussion ensued. Because the present machine has performed so reliably over the last 5 years, the members decided to take no action at this time.

8. Through some shrewd bargaining, Tom Mangham has obtained a number of educational programs in the Dorsett line. Subjects include reading comprehension (grades 3-5), reading development (K-1), geometry (6-12), English as a second language, principles of accounting, and effective writing. Tom also has VIP Calc and the manual. He plans to set up a library and allow members to check out the software to try before they buy. You can arrange to pick up the programs from his house or at a meeting. Unless demand dictates otherwise, you can keep the programs for one month. Call him at 677-5291 for more information.

9. I recently received a letter from a CoCo enthusiast who's interested in corresponding with members of COCO, Inc. If anyone would like to write him, here are his name and address:

William C. Garretson  
828 Gregory Avenue  
Bedford, TX 76022

#### Hardware Problems

1. Dale Goad obtained a disk drive pulled from an IBM machine. He wanted to hook it up to his CoCo. Bob Pace offered to assist him.

2. Bob Pace has the J&M technical bulletins that

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# HAM HOLIDAY

For those of you who will be attending Oklahoma Ham Holiday 1987, here is some information regarding programs to be held this year in conjunction with HH87.

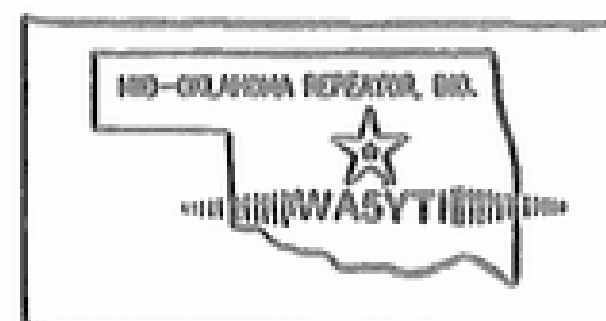
For the first time in a number of years, programs at Ham Holiday will begin on Friday night. Two very informative sessions will be held, both of these by professionals in their respective fields. At 7pm, Rick Tasetano, N5KLM, staff meteorologist for KTOK radio in Oklahoma City, will discuss, with the help of slides and all, something that is near, if not dear, to the hearts and hides of we amateurs in Oklahoma...Oklahoma Weather. Pickup your registrations and be on time for this one. At 8pm, Michael Salem, N5MS, will talk about some of the legal problems that amateurs in urban, suburban, and, increasingly, non-metropolitan areas of Oklahoma are having with restrictive antenna ordinances. Michael has been on panel discussions several times at Dayton regarding this topic and we at HH87 are proud to have him on our program. And the most important Friday meeting is at 9pm where you, I, and all those guys and ladies who haven't seen each other since HH86 can get together and jaw until the management of Lincoln Plaza runs us off.

Saturday includes a large number of societal and organization meetings that are being held in conjunction with Ham Holiday this year. Mars, Navy Mars, Oklahoma Repeater Society Incorporated, ARES/RACES, and Oklahoma Packet Radio Association all have meetings scheduled for Saturday. Three technical type meetings are scheduled for Saturday beginning with a "don't miss" presentation by Dr. David Rust, N5KCW, from the National Severe Storms Laboratory. Dave is one of the leading (if not number one) research scientists regarding lightning in the world. Dave has been in charge of a mobile research laboratory this year that has packet radio on board and this mobile lab will be on display in the parking lot Saturday and possibly Sunday, so stop by and tour this "mobile packet" station and be sure to cruise the Flea Market early and get a seat for this one. One of the programs we

are really excited about is our AMSAT presentation this year in conjunction with the live demos that will be held in the public access area adjacent to the lobby. If the satellite cooperates, you will be able to hear and, hopefully, talk to Europe on AO-10 with Al Brinkerhoff, WB5PMR. Al and some helpers will be coming up from the Dallas area for HH87 to help with the live demo and then to present what will be happening in the future with AMSAT. Then at 4pm, Oklahoma's Packet guru, Joe Buswell, K5JB will lead us off into the future of packet radio. As you can see, these are advanced discussions but don't shy away from them, because you can get the "how do I set up this station" information at the live demos that will be held in the Blue Room just off the lobby. We'll have HF, VHF, packet, satellite, ATV, and WEFAX plus other demos and lots and lots of hands-on in this public area. So invite your non-ham friends to see what amateur radio is really like!

On the non-technical side, the ladies have planned some exciting things this year that include home safety seminars by the Oklahoma City Fire Department and personal safety by Citizens Against Crime in the morning. The afternoon includes a fashion show by Satin and Lace from Sooner Fashion Mall (the wife said "no, you can't go"), a manicure session by Amera and cosmetics by Mark Kay. For all of us and the kids the "Zoomobile" from the Oklahoma City Zoo will be in the parking lot at 4pm. On Sunday, the non-technical programs consist of a CPR course offered by the Oklahoma County Red Cross (there is a \$15 fee for materials and you need to sign up at the registration desk for this one...anyone can come), a continuation of the manicure and make-up sessions if there is enough interest, and the Baptist Hams will be sponsoring a worship service. On the more technical side, Tom Comstock, N5TC, will be here to talk about the ARRL Blue Ribbon Committee recommendations regarding the National Traffic System, as well as other topics, and West Gulf Division director, Jim Haynie, WB5JBP, will conduct the ARRL Forum.

For those of you interested in upgrading your license, HH87 is the perfect place. VE exams will be held on Saturday morning and afternoon, as well as, Sunday morning. All you need is \$4.35 for your exam fee and a good photo copy of your license (it wouldn't hurt



Finding something to write about when there is not much going on can, at times, be difficult.

This month's meeting, AUGUST, will NOT be held at the college. The school is closed down for that month so we plan to meet at:

BRICKS restaurant, 3100  
N Portland - 8:00 pm

Stay tuned to 07/67 for an announcement.

Have you listened to the 34/94 machine lately? You say you've erased it from your radio's memory because of the inter-mod! Well, have another listen. We've added a remote receiver to the repeater and pretty well eliminated that problem. Thanks for the work and effort, guys.

One other tid-bit of information, don't forget the Oklahoma Red Bud net, 8:30 pm Sundays on or about 28410 MHz. It is just a general check-in and rag chew net designed to promote the use of 10 meter phone. When the band is open there are some more interesting check-ins.

Well, that's it for now, next month promises to be more interesting. C. U. at Ham Holiday.

73 de KA5MUG, Tim

to study some, either!). Sessions are at 9am and 1pm Saturday and 10am Sunday.

By all means, be sure and bring a copy of your license to operate from the hands-on stations in the demo area. Some mode you haven't worked is sure to be there.

Well, that's the program for this year. If there is something that you'd like to see at HH88 that wasn't on the program this year, contact one of the Program Committee members and we'll see what we can do.

My personal thanks to John Tomason-WB5SYT, Andrea Wolfe-WU5W, and Jean Bateman-N5HZV who have done a lot of hard work since late March. Thanks, guys.

Hope to see you at HH87.  
de WB5ULK .-..

# kay

## PUBLIC SERVICE EVENTS-

The June 6th Tri-Athlon went very well! There were plenty of hams to cover all the events. A great big thank you to all those who helped out.

The Ponca City Grand Prix Races went well too. I think we got hooked into doing the dirty work but someone must do it. Next year we'll make some different arrangements or we won't help. A big THANKS to those who helped out. I know it was a lot of work.

The Jaycee Raft Race was in July this year right after the Grand Prix and there wasn't as much interest in helping out, but we had a few show up and do some spotting. The river was running really fast, so the race didn't last long. Thanks to those who helped out. I guess we got over extended with all the public service events this year. The next one is in September and it's another 10K run out at the lake. See ya there!

## A NOTE FROM THE REPEATER COMMITTEE

Thought you might like to know what is going on with the .37/.97 machine. We have had an on-going problem lately with the machine locking on transmit and passing no audio. Also, some members have experienced trouble dialing on the autopatch; this is an audio problem. When the power amp failed on 7/15 an executive decision was made to bring the repeater in for repairs.

At the time of this writing, I am still effecting repairs and re-wiring the machine. The new autopatch unit will include a conference bridge so that the party on the telephone can hear the courtesy beep during patches. Also, the autopatch and DTMF control decoder have been converted to 12 volts DC and tied into the battery backup system. This will allow patches during power outages. A tone alert was added to indicate when the batteries are being used. The batteries are good for about two hours at full power and continuous key-up of the repeater.

Upon completion and tune up of all audio and RF sections, we will re-install the machine. This should be by 7/20. At a future date pictures will be taken and a documentary of our machine will be printed for the

information of those who have not seen what we have done in the last couple of years in updating our system. DE KA5SJK.

A big thanks should go to Steve KA5SJK for all his hard work rebuilding the repeater, he spent almost four full days working on it and I know he would rather be out driving his new (to him) Porsche. Tell him thanks when ya hear him on.

Well that's about it for this month. See ya at Ham Holiday!!!! 73, KD5FX.

## AN EDITORIAL COMMENT-

For several years now, I have been saddened by the attitudes and actions displayed by members of our amateur community in Ponca City. Obviously, we are divided into two groups. Besides having different club names, we also have different nick names as given us by the 'other' club. We are the 'non-progressive club' and consequently, they are the progressive, as we were named in their CORA column a couple of years ago.

Part of this misunderstanding lies in their ignorance of another groups goals, as are most communication problems. The 'other' club wants to get into packet, ATV, RTTY, remote bases on 2 meter repeaters (including our repeater at one point without club permission) and to experiment with 2 meter spread spectrum transmission (2 MHz all at once has been accomplished along with some neighbor's TVs and stereo's).

All that KCARC wants is a reliable 2 meter repeater with autopatch to cover the Kay County area effectively with a 5 watt radio (no 1400 foot towers for us) and to be free from weird, annoying noises on the machine while many of us monitor. Our machine is dedicated to voice communications of a personal, net, or emergency nature; for help in weather spotting, or public assistance in a net operation. It has been this way for 30 years, and the greater majority of KCARC members support this belief.

We DO NOT discourage our members from other activities as many are DX hounds, packeteers, RTTYers, and into other activities. Our club provides many public services, including weather spotting, nets for running events and other civic club activities, and the construction of an Emergency communications trailer. Our club also has both of the Civil Defense Emergency Coordinators for Ponca City as members and organizer in case we are needed in the event of a disaster.

We do not force our views or activities on anyone. We just enjoy our 'mellow' style of camaraderie. Now, the potential for action, possibly escalated to unmentionable limits, is rearing its ugly head again. A 'threat' has been vocalized to move the 'other' club's spread spectrum repeater to within 1/2 mile of our long established repeater site. Interference problems from their 250 watt amplifier have locked up our GE Mastr II commercial repeater with their output on several occasions in the past, and the distance between the sites is several miles. I hope this move does not come to fruition. I personally have offered assistance and commercial grade equipment to the progressives to help with their reliability and audio problems, but with a turn down each time.

It has been stated by moving to a duplexer based system that their audio problems will cease. The 19 years with great audio. The secret is in level setting. We also use UHF links every day in my job for radio control on mountain tops and to sites where lines are not available or are too costly. Poor audio is either equipment or technician based.

There is room in the amateur world for every person or club to pursue their goals without forcing anything on anyone. I hope this move is thought out CAREFULLY. We will not tolerate any interference with our repeater. DE KA5SJK

## BICENTENNIAL AMATEUR RADIO CLUB

*"To Promote Radio Communications"*

## Minutes of July 76ers Meeting

The Reorganization meeting was a moderate success. Attending were Jerry Sproul N5AUH, A.B. Clark and Wanda Clark, Dennis Musser, George Maschino, Jim Buswell, Joe Ramage and XYL. It was decided that it was a good idea to try keep the club alive and all present paid up their dues. We will continue to meet at the Kettle at I40 & Mustang Rd at least till the October meeting when we elect new club officials. Jerry Sproul will contact Don Duck and get the Bank book and take over the treasurer job if Don is no longer interested. Next meeting will be August 11. We want to encourage more use of the Repeater, not only for members but anyone is welcome to use it.

Jerry Sproul Secretary

Down To Earth Facts About Ground  
by Jim WA9AB

True electrical ground is a common reference point in a circuit that is at the same potential as the earth. Not all earth provides a good ground, because the electrical conductivity varies widely depending upon soil conditions. The best true ground is the ocean or salt marsh. Next best is the earth itself. The poorest ground is dry, sandy or rocky soil of low mineral content (does that sound like Colorado Springs?).

If ground resistance is high, considerable noise voltage may develop between the earth ground and the equipment that is attached to it. The ground resistance is a sum of the resistance of the ground lead and ground rod driven into the soil, and the resistance of the earth surrounding the rod. The rod-to-earth resistance is usually negligible compared to the resistance of the earth around the soil. Most of the effective resistance is within a radius of six to ten feet of the rod.

Moisture content and soil temperature also affect ground resistance. Increasing soil moisture from 10% to 35% can lower soil resistance from 350,000 ohms/cubic centimeter to 5000 ohms/ccm. A temperature change from 70 degrees F to 0 degree F can increase soil resistance from 80 to 200 times. So frozen soil does not provide a good ground return. That is why the ground rod needs to be long enough to get below the frost line.

A good ground rod should be 8 to 10 feet long. The diameter of the rod is not terribly important. A one inch diameter rod has only 7% less resistance than a 1/2 inch diameter rod. Half inch copper water pipe in 10 foot lengths usually costs only a few dollars and makes a very good ground rod. It is easily put down by connecting a garden hose and letting the water pressure do the hard work for you. You can not drive copper pipe with sledge hammer. Electrical connection can be made with a stainless steel automobile hose clamp or you can solder directly to the pipe. The braided shield of old RG8 coax is a good conductor from the rig to the ground rod.

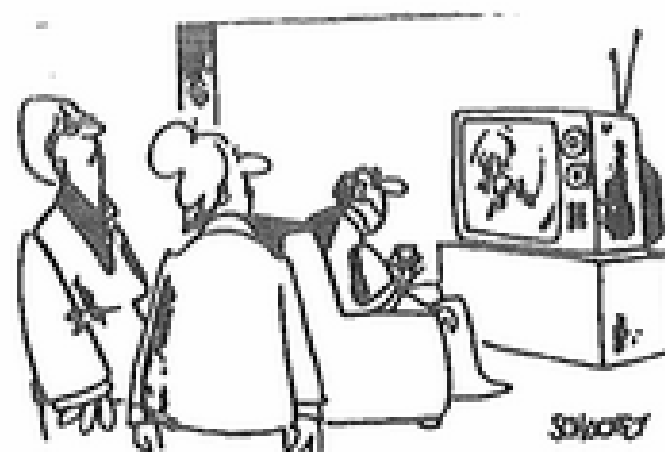
A ground resistance greater than 34.5 ohms is considered high. Electrical codes in many cities specify a resistance of less than 25 ohms. You can lower your ground resistance by driving the rod deeper into the earth, but that is mechanically difficult for the average ham. An easier solution is to put down two additional ground rods about six feet from the original. This can cut the ground resistance to 1/3 of its original value.

Theoretically your rig should be located right at the ground rod. The ground lead from the rig to the rod should be as short as possible. A sixteen foot ground lead is about 1/4 wavelength on 20 meters. It will act like a high impedance and the equipment for RF purposes is effectively removed from ground, even though it might still function as an electrical d.c. ground.

These and many other facts can be gleaned from the "Interference Handbook" by William R. Nelson, WA6FQB. Hope the above info will make you a little better rounded and grounded. HI!



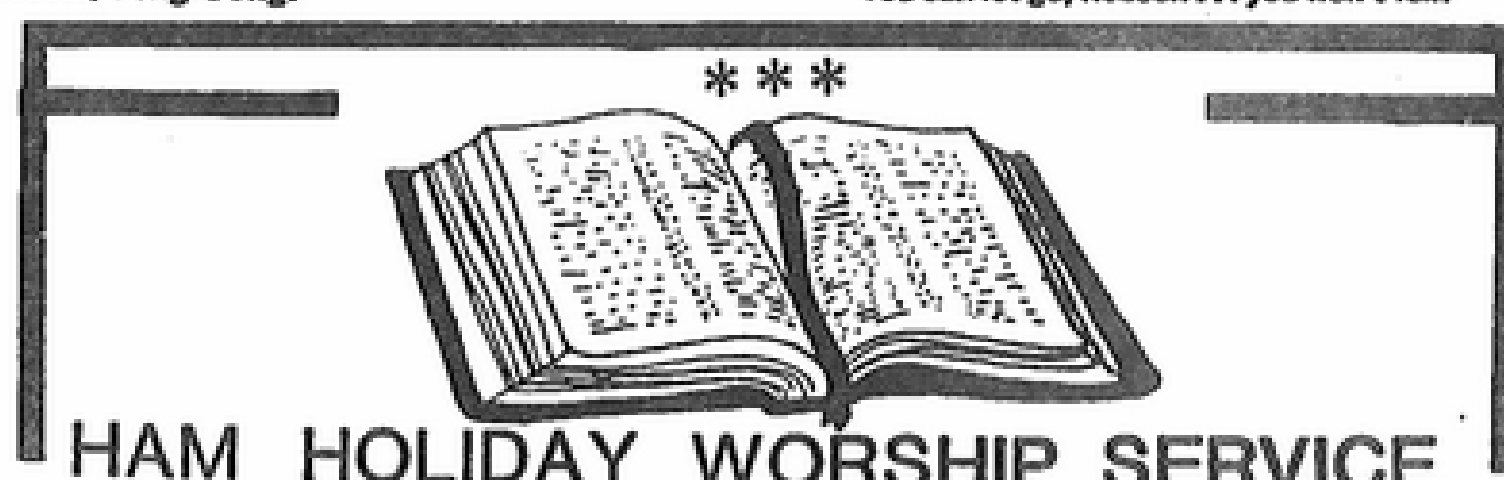
"I didn't know you'd gone mobile, Joe. What'd you do with the baby?"



"He's a man for all seasons: baseball, football, hockey, basketball, tennis, golf, soccer, Ping-Pong."



"You can let go, Hobson... you won't fall!"



## HAM HOLIDAY WORSHIP SERVICE

August 2, 1987

LINCOLN PLAZA HOTEL

### Everyone Is Invited

If you are registered to attend the Ham Holiday, why not plan NOW to join Hams of all denominations in our Ham Holiday Worship Service. There will be a challenging message, inspirational music and great fellowship with the other hams. YOU ARE WELCOME

**W5ZUS** WILL BRING OUR MESSAGE

FOR MORE INFORMATION ABOUT THE HAM HOLIDAY, AUGUST 1-2, AND THE WORSHIP SERVICE, CHECK INTO THE NET 3900 ± AT 2:00 p.m. EACH SUNDAY - - - ALSO, PLEASE INVITE OTHER HAMS TO CHECK IN AT THAT TIME. AFTER FORMAL CHECK-IN AND PASSING OF ANY FORMAL TRAFFIC, THE NET IS DECLARED INFORMAL AND WE ENJOY A NICE TIME OF RAG CHEWING AND FELLOWSHIP.



Sponsored by BAPTIST GENERAL CONVENTION OF OKLAHOMA  
BROTHERHOOD DEPARTMENT



### Minutes of July Meeting

There wasn't one! Because of the proximity of the Ham Holiday, the July meeting was canceled. The August meeting will be a watermelon feed, held in conjunction with the Aeronautical Center ARC, at Bethany's Lyon Park, at N.W. 36th and Glade. (Between Council and Rockwell) It will be August 21st and should start about dinnertime.

Come on out and enjoy the watermelon!  
Joe, K5JB, Sec'y

### STA Granted on HF Packet

Following is ARRL Bulletin which announces the granting of a special temporary authority (STA) on unattended packet radio operation on high frequency. Prior to this grant, there has been no way for packet radio bulletin boards to legally do their thing unattended.

HR ARRL BULLETIN NR 60 FROM ARRL HEADQUARTERS  
NEWINGTON CT JULY 13, 1987  
TO ALL RADIO AMATEURS BT

FCC announced at the ARRL National Convention that they had granted the ARRL request to permit for a six month period approximately 50 amateur packet stations around the country to conduct unattended automatic operation while transmitting third party traffic on frequencies below 50 MHz.

The amateur stations included under this special temporary authority will be able to participate as relay stations in a long haul HF net called SKIPNET. This net will operate on a single frequency in the 80, 40, 30 and 20 meter bands and stations will relay traffic via packet throughout the country. If these operations are successful, ARRL may decide to request a permanent rules change. AR

### ARRL National Convention Packeting

The following short report on packet activity at the ARRL National convention at Atlanta was posted on the Comuserve's Hamnet by Phil Karn, KA9Q (One of the TCP/IP movers and shakers:

Last night I returned from the National ARRL Convention in Atlanta. There was a lot to keep the packeteer interested. Dale Heatherington,

WA4DSY, presented his 56 kilobit modem to the packet forum, and the local packet radio group demonstrated several operating units down on the exhibit floor. These things really work! The biggest problem now is in getting digital devices to generate and sink data as fast as the modems transfer it.

Two special units were also built to operate on 220 Mhz at 28 kbps. Dale added Motorola CVSD codecs to make pair of complete digital voice radios. If it didn't say "digital modem" on the front of the unit you wouldn't be aware your voice is being digitized. You even get a "squench tail" caused by random data from the descrambler being fed to the codec between loss of signal and the dropping of carrier detect. The next step, of course, is true packetized voice running atop IP...

Except for digital voice, all testing has used my TCP/IP package and specially modified K3MC KISS TNC-2s. Nothing else (i.e., TNCs with stock AX.25 or NET/ROM code) have been capable of driving the modems fast enough. I will be working on TCP/IP drivers for some new 8530 add-on cards for the PC so we can eliminate the TNCs altogether.

I have received two sets of blank beta test boards for the modem. I'll report on them here once I get them built and operating. I consider this modem to be the most exciting development in amateur packet radio to date. With them a complete set of computer-to-computer networking protocols like TCP/IP can finally begin to show its power. I believe the combination is now starting the "second packet radio revolution".

Doug Drye, KD4NC, is coordinating the modem beta test. He will announce general availability at a later date; please don't pester him with questions until then.

73, Phil Karn, KA9Q

### WABDED Code for TNC2 and PK87

Ron Raikes, WABDED, is at it again. He has released the code to make the TAPR TNC2 design and the AEA PK87 design TNCs act like the original TNC1s running his code. "Why would anyone want to do that?", you might ask. Heck, I can only guess. It was an improvement over the original TNC1 code, permitting multiconnect, and such, but it doesn't have nearly as many nifty features as the later versions of TNC2 code. AEA's PK87 even has more nifty features. I can only think of two possible reasons why one might want to put the DED code in one of these two. 1. To make it operate with the same com-

mands as a TNC1 running DED code, and 2. to take advantage of the "Host" mode.

If you happen to be a programmer who wants to control the TNC with a computer, the host mode makes it a whole lot easier. It has more structured and predictable environment that saves a lot of code necessary for the computer to figure out what the TNC is doing. If anybody is interested they can catch me off line and I can get the code to them.

It takes a 27256 to hold the stuff and I don't have an easy way to burn the things but I can get the code to you on a floppy disk and let you burn the EPROM yourself. If there is sufficient interest I can put it on Monte, WB5RZX's mailbox so you can download it with a binary capture program like YAPP or PACKCOM. I kind of doubt there will be that kind of interest in it though, sigh!  
Joe, K5JB

### Plans for Ham Holiday 87

I am looking forward to this year's edition of Ham Holiday. As usual, I am afraid there will be too many things going on that will cut into my flea market time, but thankfully, the flea market will be for two days this year, hallelujah!

It looks like I am on the hook for another packet program at Ham Holiday this year. This time I am accepting a unilateral challenge to discuss "What's Next?" in packet radio. I don't have a crystal ball but I figured that if I was fairly up to date with what was going around me I might make some guesses of what to expect. To prepare for the event I started some research into what is going on in the various hotbeds of activity that might have an effect on "What's Next?"

First thing a speaker (or author) must do is establish who the audience is. I sometimes do a real poor job of that. I usually assume that the people in the audience are just like me, with my prejudices and favorites. Ahem, now that the excuses are out of the way, let's examine the subject.

To the guys or gals who are equipped, or are thinking of becoming equipped, to play packet radio, I suspect there are a lot of different perspectives of what it is all about. Most of the operating I observe centers around the live QSO. Many operators make a connection, ask, "Hey Joe! You home?" They wait a few minutes, then they send "Guess not. C.U.L.", and then disconnect. I come wandering along, read that, and try my best to imag-

line what the caller had on his or her mind. I usually try to return the message and say something like "Hi! Sorry I missed ya! Should be home later...", or something like that.

Let's face it. Some people just don't like to talk to machines. Other callers have learned to take advantage of packet's strengths. When they really have something to say, they leave messages. Dave, KD5FX, in Ponca City, sends the Kay County ARC C&E material to me by packet radio. He begins the exchange with, "Hey Joe, you around?" Then he sends some bells "Ding, Ding, Ding!" Then he says, "Well, here goes..." He sends the material, it comes through fine, and he closes with something like, "I hope you got that. Send me a message if you did." Of course, I did, and I do.

I sometimes forget it but there are some who perceive that packet radio was invented so computers could talk to each other and they resent the interference caused by people on keyboards. Their arguments go something like: "Computer data transmission needs packet radio to function properly. People don't need to use packet radio to communicate, they can ragchew on phone. So, why shouldn't the computer bulletin boards have priority over keyboard contacts?" I happen to be one who resents a machine monopolizing the frequency and interfering with me because I obviously have a different perception of what packet radio is for.

I think I have a compromise perception of packet radio. I think packet radio is a mode that can be used for all kinds of things and that the biggest challenge we have is to develop technical methods to allow computerized data transmission, keyboarding, and even voice, to coexist on the limited amount of spectrum God gave us.

One thing I surely ought to do is a brief review of where we are before we talk about where we are going. We might want to quickly cover some of the strengths and weaknesses of packet radio, for example:

Packet radio strengths include, error free copy, persistence in getting a message through, opening of new message handling channels, and enabling us to get some good out of these stupid computers

Packet radio has weaknesses of, the operator having to type everything, taking a lot longer than talking, and being harder to express emotions. A new word, "emoticons" has

been coined for icons that display emotions, e.g. (grin) or :-), or (sigh) or sadness :-( or sly wink ;-).

We might want to hit on some of the special interests people have in packet radio, for example, ragchewing, experimenting, traffic handling (including public service), DXing, and competing

Then we ought to be able to get into some of the technical advances we expect to see, such as, digital radios, better radio modems, better error correction and detection methods on VHF and HF, methods to compensate for multipath distortion, adaptive networks, digital voice radios, easier satellite access.

We are in the infancy of packet radio. Remember that the early packet radio designers elected to connect their radio modems to voice FM rigs to enable more people to easily get started in digital radio. If performance had been the primary goal, they would have started, at least, with direct frequency or phase modulation (F2) instead of modulating a modulation (F3). They would have also started with poly-phase modulation to cram more information into the available bandwidth.

One of the things I will surely want to mention is the use of satellites to move information quickly and accurately. The first uses of the amateur radio satellites was restricted to a very few who had the specialized equipment and experience to play with data transmission and explore the possibilities without risking a "kill" on the bird. Things are starting to pop in that area with the recent addition of mailbox features to the Fuji Oscar 12. Let's eavesdrop on some of the first packet mailbox activity on that little fella. The following note was lifted from Compuserve's Hamnet shortly after the mailbox became operational.

=: 57993 S9/Packet Radio  
22-Jun-87 10:53:45  
Sb: #57953-F0-12 BBS TEST 0050UTC  
Fm: Barry McLarnon VE3JF 71470,3651  
To: Tak Okamoto JA2PKI/N6MBM

The F0-12/JAS-1 BBS did indeed spring to life on June 21. First North American access to the BBS occurred around 1800 UTC, with WB5IPM entering the first NA message origination, closely followed by VE3JF (what can I say? He had visibility first!). The fact that the BBS software is RAM-based was apparent in very fast response times to commands. It also supports several simultaneous connects; it was not clear to me what the maximum number

was. On one occasion I connected and disconnected on all 4 uplink channels in rapid succession while there was at least one other user logged on, so it appears that it can support more than one connect per uplink channel. The initial version of the software supports only 50 messages, after which it wraps around to #1 again, and the earlier messages are overwritten and disappear. This had already occurred by the last pass of the day here, since everyone was anxious to say hello to everyone else! This limitation (and a few others) would have to be overcome before the BBS could be used for any serious message forwarding. Here's what you see when you connect to the BBS:

(ed note: had to wrap the lines around to get this to fit in our columns. "JAS)" is the prompt that the satellite returns.)

c 8jljas  
\*\*\* CONNECTED to 8J1JAS (21-06-87  
18:03:47)  
F0-12/JAS-1 Mailbox ver. 1.0  
Use H command for Help  
JAS)h  
++ Available commands ++

F : List latest 10 file headers  
F\* : List all file headers  
H : Show this message  
K(n) : Kill a file numbered (n)  
R(n) : Read a file numbered (n)  
W : Write a file  
JAS)

Here the headers for the first 50 F0-12 BBS messages:

NO.	DATE	FROM	TO	SUBJECT
050	06/21	JM1MCF	JA4BLC	EME work
048	06/21	ZS6IT	ALL	
				Greetings and congratulations
047	06/21	DB2OS	KA9LNV	hello
046	06/21	ON6UG	ALL	symposium
045	06/21	VE3JF	JH1VWP	
				Greetings from Ottawa
044	06/21	KA9LNV	JA2PKI	THANKS
043	06/21	KA9LNV	G3RUH	HELLO
042	06/21	KA9LNV	WA5ZIB	HELLO, ANDY
041	06/21	VE3JF	KA9LNV	Hiya Ed
040	06/21	KA9LNV	WB5IPM	HI,FRANK
039	06/21	KA9LNV	ALL	HELLO
037	06/21	VE3JF	JA2PKI	Hello again
036	06/21	VE3JF	ALL	Hello World!
035	06/21	VE3JF	ALL	Test message
034	06/21	WB5IPM		H
033	06/21	ZS6IT	ALL	greetings
032	06/21	IOJX	ALL	ANTENNA POINTING
031	06/21	ON6UG	ALL	HELLO
030	06/21	DB2OS	DL1CF	Gruesse
029	06/21	ON6UG	R	HELLO
028	06/21	DB2OS	ALL	OSCAR-10 Schedule
027	06/21	DB2OS	JA2PKI	Greetings



026 06/21 DL1CF DB20S VIEL 73'  
 025 06/21 IOJX ALL ANTENNA  
 024 06/21 HB9WHM JARL Thanks  
 023 06/21 VE3JF JA2PKI HI  
 020 06/21 VE3JF ALL Greetings  
 018 06/21 WB5IPM JARL CONGRAT-  
 017 06/21 ON6UG G3RUH HELLO  
 015 06/21 DB20S VK5AGR test  
 014 06/21 ON6UG G3RUH HELLO  
 013 06/21 ON6UG W ALL  
 012 06/21 ON6UG ALL Welcome  
 011 06/21 G3RUH VK5AGR Your  
 - UOSAT DCE Messages  
 010 06/21 JA2PKI W  
 009 06/21 JA3XJK ALL fine  
 008 06/21 JA4BLC JM1MCF H  
 007 06/21 JA2PKI HELLO  
 004 06/21 JJ1ZUT ALL Mode-JD  
 003 06/21 JJ1ZUT ALL From  
 002 06/21 JJ1ZUT ALL Mailbox  
 001 06/21 JJ1ZUT ALL Usage  
 001 06/21 JJ1ZUT ALL \*\*\*\* FO-  
 12/JAS-1 Mailbox System \*\*\*\*

JAS)r 3  
 NO. DATE FROM TO SUBJECT  
 003 06/21 JJ1ZUT ALL From JARL  
 Hello friends,  
 Here, we partake in joys with you  
 with you of the opening mailbox of  
 FO-12 that has been longed for. I  
 hope you will enjoy packet radio via  
 amateur satellite Fuji.

Greeting JA1AN, S. Hara, President;  
 JARL.

And what kind of equipment is it  
 taking to do this? The following  
 notes from Compuserve's Hamnet tell  
 the story:

#: 58369 S9/Packet Radio  
 05-Jul-87 08:00:52  
 Sb: #58281-#G3RUH Modem Problems  
 Fm: FRANK H PERKINS WB5IPM 76610,170  
 To: Barry McLarnon VE3JF 71470,3651

Hello Barry using an ARR GASFET  
 preamp and a RHCP downlink antenna,  
 so I have a solid signal on the  
 downlink. In general, downlink per-  
 formance on FO-12 is more consistent  
 than regular packet here on 145.01  
 etc. I miss an uplink packet on  
 occasion, but this does not cause  
 much of a problem when connected,  
 with retrys at 5.

I am beginning to get use to the FO-  
 12 BBS. I note the status lights on  
 my TNC and just "hang tough" when I  
 see the packet on a command has been  
 accepted...it may be a minute or  
 more before the command is actually  
 service (d) depending on how many of  
 us have a command in line for  
 service.

Anyway, I am now able to download  
 and upload from FO-12 with the lat-

est version of my terminal/antenna  
 control program. This is going to  
 be a useful feature.

PS: Saw your message on FO-12 that  
 vectored me here. 73 Frank

#: 58418 S9/Packet Radio  
 06-Jul-87 14:16:16  
 Sb: #58369-#G3RUH Modem Problems  
 Fm: Barry McLarnon VE3JF 71470,3651  
 To: FRANK H PERKINS WB5IPM 76610,170

Thanks for the run-down on your  
 setup. Although I addressed the  
 initial message to you, I was hoping  
 to attract the attention of other  
 PSK modem users as well, and get  
 everyone talking to each other.

Re the antenna: although RHCP is  
 better more often than not, I do  
 find that LHCP is better perhaps 30%  
 of the time. Sometimes there ap-  
 pears to be a regular cyclical  
 shift, with period of the order of a  
 minute, favoring first one and then  
 the other. But as Bob points out,  
 there is considerable SNR margin on  
 the downlink, and it shouldn't take  
 anything fancy in the way of RF  
 systems to deliver a adequate signal  
 to the modem. In fact, the margin  
 is such that my modem often stays  
 locked even when I have to slew the  
 antenna through 360 degrees to track  
 a pass that goes through south.

I'm glad to hear you're having good  
 success with your G3RUH modem. If  
 you have any "hints 'n kinks" for  
 those who aren't, please pass them  
 along and we'll try to get them  
 collected and distributed. I'm a  
 bit puzzled by your observation that  
 BBS commands sometimes take a minute  
 or more to be serviced. I've never  
 seen delays anywhere approaching  
 that long, even when there are a  
 considerable number of other users  
 logged on. Usually the response  
 comes within a few seconds, and it  
 is very often virtually instan-  
 taneous. Thanks to RAM-based BBS soft-  
 ware and full duplex operation, the  
 speed is quite astonishing... you  
 enter a Read command, and when you  
 hit the enter key, the message head-  
 er pops onto your screen... neat!

My guess is, if you are seeing de-  
 lays approaching a minute, the BBS  
 has been sending you frames that  
 your modem has failed to demodulate  
 properly. There's no way you can  
 tell for sure, but believe me, I see  
 LOTS of retries on the downlink to  
 stations that are connected. That's  
 why I voiced my concern that users  
 might be assuming that slow response  
 or other problems are inherent in  
 the satellite hardware/software,  
 whereas in reality it is their modem  
 which is at fault. 73, Barry

That is just a sample of the things

that are going on with FO-12. If  
 you are interested and not yet af-  
 filiated with AMSAT, now is a heck  
 of a good time to do it!

I still have to sort through a bunch  
 of new-fangled stuff to try and put  
 a decent program together for the  
 Ham Holiday event. I am having a  
 heck of a lot of fun researching the  
 new things that are happening and  
 learning a lot of new stuff in the  
 process. What follows is a brief  
 synopsis of something I was digging  
 through to gain a better understand-  
 ing of what is going on. If you  
 want a good reference on data com-  
 munications, by all means get the  
 book, Understanding Data Communica-  
 tions, developed and published by the  
 Texas Instruments Learning Center  
 and sold at your friendly Radio  
 Shack Store as part number 62-1389.  
 (if they haven't replaced it with a  
 later model!)

The definitive work in the data  
 communications field is more expens-  
 ive than the average curiosity seek-  
 er would want to spend. It is Com-  
 puter Networks by Andrew Tanenbaum  
 and it retails for about \$60.00!  
 Best look for that one in the  
 library!

One subject I really had to concen-  
 trate on resulted in the following  
 essay on "layers" in the ISO refer-  
 ence models. We hear a lot about  
 "that layer three network that is  
 coming 'real soon now'". Here is  
 what I could glean from my reading.  
 Joe, K5JB

### ISO Layers

Maybe you have heard people talk  
 about layer three (or level three)  
 networking. I thought there might  
 be some interest in what the layers  
 are that they are talking about.

In setting standards that various  
 equipment designers and manufactur-  
 ers can follow for wide area data  
 network systems, various standards  
 committees speak in terms of models  
 that describe the physical and logi-  
 cal characteristics of the standard  
 network.

The ITU (International Telecommuni-  
 cations Union) is a part of United  
 Nations. It has three main organs,  
 one of which deals with telephone  
 and data communications. This group  
 is called CCITT, an acronym for a  
 French phrase that I don't know how  
 to spell. But, it has something to  
 do with consulting in international  
 telephone and telegraph matters. It  
 has five classes of members. One  
 class consists of national communi-  
 cation administrators, such as the  
 FCC. The other classes consist of  
 interested parties such as scienti-

file and industrial users, and companies like AT&T. One of the CCITT members is ISO (International Standards Organization) and it tries to make standards. It is a Class D member of CCITT. There is a curious situation here. Both CCITT and ISO make standards, and they are sometimes mutually exclusive.

The ISO reference model of a network consists of seven layers. The ISO reference model is called "OSI" (Open Systems Interconnection). Confused yet? Don't be. I am finished with the alphabet soup. From now on, I will just refer to the layers as "layers"!

Every time I read about these layers I try to think of familiar metaphors that relate to each of the layers in order to better understand what it is all about. This time I am going to try and think it through all of the layers before getting bogged down in the fuzzy distinctions between some of the layers!

The lowest layer is the Physical layer. It deals with details like the sending and receiving of bits over a communication channel. In our SSB phone contact analogy, it would deal with the frequency to be used, modulation method, sideband used, etc. In packet radio, layer 1 defines the nature of the data as synchronous streams of NRZI (Non Return to Zero, Inverted) shifted tones.

The next layer, layer 2, is the data link layer. In this layer the raw transmission medium is converted to one that is concerned with accuracy of received information. In this layer, the framing of information starts. In our SSB analogy, we make a transmission consisting of sentences and thoughts, in packet radio, we send packets of frames containing digital data. On SSB phone we try to detect and correct errors by using phonetics, by repeating ourselves, etc. When one operator says, "Mike's call is N5MS," and the receiving operator says, "That is November Five Mike Sierra?" and the first operator says, "You got it! N5MS" they are performing a layer two error detection and correction process. In packet radio, the AX.25 defined frame contains checking information and when the receiver finds that it is OK it returns an acknowledge frame, or "ACK".

Layer three, the network layer deals with how packets of information get from source to destination, in the proper order. The analogy in the SSB phone world requires the introduction of a network. The ARRL was founded on such a concept so it has a well tested and understood proto-

col. An operation initiates a message (packet) by reading an ARRL format radiogram to another operator on the net. It has all the necessary information to give it a unique identification and necessary information to get it delivered, once it reaches the hands of an operator who lives close to the recipient. It doesn't contain routing information though. It can be routed anyway the handling operators see fit. If the standard ARRL National Traffic System is used, it will be initially placed on the network at a local net level; such as the Oklahoma Phone Emergency Net. An operator on that net receives the message and puts it on one of the "area nets" such as the Central Area Net, where it can make a transcontinental jump. From there it is sent to another local area net, such as the Fruit Fly Net, or whatever, and picked up by an operator who lives in Poke-n-Plumb Georgia. This is an example of using the datagram type of circuit; assuming that every message from Guthrie, OK goes to Poke-n-Plumb by the same route. In reality, we have more of a virtual circuit type of situation on HF. If I get a request from someone to send a message to someone in Poke-n-Plumb, GA, I might likely look in my net directory and see if a Georgia net meets on 20 or 40 meters at a time I am likely to check in and pass the message directly. This lack of discipline is endemic in amateur radio and we might as well design around it. The National Traffic System would work a lot better if I didn't create "virtual circuit".

In packet radio, there has been a great amount of discussion about the datagram versus virtual circuit concepts and neither have been adopted as a standard. It is a whole lot difficult for a dumb computer to pull the same "virtual circuit" stunt that one of us might pull on the Poke-n-Plumb example. All the variations have to be programmed into it ahead of time. One workable system that is emerging is the "adaptive routing datagram" system where workable paths are found by experience and the smart controllers use them until they fail. This is the area where there is a lot of design work and tinkering going on.

Layer four is the transport layer. The transport layer manipulates the available networks to get the most effective use of them. It selects the most effective routing of information. Normally, it would accept information items from several sources and funnel them through a network, keeping all the items separable so they can be reconstructed into their original forms at the far end. Conversely, if there is a lot

of traffic, it may select more than one route and split the information up on one end, send it through different circuits, and rejoin the information on the far end. The transport layer can be capable of point-to-point handling of messages, in proper order, in any order, or broadcasting of messages to numerous destinations.

An example of layer four in the National Traffic System is the book message. It contains a list of addressees who will all receive the same text, such as a congratulatory message about getting licensed.

In packet radio, layer four will have to deal with issues of interference, intermittent equipment, intermittent operators, etc. It will have to have methods for handling simultaneous connections between end users. A good layer four design will be a transparent network to the end users. They will be unaware of the processes that are making the circuit function.

Layer five is the session layer. It deals with how a circuit between two parties is initiated and maintained in spite of route changes or broken links. It assures that all the transmitted information is received. It also makes an orderly disassembly of the circuit when the two parties are finished. It is not necessary to have this layer if the parties just want a raw data channel between them. In some schemes, the functions of the session layer are performed with the next layer, the presentation layer. In our SSB analogy, I guess the session layer consists of what I described as my method for sending the message to Poke-n-Plumb. I know that I can meet one of the local Phone (or CW) nets and file the message and it will be eventually received, or, I can take the direct approach and rifle it into Georgia. I suspect that since we are talking about protocols, the former is the preferred method. It requires that I be at my rig at the correct time and when the net control operator opens the net for check-ins, I say, "K5JB, with traffic." When the net control operator has collected all the requests for traffic, he/she pairs operators, sends them to various frequencies to pass traffic. Since I am sending traffic, I wait for the other operator to pick the precise frequency and call me. He has to be able to hear me better than I hear him so protocol has it that he makes the selection. I tune carefully to his frequency so he can hear me and answer, with something like "K5JB, How copy?" If he says, "Hello Joe, copy is fine. Send your traffic." This is the initial handshake.

At this point I have made my connection with the session. It continues until I get excused from the net. The actual circuit is not dismantled though because the traffic has not been received by the party at the other end. In more real time, I would be in session until the traffic is received, without error. The analogy becomes strained when we introduce delays caused by manual traffic handling. I have to assume that the traffic is received unless I get a service message from an operator telling me that it was undeliverable. I can assume, from previous experience that it will not be correct. I have delivered many messages that had recipient's names and telephone numbers wrong and contained incorrect names in the text. I presume they get garbled in the various handlings. I once received a piece of MARS traffic at my Post Office Box. My name was spelled wrong and the Post Office Box was wrong, but I got it anyway thanks to the error detection and correction process used by the Post Office, namely people!

In packet radio, the session layer starts when someone makes a connection, either through a network or directly; either should look and feel like the same thing. If I send, "Hello J, are you there?", and receive an ACK, I know the link is working, but I don't know if he is there until he says, "Yep, I here!" Then we have a session. I don't know if he pulls the plug to his terminal out of the wall though, or gets a "COCO Crash" until he tells me about it. I assume he reads all I transmit, but that is risky. When I ask a question and he answers, we have a workable session though. We close the session down by saying something like, "CUL 73". I don't disconnect until I see a similar salutation. (Nothing is more aggravating than to have "\*\*\* DISCONNECTED" appear when you finish typing a long winded salutation, or one of those "final, finals"!)

Layer six, the presentation layer, would be the place where we might define the differences between MARS nets and Amateur Radio nets, or the differences between CW nets and phone nets. They have differences in standard practices but from each other but achieve the same results described in a typical message exchange in the session layer. We might do a little data compression. On phone the operators might have used ARRL message numbers. The terms, "QRU, QRV", are forms of data compression that are agreed upon at the presentation.

Finally, layer 7, the application

layer, is up to the individual user. I suppose that in the amateur radio exchange examples, ragchewing, DX-ing, contesting, traffic handling, are all different applications that fit the mold of layer 7.

The following, from the TI book, Understanding Data Communications, describes the seven layers in terms of concerns, using the telephone as an example:

1. Physical Layer Concerns - These are the actual sounds being uttered into the mouthpiece and heard from the receiver.
2. Link Layer Concerns - Talk when you are supposed to and listen when you're supposed to. Ask for a repeat if there is something you don't understand. Tell the other party to slow down if he is talking too fast.
3. Network Layer Concerns - Dial the number and listen for call-progress signals. Redial if you get a busy signal or if cut off. Disconnect when the conversation is completed.
4. Transport Layer Concerns - What is the most cost-effective way to handle this call (or these calls) consistent with priorities? What long distance carrier(s) should be used?
5. Session Layer Concerns - Can this situation be handled in one call or several? Will other people need to be brought in at different times? Who will control the discussion in a multi-party conversation? Who will re-establish the call if we're cut off?
6. Presentation Layer Concerns - Are we talking the same language and dialect?
7. Application Layer Concerns - Am I talking to the right person? Who is paying for this call? Is this the best time to talk or should I call back later? Does the other party have a pencil and paper to take notes?

In packet radio, the first two layers are described in the AX.25 specification but there is not yet a formal, written specification for any other layers. However, the action of Dave, KD5FX, sending the C&E article to me can be dissected to illustrate how the various layers are now in effect. He used the defined layers 1 and 2 to make the connection. Since he can't make a simple link directly to me he used a digipeater, WB5RRR-1 in Pond Creek, which we both can hear. That network, consisting of he, Pond Creek and I was the network, or layer 3. His communication program

in his computer broke up the text he was sending into small enough chunks that he wouldn't over-run the link. I presume the computer and TNC he is using have some kind of handshaking to throttle the information flow. This is the layer 4, or transport layer he has chosen to use. He began the session (layer 5) when he made the connection and asked if I was there. Not knowing if I was saving the data or not left him uncertain about the quality of the layer 5 I was using but in the true adventure spirit of amateur radio he proceeded to send the material. I bet that when he was ready to send the traffic, he hit a button on his keyboard that took care of the layer 6 presentation duties and watched the progress on his screen as it kept him advised on how well his TNC was accepting the text. On my end, the presentation layer did not come into play until the next morning as I scanned the buffer and found the article. In my presentation layer, I hit a button and use an editor to remove that article from the buffer and set it aside. I complete the presentation layer by sending him a message telling him that the article was received in good shape.

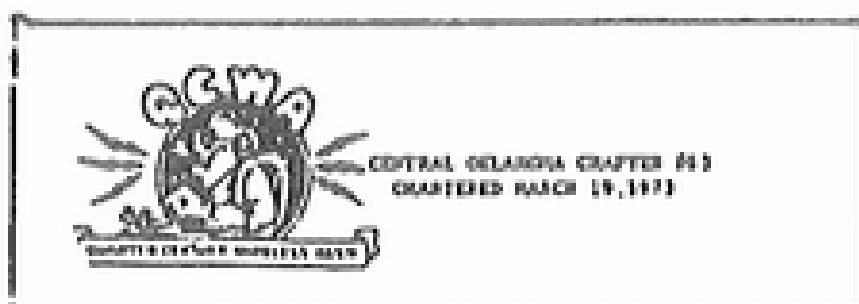
The facts that he chose a time late at night, using a process that worked before, used packet radio rather than the Oklahoma Phone Emergency Net, and sent the message using a particular computer, altogether describe the application layer.

These layers aren't the kinds of layers that packet aficionados mean when they talk about layer 3 networking. They are talking about something better than we have now, something automatic and transparent to the user. Nevertheless, we already have in place seven layers, which is five more than CCITT has been able to agree to thus far in its X.25 from whence our AX.25 originated. Joe, K5JB

#### The Bottom Line

This month's column wound up being a lot longer than I like it to be. I usually throw a bunch of stuff away at this point in the editing process but to quote Pascal in a letter he wrote to a friend, "I regret that I lack the time to make this letter shorter."

It seems like there were a lot of interesting things that happened in the last month. I had a lot of fun playing packet radio and I chatted (typed) with a lot of newcomers who seemed to be having fun also. Together we will be having a lot of fun making packet radio serve us in ways we probably never imagined possible. Joe, K5JB



# <<W5AS INFORMATION>>

QCWA Chapter 63's operation on-the-air during June 1987 as follows:

SESSIONS	4
CHECK-INS	164
TRAFFIC	20

Following is Chapter 63's birthday list for August 1987. Sincere/best wishes to all:

02 Jane Willis	YL W5ATO
04 George Lagaly	W5NTL
14 Norman Jessup	W5EHR
14 Ed Oldfield	W5AYL
17 Harold Gilbertson	W5RB
20 Hugh Benson	KA5DGY
24 Ernie Miller	W5SNM
24 Dottie Shima	YL W0PAN
25 Elmo Black	W5JCB
26 Marjorie Diehl	YL K5WUF
29 Larry Watson	W5EIU

NEW MEMBER: Please welcome Benjamin (Ben) F. Allen, K5IRO, 101 West Glenn Drive; Edmond Oklahoma, 73034 as our most recent member of Chapter 63. Ben builds and flies his own aircraft.

After receiving Howard's note, took the lead to call Ben for additional copy information. Retired from Commercial Paint business. Lives 8 miles north of Edmond (Logan County) with acreage that has to be frequently mowed-much like many of us do. Formerly an Air Force Pilot and still active in many aviation pursuits. Member of Experimental Aircraft Assn, Hales Corner, Wisc.-has frequently visited the facility. Prominent & active member of Edmond Amateur Radio Society (EARS). Currently active in a club project to build two (2) metre amplifiers & low cost antennas. Looking forward to a QSO at Ham Holiday-plan to wear my Aussie (Leather Hat)-once at least. (ED)

UPGRADE: Telecon also from Howard. Carol A King, Chapter 63 Director, K5CPZ is now K5CPZ/AE; now Extra Class as of last week. Purely by chance,"I heard K5CPZ/AE's CW signal. Congratulations Carol".

Also took this opportunity for more C&E copy with a telecon to Carol.(ED). Carol was first licensed in 1860. From Drumright and in Junior High at the time. Initially learned

Morse from a boy who was teaching a code class at Drumright. Will not reveal Carol's current code speed ability-except to say it is well above the Extra Class requirement. She is also a member of the Edmond A.R. Society (EARS). Has been thinking along the lines of teaching code in the near future-would welcome some advice as to the current and best methods in use. Was impressed with her calling of the Sunday net some weeks back. Carol also mentioned that some of our CW-ers-active or semi-active might entertain the idea of a CW net at some scheduled time during the week. Suggest our B of D's make this an agenda item at their next meeting??(ED)

<Vy 73, Howard,W5AS>

.....

At Chapter 63's Spring Quarterly Meeting, Dodson's Cafeteria, last April, our speaker O.E.(Gene)Halley,KF5FW was pressed into service on rather short notice. None-the-less Gene's presentation This Is The "Light Side" was well conceived and well received. After the meeting I induced him to send me a copy of his notes and truly intended to use them back in May. However, had too much copy at that time and was somewhat forced to leave it out. Now truthfully,Gene,I absolutely ran out of time!! So...now from your notes an abbreviated repeat of your very humorous rendition, as follows:

The following are actual statements found on insurance forms where car drivers attempt to summarize the details of an accident in the fewest words possible:

(1) Coming home I drove into the wrong house and collided with a tree I don't have.

(2) I ththought my window was down, but I found out it was up, when I put my head thru it.

(3) A Pedestrian hit me and went under my car.

(4) In my attempt to kill a fly, I drove into a telephone pole.

(5) I had been driving for

CONTINUED NEXT PAGE

FOREST PK.,OK(NL)Aug.23,'87:  
Consider it fortunate that this issue of C&E arrives at your QTH just prior to HAM HOLIDAY '87. An important error correction follows. At least a goodly portion for this error belongs to myself; your interim NEWS EDITOR!!

## <<PLEASE READ-PLEASE READ>>

The QCWA/Old Timers/Young Timers, Sunday morning breakfast (Aug 2nd), will convene at 09:00 hours instead of 08:00 hours; as reported in the C&E the past two or three issues. Those attending this annual affair (12th Year) do not, necessarily, have to be registered to attend. It is hoped that more ladies will attend due to the later time. This breakfast will be in the "Stars Room", some will remember it as the "Tiered Conference Room/Theater". Many who normally attend church elsewhere will be most welcome to attend the "Baptist Hams" service; following the breakfast. Please consult the published schedule of events. The main breakfast program will delve into "Medical Malpractice"-a most timely subject subject that should entice all (ED). Should anyone show up at the previously printed (8:00 Hours), Some QCWA officers and members will be present to help minimize any confusion. Meanwhile!! can only suggest Word-of-Mouth contacts take place on Saturday. (ED). Have tried to word this the best I know how. Please overlook any omissions or possible mis-information. In total, Ham Holiday '87 appears to be the best ever; judging by all of the Sunday activities and the extended closing time-up to 17:00 Hours. Plenty of time to see all of your friends and empty your wallets at the "Dealer-eers & Flea Market-eers!!". Save some to get home!!

## <<PLEASE READ-AND HEED>>

.....

## QCWA CONTINUED

40 years when I fell asleep at the wheel and had an accident.

(6) To avoid hitting the bumper of the car in front, I struck the pedestrian.

(7) The pedestrian had no idea which direction to run, so I ran over him.

(8) I told the police that I was not injured, but on removing my hat, found I had fractured my skull.

(9) The telephone pole was approaching. I was attempting to swerve out of it's way when it struck the front end.

(10) The indirect cause of the accident was a little guy in a small car with a big mouth.

Picked these 10 from a larger list. Tnx Gene-a real treat to those attending. Another highlight at this meeting was the presentation by Raymond Willis, Tombstone Territory, W5ATO to Ralph Rea, W5AA of an engraved block of granite (trapezoidal shape) in appreciation of Ralph's many contributions to Amateur Radio over a long & faithful period. I cannot recall the exact wording-perhaps Ralph will bring this super piece of work to Ham Holiday for reviewing and for those who did not view it??(ED). No. (2) above suggest and oldie,viz. One of the best ways to get rid of a headache is to stick your head thru a window; thereby getting rid of the pain (pane).

Vy 73, Gene, KF5FW

### <<ADDITIONAL FUNFARE>>

Under a category of some "Oldies" depicted as "CLASSROOMERS", it is to be wondered if they really happened, viz:

Geometry teaches to bisect angels; A triangle inside a circle is called a circumscribed triangle; Illegal parking is staying longer than you should in a place where you are not allowed to stay at all; Adolescence is the period between puberty and adultery; Trigonometry is when a lady marries three men at the same time.; A bibliomaniac is a person who reads the bible incessantly from cover to cover.; To be a good nurse you must be absolutely sterile.;



### WHAT'S UP WITH EARS ???

Well now that field day is over and the 4 of July went over with a bang!! What is EARS up to now? Well it's like this, Ham Holiday will be over (probably )before you read this. I know I have been wrong before. But it's not the first nor the last time I'll put my foot in my mouth. I just received word that, Lake Arcadia will open in September. open house will be the 26 th. and 27th of September. And EARS will be apart of the festivities, i'm not sure to what extent we will be involved. more on that later on as i receive more information. The big news is that the dates have been set for the EARS special event station at Lake Arcadia. the dates are the 17 th and 18 th of October. This will be a big weekend for EARS. A dinner meeting on the 16th then the special event station the 17 th and 18th.

Incase you didn't know, The special event station is part of EARS 30 year anniversary celebration and to commemorate the opening of lake Arcadia. A small token of are appreciation for the use of the lake for field day. PS. Want to build a 2mtr amp. classes have started. already but its not too late. contact K5IRO Ben Allen or N5HIP Phil Wolfenbarger. for more information. Phone @ are in current EARS roster. Well folks ill make this short since i'm late as always. This article is due now and i don't have time to add more.

73 KASWIB LEE

Our United States Constitution guarantees that no free man can be hanged twice for the same offense.

Looking forward to Ham Holiday'87. Chapter 63 still needs volunteers for the ARRL Booth; particularly if it is to do business on Sunday. Sixty minutes or one hour-whichever you prefer??

<<CU at H.H.'87,Fred,W5NL

### FIELD DAY '87

Well it's over, gang! Field day 1987 is history -- we put on one heck of a show. Ears had the most beautiful field day location any one could have asked for. Lake Arcadia is a lovely place, the Spring creek park is a perfect field day spot with a cool breeze off the lake, plenty of trees for shade and wire antennas, and the pavilion was a perfect place to operate radios, eat a sandwich or just rest awhile. A great big thanks to David Muffins and his crew for their support for field day. I have never met a group of friendlier, more enthusiastic people; their pride in their lake and their jobs shows any time you talk with any one of them. THANKS AGAIN!! We earned all the bonus points, except for the satellite station (wait until next year); the emergency power was furnished courtesy of the United States Air Force. There were over six hundred CW contacts, over five hundred phone contacts, and many on packet. We had a forty foot tower and tri-band beam, a long wire that added a new dimension to the word LONG. We had plenty of rigs, power supplies, tuners, coax, other antennas and everything else we needed. But the one that made FIELD DAY '87 a success was the PEOPLE (but we could always use more). The members and friends of EARS made preparation before field day, then came together and worked long and hard to make a successful operation out of what looked like chaos at times.

We were able to demonstrate our ability to set up major communications in emergency situations, to demonstrate our hobby to the public and most of all to have a great time with our good friends (sometimes I am not sure we are not a big family), and all of this on very little sleep.

Thanks to all of you who participated; we wish everyone could have (we missed you). We are looking forward to next year!

73, Phil N5HIP  
CONTINUED NEXT PAGE

## MORE EDMOND

### EDMOND 4TH OF JULY PARADE

July 4, 1987--once again THE EDMOND AMATEUR RADIO SOCIETY demonstrates what we are made of. That is, in case you haven't noticed lately, an outstanding group of friendly, outgoing people who are capable of planning an event, coming together, working hard, and making a success out of what seems like total confusion at times. YEA TEAM!!!

Lee Vaughn, KASWIS, took responsibility for the 4th of July activities with only a few days left in June--in fact some of the planning was done at FIELD DAY. He activated the calling committee, which did a great job lining up volunteers. Other people, caught up in the enthusiasm on the repeater, joined us. Another invasion of Crocket's Restaurant Thursday evening got everyone together with Jerry James and some of his crew and we worked out assignments.

We awoke Saturday morning to the familiar sound confirming that Wes, KBSBKX, had indeed had his car washed and waxed in preparation for our entry in the parade; yes boys and girls, we were having thunderstorms. Knowing the Edmond Parade is like any show business endeavor, we knew that the SHOW MUST GO ON! Some of the members who do not live in Bethany and had only a few blocks to drive had time to gather for breakfast before our 7 A.M. meeting time. No rain now--maybe the weather will hold? Lee, KASWIS, took his position as liaison for the Civil Defense to handle emergency communications (we had one call to the fire department for a vehicle on fire, and took one little girl to Kevin, NSGVN, at the RED CROSS van after she collided with a unicycle; neither incident was serious, fortunately). Dee, WDSFHR, took his position with Jerry James for communication with parade officials. After donning OFFICIAL arm bands the parade route crew located their positions for a long morning of monitoring health and safety and reporting

parade spacing, etc. Meanwhile, the rest of us settled into the job of greeting parade entrants, finding out who they were, where they were supposed to be and getting them staged. With everything going smoothly (?) we got a nice little summer morning shower. That cooled us all down, made the people on the floats real happy, and modified some handy talkies so they would transmit without the PTT button. The shower was short, the ones to come were even shorter and by 9:45 all the entries were ready, including the official EARS entry--a 1957 Ford convertible carrying Lee, NSHIR, Allen, WSERY, and our 50'S teenagers Nora, NSKDX, and Marshall, WUSP, followed by a 1987 Nissan Maxima with Wes, KBSBKX, and Malinda Haralson. The signs on the cars (printed by Marshall, WUSP), commemorating our 30th anniversary, read "EDMOND AMATEUR RADIO SOCIETY 1957-1987".

With the natives getting restless the parade got under way at about 9:50, and a couple of hours later, with all going smoothly, the parade was drawing to a close. After a little clean up work and saying good bye to some new friends, most of the bunch headed to Goldie's Restaurant for some food and fun talking over the activities of the morning.

The parade officials told us that this was the smoothest that the parade has ever gone (YEA TEAM!!!), and conveyed

their thanks for EARS contribution to the 4th of July Festivities in Edmond this year.

After a little rest many of us were back at CSU stadium to help with the activities there. Light duty after the morning work, mostly watch the crowd for any health or safety problems (we got one youngster to the RED CROSS van and David, KB5DQZ, to check a bump on the head after a tumble off the curb). The biggest concern for the evening was that Lee, KASWIS, might be getting chilled under the air conditioning in the CIVIL DEFENSE COMMAND CENTER (a plush motor home). After the last flash of spectacular fireworks we headed to the watermelon on the tailgate of Lee's blazer and spent an hour or so with good friends.

If you missed this day with us, I am sorry, you missed a great time. To those of you who were there, THANK YOU! All of you did a terrific job!

I have many opportunities to hear a lot of nice comments about EARS, and on the 4th I heard several of the things that make me the most proud of EARS--things like "the most helpful group", "friendliest people", and "a hard working team". These are the some of the qualities that make EARS a great club and why I am so proud to be a part of it. Keep up the good work, gang!

73, Phil, NSHIP

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FRI				
7PM	not avail	*Oklahoma Weather Rick Tasetano	available	not avail
8PM	not avail	*Antennas: Will You Keep Yours?	available	not avail
9PM		*Eyeball QSOs		
(maybe have refreshments available for purchase in Rotunda Room?)				

SAT				
8AM	(Dealer areas and Flea Market opens.....)			
9AM	Public	*Lightning	*MARS	VE testing
930	Demos	Dr. David Rust		
1000	Packet,	NSKCW,NSSL,Norman	*OKC Fire Dept:	
1030	Amsat,	*ORSI	Safety in the Home	till lunch
1100	ATV,		*Citizens against	
1130	WEFAX,		Crime	
1200		L U N C H . . . . .		
1PM	etc (hands on)	*ARES/RACES	*Pam Pryor, KTOK	VE testing
130			Current issues	
200	ALL		*Satin and Lace:	
230	DAY	*AMSAT,	Fashion Show	session 2
300		Al Brinkerhoff	*Manicure Seminar	
330		WB5PMR		
400	(public area)	*Packet,What's next?	*Traveling Zoo	till 5
430		Joe Buswell,K5JB		
500	convention area closed for day			OPRA (515pm)

eve	BANQUET			
SUN	Dealers/Fleas open 800AM			
8AM	QCWA Breakfast (Stars Room)		*CPR Course	
830			OKC	
900	Public		Red Cross	*Baptist Hams
1030	Demos		till	
1000			noon	VE Testing
1030	throughout	*NTS/Public Service	anyone may	till lunch
1100		(Stars Room)	attend	
1145	day	L U N C H . . . . .		
100PM	"	*ARRL FORUM	*Crafts seminar	
215		Prizes, etc.		
		Stars		
500	CONVENTION CLOSSES			

SUN	MON	TUE	WED	THU	FRI	SAT
<b>AUGUST</b>					<b>HAM HOLIDAY</b>	
H A M HOLIDAY 2	3	MORI SW OIC Junior Cpl. 8:00 4 GREAT PLAINS	5	TRI-CITY AERONAUTICAL No Meeting See 8-21 6	7	SCARS COCO 8
WHEATSTRAW 9	EDMOND CLUB 10	OIDAR 76'ers New Location A F E S 11	12	ALTUS AREA OIC, PM 13	14	VHF No Meeting See 8-21 15
16	VE EXAMS Red Cross 6:00 pm 17	AUTOPATCH 18	19	CIMARRON 20	WATERMELLON FEAST See Page 1 21 EARS	22
23	24	CORA 25	26	27	EDIT NIGHT for C & E 28	29
30	31					

MORE ON COCO

#### Doorprize Winners

describe how to correct the OS-9 difficulties that the old J&M controllers were experiencing. He will publish the information in the C&E.

3. Sam Murr is looking for an inexpensive modem. Radio Shack has the DCM-3 on sale for under \$30.

#### Software Problems

1. Ronn Folk mentioned that his bulletin board, COBBS, now has a section dealing with software problems.

2. David Burkleso wants to access OS-9 programs on CoCoNet. Randy Kastner explained how to go about it.

3. Erik Petrich needs to talk to someone experienced in using the RB-232 pack as an interface device.

4. I needed a program to send line feeds along with carriage returns to my printer. Harold Todd mentioned a program called FORM MAKER that was on the swap disk a few months ago. Bob Pace offered to put a program called CRLF on CoCoNet.

5. John Landis is having line noise problems when he uses his new modem.

6. Bill Warren was curious what teletype programs the radio amateurs are using. Harold Todd mentioned RTTYDISK, a program on this month's swap disk. Steve Moore and Larry Boettcher mentioned another that appeared in a ham magazine a couple of months ago.

#### INTERBANK INCIDENT - John Foss

Disk Graphics - Heike Goad  
Art Gallery - Bill Warren  
Musica 2/Orchestra 90 - Ron Goff

COLOR PROFILE - Raylon Rogers  
TRIVIA FEVER - Sid  
disk box - Larry Boettcher  
disk box - Merrill Scott, Jr.  
disk box - Vic Moore  
disk box - Bob Jetton  
disk box - Chuck West  
Flip-n-File 75 - Tony Wangler  
calculator - Jim Scruggs  
blank disks - Harold Todd  
blank disks - Paul Pape  
blank disks - Ron Gordon  
blank disks - Joe Brown  
blank disks - Cecil Borin  
stapler - Earl Couch  
paper punch - Jeff Chappell  
3 used disks - Robert Browning

OS-9 - Frank McCollom  
SPACE PROBE MATH - Billy Gill  
Hot CoCo tapes - Dale Goad  
muffin fan - Lee Lash

#### Program

Dorothy Roberts and Sam Murr presented another interesting program in their beginner's BIG. Don't let the name fool you, though. They cover material that interests most old-timers, too.

- Martin Schiel, 670-6891

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