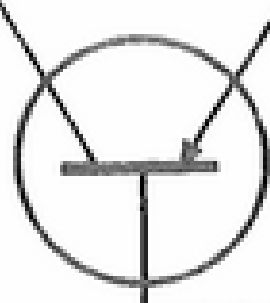


CENTRAL OKLAHOMA RADIO AMATEURS COLLECTOR AND EMITTER



50¢

VOLUME 9 SEPTEMBER 1983 NUMBER 104

Happy Hams Leave Ham Holiday 83

Among the many who attended HAM HOLIDAY 83 we believe that probably some of the happiest to leave were the following. They took home the awards. I hope this list is correct.

K5JME	Herb Boyer(Tulsa)	TS430S GRAND AWARD
K5FCO	Ray Barclay	IC-22U
K5YR	Craig Boyer	Computer Table
K5CR	Bruce Goff	Keyer
K5NK	Chuck Wilhite	Headphones
K5CQ	Reo Nicar	Memory Keyer
W5YIL	Chris McKinley	DM-81 dip meter
N5ETU	A.B. Clark	Mobil Antenna
	Gary Woodrow(Elk City)	First Aid Kit
W5GZP	H.D. Schilling	Surge Protector
	Eddie Kidd	Surge Protector
W5GVT	Lucille Stine(stillwtr.)	surge prot.
W5DS	Bob Edlund (Crescent)	AS0-3 Ant
K5ROB	Brad Bailey(Fairview)	Dx Newsletter
W5DLX	Lee Schiller	stereo cassette player
	Mrs Van Schallenberg	Keyer
K5LBM	Kyle Merritt(Clinton)	Dx Newsletter
K5ROB	Brad Bailey	cont.educat.kit
AB5K	Terry Gerdes	book etc
W5NBO	Kathy Whited	Mobil Ant
W5CHE's	xyl Lavita Ford	Master Key
W5EOD	Hugh Reynolds	QRZ DX Magazine
W5JPB	Bruce Graff	ant book, insulator etc
W5VIO	Joe Payne(Augusta Ks)	balun,book etc
N5FH	Van Schallinberg	book,balun etc
	Jeff Russell	hf mobil ant
K5HQP	Marvin White	hf mobil ant
K5ESA	Bill Boland	keyer, books etc
W5SOC	Gene Holley	mobil ant etc
W5GOM	Art Roberts	books key etc
N5CCV	Gerald Bowmon	40 m ant coil etc
W5OVT	Ron Ford (Gage)	map books etc
	Al Aquilar Jr (Tulsa)	map books etc
W5FAF	William Lingle	ant coil etc
K5MPJ	Judy Weiss (Mtn View)	books and ant.
W5NWX	Reggy Whited	map, ant book
W5AS xyl	Hartenn Baker	COLOR COMPUTER
N5???	Ann Lucas	IC-2at
W5JCE	Eldon Chaver	SWR PWR METER
W5SAM		IC-4at
W5JHB	Marvin Stokes	Vic-20
W5AA	Ralph Rea	surge protector
K5MUX	Mike Liles	maps, licence manual
K5GTM	Dennis Musser	Hazer III
K5FUU	Tom Johnson (El Reno)	VOM
K5ZB	Larry Yarbrayle	surge protector
W5SQJ	Jess Spears	roof-deck mount
N5BEW	Ken Esadoogh	file 125
K5JB	Joe Buswell	JUNK
W5PHS	Byron Cox	book & VOM
K5SHU	Jim Cantrell	books
K5SNY	Jay Tingler	misc items
	Pauline Rea	misc items
K5IRS	Perry Hyde	ant coil, book etc
W5BDP	George Lawrence(Wichita)	Master key
K5UQ	Leslie Stewart(Praque)	MKR2 kit etc
K5KDR	Bill Oliver	book, map etc
W5RPP	Sam Barrett	mag mount, books
K5IGW	Jim Ridly	books map etc
W5UUX	Charles McCowm	ant coil, maps etc
W5CEP	Rick Long	ant coil, maps, book
N5DEW	Rim Moore	book, map etc
	Perry Langham	PRE-REGISTRATION
	Ailleen Strawn(Tulsa)	microwave oven

2	CORA COMMENT	11	ALTUS
4	AUTOPATCH	12	COCO
5	KAY	16	OK-DX
5	MORI	17	SALEM
6	ACARC	22	SCARS
8	VHF - JOE	22	76'ERS

11 Q. R. ZEDD



Another month has come and is about gone. It has been a busy month here trying to stay as close to the air conditioner as possible. Sunday, August 14 was like all the rest of the month except for one thing. There was a little extra traffic on the old repeater as some of the local bunch made preparations to head out to Canton Lake for the annual Wheatstraw Club lakeside meeting. I heard Ted, W5JNT and Venus K5FUU and Bertha, Ed W5SEGB and Betty K5JLA and Joe W5FLT start out early. There could have been others. I don't know what reason they gave the ladies for going so early, but I know that the real reason was so they could have plenty of time to stroll the beaches and enjoy the scenery. The radio activity as they were leaving stirred me up and I left an hour earlier than I had planned. That did give me more time for the eyeball QSOs. I did enjoy meeting with all the guys. There was about 50 there, and not all Wheatstraw members either. We had a good turnout from the Great Plains ARC and Cimmaron ARC clubs. I won't try to name anyone, since I would miss too many. Thanks for coming. Gordon K5XI became our newest member. Like always when the Wheatstraw Club gets together, the food was fine. There was much more than we could do away with. There were pies, cakes, cantalope, ice cream, to end up with if you had room left after all the chicken, deviled eggs, salads and other stuff.

Bus Bloom, W5VU is the teacher for the Wheatstraw Radio School. He is the one who taught most of the club and helped us get our licences. While he has kept an interest in the club, he never makes any meetings. Well what I am getting to is that OLD BUS has got a NEW WOMAN. He got married. I hear that when he was asked about a radio problem the other day, instead of lending a helping hand, all he had to say was radio? what's that? dont know what you are saying....and stuff like that. Helen says that Bus will teach novice class again this fall starting shortly after first part of September. She will be one of the students. Congratulation and best wishes to both of you. Helen, I didn't think any woman could cause Bus to forget radio.

The next meeting will be another outing. This time it will be the watermelon feed at Weatherford, hosted by Perry W5MGZ and Fred W5FFE. It will be at the Weatherford City park, but you will have to look elsewhere for directions. Check into the Wednesday nite net to find out, or use .52 when you hit Weatherford for instructions. Perry save me some of the yellow meat ones. See you there.

The net control for the Wed.nite net is the responsibility of the town hosting the next meeting. Therefore it is to the members in Weatherford to be net control this month. That is if Perry can't talk Ray K5LLX into doing it again like he managed to do on 8-17. No excuse Perry.

remember: weatherford the 2nd sunday of oct.

k5ggl



C O R A C O M M E N T S

There were 24 members present at the August meeting of CORA. There were four items discussed and then the meeting broke up.

1. Minutes of the last two meetings were read and discussed briefly, then approved.

2. The next item was a detailing of the finances concerning Ham Holiday X. You will find the treasurers report in the column to the right. As you will notice we spent more money for the facilities (Myriad) than we did for prizes. Also the banquet and dance didn't turn out too well, but everyone had a good time anyway.

3. Committee reports took up most of the meeting with a report from every committee on how things went with them.

FACILITIES: Everything worked out just fine. There were several glitches but that was expected. Don liked it so well that he volunteered for next year.

LADIES: Fred had a ball, the women had a Style Show and everything went about as expected. No volunteer for next year - as yet.

DEALERS: All but one made money and will be back, he probably will too.

PRIZES: There were lots of people, list is on front page, made happy. Major changes in prizes is planned for next year.

PRE-REGISTRATION: All those people and only one unhappy one. Thats pretty good.

DOOR REGISTRATION: Everybody and his brother helped here. Need some changes next year.

BANQUET/DANCE: \$545 short. It appears that something will have to be done about this.

PROGRAMS: Varied attendance. More than one at a time. Sunday morning, too many. But every one seemed to enjoy the ones that they attended.

4. It seems as though we won't be able to have Ham Holiday on the last weekend in July next year -- the Myriad is already booked. However we have booked it for the weekend before that, July 20, 21 & 22.

5. The final work of the evening was the acceptance of Edmond Amateur Radio Society's request to rejoin CORA. It seems that there was a misunderstanding a couple of years ago but those people have moved on.

In the accounting report below please note that the closing balance contains a couple of hundred dollars to take care of final expenses.

Sorry but I got carried away and will have to put the financial report for CORA on page 5. Please turn to that page for the information.



Mike's Cycle Salvage



2212 SW 29th OKC 631-7223

New & Used Parts

We Buy Salvage

Mike Kramer KASHUP

146,025 / 146,625 REPEATER

FEEL FREE TO USE IT

THESE CORA MEMBER CLUBS PROMOTE AMATEUR RADIO

<p>1 AERONAUTICAL CENTER ARC MEETS: 8:00pm First Friday. Flight Standards Bldg., FAA, S. Macarthur PR K5LDI Tom Mangham 677-5291 VP AF5X Jess McKenzie 329-1543 SE KA5JCX John Mooney 794-8519 TR K5RJR Larry Vorheis 789-9629 EDITOR: John Mooney, KA5JCX 794-8519</p>	<p>13 KAY COUNTY AMATEUR RADIO CLUB MEETS: 7:00pm Third Thursday Ponca City EOC PR WB5YRN Delbert Foiles 762-4479 VP WA5UBO Marsh Pronneke 363-2526 S/T KA5PUB Glenn Bishop, Jr. EDITOR: Rick Long, WD4CEP 767-1871</p>
<p>2 OKLAHOMA CENTRAL VHF CLUB MEETS: 10:00am Third Saturday. Red Cross. 10th & Hudson(Back door) Okla City. PR WA5HTL Paul Asplin 787-4286 VP KD5IS Jerry Wetmore 524-5080 SE K5JB Joe Buswell 732-0676 TR W5KE Ellard Foster 789-6702 EDITOR: Joe Buswell, K5JB 732-0676</p>	<p>14 CIMMARON AMATEUR RADIO ASSOCIATION MEETS: 7:00pm Second and Fourth Mondays. Place varies. See club section. PR KI5P Major Bailey 227-2061 VP WB5ECM Dennis Painton 764-3599 S/T N5FMH Nadine Painton 764-3599 EDITOR: Jack Day, N5FMQ</p>
<p>3 MID-OKLAHOMA REPEATER, Inc. MEETS: 8:00pm First Tuesday. Okla City EOC. 4600 N Eastern PR N5EPV Bob Allen Unlisted VP KD5DL Holly Stewart SE KA5CXW Fred Taylor 528-1537 TR W5KOZ Sil Gerber 737-1050 EDITOR: Susie Atkinson, KA5FED 842-8014</p>	<p>15 SOUTH CANADIAN AMATEUR RADIO SOCIETY MEETS: 9:30am Second Saturday. Red Cross Bldg., North OU Campus. Norman PR K5KDR Bill Oliver 329-6333 VP KA5MIZ Bob Rabin 360-6996 SE KA5EPJ Ken Neptune 321-7789 TR WD5GTC Gene Johnson 321-6759 EDITOR: Sam Barrett, WA5RPP 321-2601</p>
<p>4 OKLAHOMA CITY AUTOPATCH ASSOCIATION MEETS: 7:30pm Third Tuesday. Okla City Fire Training Center. 800 N Portland PR WD5FKF Reuben Castleberry 691-1070 VP WB5NDO Kathy Whited 799-1457 ST N5DLM Vickie Adkins 722-6795 TR KE5M Ron Recer 341-7030 EDITOR: Kathy Whited, WB5NDO 799-1457</p>	<p>16 EDMOND AMATEUR RADIO CLUB MEETS: 7:00pm First Thursday. See club section for location and type. PR WD5DYI Mark Northcutt 755-4672 VP WB5MLX Glen Cochran 942-7148 S/T WB5UIY Stan Van Nort Unlisted EDITOR: Stan Van Nort, WB5UIY</p>
<p>5 OKLAHOMA UNIVERSITY AMATEUR RADIO CLUB MEETS: 7:00pm Second Tuesday(Sep-May) 119 Wilson Center. 1334 S Jenkins PR KA5BAY Luke Noah 325-1775 VP S/T KA5LZN Greg Smith 325-3218 EDITOR: Greg Smith, KA5LZN 325-3218</p>	<p>18 GREAT PLAINS AMATEUR RADIO CLUB MEETS: 7:30pm First Tuesday Civil Defense room, Woodward courthouse. PR WB0PGD Ron Tice 994-2138 VP KOCIO Larry Ellis (316) 582-2889 SE WB0QGW Carla Tice 994-2138 TR NC5C Gerry Ford 256-5382 EDITOR: Carla Tice, WB0QGW 994-2138</p>
<p>6 ALTUS AREA AMATEUR RADIO ASSOCIATION MEETS: 7:30pm Second Thursday North Main Fire Station (CD) Altus PR KA5MPK Gary Alexander 482-0857 VP S/T KA6RTX Bill Flattery 482-1155 EDITOR: Bill Flattery, KA6RTX 482-1155</p>	<p>19 SOUTHEAST OKLAHOMA AMATEUR RADIO ASSN. MEETS: 7:30pm Second Monday. Location varies, contact a club officer. PR WB5TTU Ron Henson 326-5418 VP WB5ULI George Weldon 326-5672 S/T WD5FUE Orville Kaley 326-3650 EDITOR: Ron Henson, WB5TTU 326-5418</p>
<p>7 BICENTENNIAL (76ers) ARC MEETS: 7:00pm Second Tuesday. OG&E Bldg. SE 3rd & E. K. Gaylord Blvd. PR N5BFD Jim Hopkins 947-0043 VP WD5JNT Ted Vanlaningham 262-1675 SE N5AUH Jerry Sproul 354-2061 TR WA9AFM Tom Webb 737-6716 EDITOR: Bruce Goff, KC5CR 751-7192</p>	<p>20 ARDMORE AMATEUR RADIO CLUB MEETS: 8:00pm First Wed. Red Cross Bldg. Informal, 8:00pm other Weds. 221 9th NW PR W5HJ Tom Banks 226-3350 VP WB5VBK Fred Innis 223-1709 SE WA5YOM Tim Vandagriff 223-3582 TR W5BLW Charles Dibrell 226-0589 EDITOR: John Merlyn, WD5FZD 223-9543</p>
<p>9 WHEATSTRAW AMATEUR RADIO CLUB MEETS: 2:30pm Second Sunday. Location varies. See club section. PR KA5FUU Tom Johnson(El Reno) 262-5631 VP KA5DUO Leo Peil (Canton) 886-2996 S/T WA5PFK Ralph Wilder(Watonga)623-4521 EDITOR: George Maschino, K5GGL 263-7614</p>	<p>CENTRAL OKLAHOMA RADIO AMATEURS, Inc. MEETS: 7:30pm Fourth Tuesday. OKC Fire Training Center. 800 N Portland PR WD5JNT Ted Vanlaningham 262-1675 VP K2GKK D. C. Macdnald 672-4947 SE N5BEQ Jim Buswell 236-0368 TR K5GGL George Maschino 263-7614</p>
<p>12 SHAWNEE AMATEUR RADIO CLUB MEETS: 8:00pm Second & Fourth Tuesday Shawnee City Hall (EOC) PR KD5NX Jay Tingler 273-3033 VP N5CGZ David Stanley 273-4226 S/T W5TQZ Herbert Holton 598-5984 EDITOR: Earl Couch, WB5ZBA 589-3212</p>	<p>CORA Collector & Emitter (USPS 116-150) is published monthly by CORA Inc., 1020 Arthur Dr, Midwest City OK 73110. SECOND CLASS postage paid at Oklahoma City OK SUBSCRIPTION: CORA members \$3 others \$6 yr. POSTMASTER: Send Form 3579 to: CORA C&E, P.O. Box 15013, Del City OK 73155 MANAGING EDITOR: Joe Harding, WA5ZNF, 737-1044 CIRCULATION MANAGER: Bob Graham, WB5NSV, 677-8685</p>

N E X T M E E T I N G

20 September 1983

(3rd Tuesday)

EMERGENCY TRAILEREMERGENCY TRAILER**EMERGENCY TRAILER**

The September OCAPA meeting will be a training meet to acquaint more of our members (and other interested area amateurs) with the capabilities and the care and feeding of the OCAPA-sponsored emergency communications and power generation trailer. The three or four people currently competent in set-up and operation of this fine facility cannot be expected to shoulder the entire burden of emergency preparedness responsibilities of all of the Oklahoma City amateur community. It is time for more of you to become contributors instead of consumers. Remember that amateur radio continues in existence due to the service it provides to the public. Preparation for unpredictable emergencies is a way in which anyone can contribute toward the continuation of the Amateur Radio hobby we all share. Come one, come all to the September OCAPA meeting on Tuesday, 20 September, at 1930 CDT, at the OKC Fire Department Training Center, at 800 North Portland Avenue.

ELECTION RESULTS**ELECTION RESULTS****ELECTION RESULTS**

OCAPA annual elections were held at the August meeting with the following winners:

President: WD5FKF, Reuben Castleberry, 691-1070
Vice Pres: WB5NDO, Kathy Whited, 799-1457
Secretary: N5DLM, Vickie Adkins, 722-6795
Treasurer: KE5M, Ron Recer, 341-7030
Editor: WB5NDO, Kathy Whited, 799-1457

PLEASE give these new officers your support and your suggestions. Be a member and not a customer.

My apologies for a somewhat short column for my final shot, but after a two-week, 4125 mile vacation (?), a two week growth of grass to cut the first day back, and a nine and a half hour day in the hangar the next day, I'm just too pooped to pop for any more. Hope everyone had a good summer and all the new rigs bought at the Ham Holiday are living up to expectations. Judy's new ICOM IC-25H worked just great on our trip (guess who used it the most). Remember that with cooler weather just about here (I can hope, can't I), it's time to get busy with preparing our antennas for fall and winter winds so we can stay inside and be comfortable in front of the rig.

Again, welcome and support the new officers of YOUR Oklahoma City Autopatch Association.

See you on the bands,

Mae
K2GKK/5

SOME YLS ARE SMARTER THAN OTHERS

One of our better known YLs (who shall be nameless) got married to a banker a couple of years ago. Unfortunately he died a couple of months later. Soon after that she married number 2, but he died in a week. Not liking a lonely life she married number 3, her pastor, a month later. Same story, he died soon thereafter. At his funeral she fell in love with the undertaker and they were married the next week. A friend asked her what in the world she was doing and her reply was - "You know, One for the money, Two for the show, Three to make ready and Four to go!"

SOFTWARE ERROR SANK THE SHEFFIELD

HMS Sheffield, the first and most devastating British naval loss of the Falklands War, was hit by an Argentinian Exocet missile because the ship's computer was programmed to recognize the Exocet as friendly. Immediately after the sinking, all computers aboard the rest of the task force in the South Atlantic were reprogrammed to correct the error.

From ZS6TJ Calling

WHAT IS QRP ?

The code QRP is used by radio amateurs to refer to low power operation. The term has been adapted from the Q-code meaning "Shall I reduce power?" Internationally QRP is defined as low power radio communication, using five watts or less input.

Many QRP stations operating QRP operate CW, because in a situation where every aspect has to be optimized to be successful, CW is the most effective mode of communication in the crowded HF bands. Telephony has its place in QRP with many stations operating on SSB only.

CONSTRUCTION

QRP offers the radio amateur many construction opportunities. Equipment is usually much less complex, bringing home construction within the reach of almost anyone.

WORLD QRP FEDERATION

A recent development in QRP has been the formation of the World QRP Federation, an organization, which already has eleven country-members.

QRP CALLING FREQUENCIES

Band	CW MHz	SSB MHz
80	3,560	3,690
40	7,030	7,090
20	14,060	14,285

From ZS6TJ Calling, Johannesburg



GENE NAILON - K5DLE
Avionics Manager

OFFICE 405-681-2331
HOME 405-341-8289

WANTS: AVIONICS TECHNICIANS FOR REPAIR AND INSTALLATION OF AVIONICS EQUIPMENT (NAV/COM, PULSE FLIGHT CONTROL) IN IN GENERAL AVIATION AIRCRAFT.

EXPERIENCE IN GENERAL AVIATION AVIONICS PREFERRED - - BUT NOT REQUIRED

kay

COUNTY .ARC

GREETINGS to everyone from KCARC ! It looks like some good actually came from Hurricane Alicia. Its raining here in Ponca City! First good rain we've gotten in about a month and a half.

We really had a good club meeting on the 18th. this past month. There were 15 members present: Delbert WB5YRN, Dave WN5LUI, Harry WD5DPR, Dr. Paul KA5PYG, Glen KA5PUB, Marsh WA5UBO, Tim KA5OHU, Sam WD5BXI, Jim K5FLL, Tony WD5EAA, Vern N5ANV, Otto N5EO, Tom N5ZR, Rick WD4CEP, and Charlie N5EYD. There were 4 visitors also present: Bernard Campagnac F2IH, Dan Prater K5CAY, Gordon Ward N5ABJ and Hank Kruckeberg((maybe a Ham recruit).

Dan Prater K5CAY gave a program on becoming an ARRL affiliated club and all the extras that come with membership. He also had a video tape on Amateur Radio in Space, which was very good. The video covered satellite operations and the upcoming historic event -QSO with Dr. Owen Garriott W5LFL onboard the Space Shuttle Columbia, beginning Sept. 30. If you would like to find out how, there are articles in the July and August issues of QST.

Tony WD5EAA and Vern N5ANV also gave a short program on their "DX-pedition" to New Mexico during Memorial Day weekend. They went to Hermit's Peak in the Pecos Wilderness, N. Central New Mexico. They spent two nights at 10,500 ft. on top and worked several stations on 2-meters. Vern had a homemade Quagi beam that could be broken down and placed inside one of the booms for easy carrying. The radio used was an Icom IC-2AT HT. Even though they had every sort of bad weather (yes, even snow!), they managed to have a pretty good time. The slides were really good and the scenery was especially good.

Congratulations are in order to Glen Bishop KA5PUB and Louis Moffat KA5JLZ, both of whom upgraded to General during the August 9th FCC test at Tulsa. Another chance to upgrade will be in Oklahoma City, October 11, for the hams who wish to.

Other topics covered at the meeting were about having Novice classes this fall, a social event in September or October, and putting notices for club meetings in the local paper. Another topic that came up during the meeting was about interference caused by the TV cable in Blackwell. N5ANV reports that a full-scale signal can be received all around Blackwell on 145.25 which is real close to the Blackwell repeater 145.23. If you experience any interference such as this, notify the cable company in Blackwell. We were also encouraged to notify the FCC regional engineer in Oklahoma City of the interference.

Our DECEMBER meeting will be held on the 3rd TUESDAY, DEC. 20 instead of the 3rd Thursday. This meeting will be a dinner meeting at the Rusty Nail restaurant on 14th Street in Ponca City (you buy your own). The change had to be made due to the restaurant having previous commitments.

Just as a reminder, the Kay County Net is held every Monday at 9:00 p.m. (21:00 hrs.) local time on the Ponca City Repeater -- 146.97/37.

Remember---Support the repeater you use and USE the repeater the support....

73's
Rick--WD4CEP



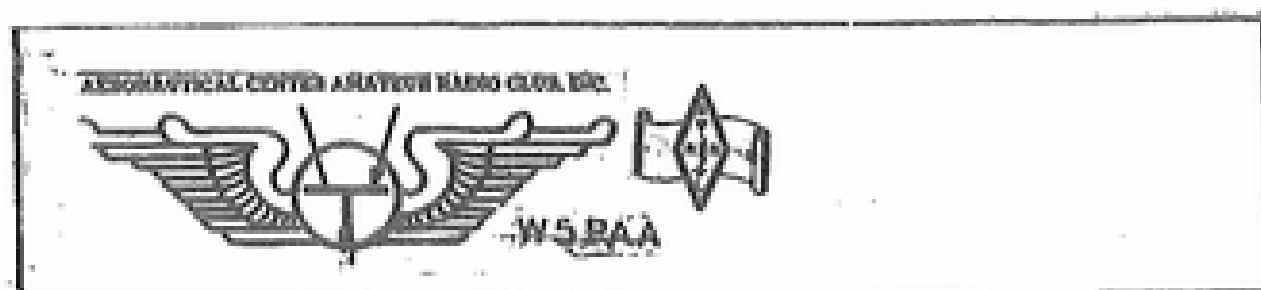
I guess everyone survived "HH-83" and enjoyed themselves a lot. However, I arrived a little late (due to a few employment complications) but I had a good time for whatever I got to see. I got there just in time for the Style Show, narrated by Pat Shockey and fashions were provided for by Rothschild's. I must admit that I admire those women who modeled for us in that 102 degree heat. I think they all looked really nice. I grabbed a quick snack and went back to the Myriad where I played a game of bingo (which I always enjoy) -- I didn't win any of the real big prizes, but I won a name tag with my name on it. I then went through the Flea Market, where there was all kinds of activity, wheeling and dealing, etc. I got to see quite a few friends that I haven't seen in quite some time and was able to visit and catch up on the latest. I left about 5:30, so I didn't attend the banquet/dance, but I guess everyone enjoyed the band and good food. The next day was the finale, and a lot of happy winners -- in fact, the first number drawn was just two away from mine, and went to Ray Barclay from Stroud. Needless to say I was very excited for a few seconds, and even later on, because there were other tickets drawn that were real close.

Following right after HH was the MORI meeting and the attendance wasn't quite like it used to be, but I guess it was because of the recovery of HH, weather, etc. We had very little business, and the rest of the time was just good ole "rag-chew" and we adjourned. We had a new member join us that night, and I apologize for not having his call available, but his name is "Cal" and even his wife is a ham -- her name is Linda (their last name is "Callison"). I'm very sorry for not jotting these down, but I am at work, and my notebook is at home.

I haven't had much chance to read my C&E (especially the calendar so I can't report too much on the activity, but I am sure some of you have, and I know there is probably plenty of it. In fact this whole article, I am not very newsy -- I wish I could have had more time before the deadline, but I promise next time I will be. Hope that everyone is having a wonderful summer, in spite of the weather and all, and I'll catch you all later...

73' Sueie. KA5FED

HAM HOLIDAY ACCOUNT	
OPENING BALANCE	\$1971.28
INCOME	
PREREGISTRATIONS	\$4255.00
REGISTRATIONS	\$3717.60
DEALERS	\$1039.00
LADIES	\$438.00
BANQUET	\$593.00
DANCE	\$468.55
FLEA	\$160.00
ARRL	\$733.00
TOTAL INCOME	
	\$11404.15.
EXPENSES	
REGISTRATION	\$267.77
FACILITIES	\$3636.90
DEALERS	\$527.24
LADIES	\$850.00
PRIZE	\$3250.10
PROGRAMS	\$58.15
MEALS	\$794.70
DANCE	\$812.75
PUBLICITY	\$213.45
ARRL	\$687.25
TOTAL EXPENSES	
	\$11098.31
CLOSING BALANCE	
	\$2277.12



The Annual Watermelon Feed with the VHF Club was held on Friday the 19th despite some damp weather (take that Alicia) in the East Shelter of Bethany Park. The watermelons were indeed sweet and juicy (I've got two dirty children's tee shirts to prove it) and both clubs were well represented.

Charlie, WA5JGU did a fine job of cutting up the melons and the rest of us took over from there. Unfortunately the only seed spitting contest took place between my sons and I ended up with seed(s) on my face (thanks WB5NSV).

Don Rooker, K58JV was there and asked me to announce that the usual date for Ham Holiday (last full weekend in July) was not available at the Myriad for next year, so he has tentatively scheduled it for the next to last full weekend in July (that is the 21st and 22nd). He needs feedback to see if this is a satisfactory date before it is confirmed; something to discuss at the next club meeting.

Here's hoping to see you at next month's meeting.

John KA5JGX

ANOTHER MULTI-BAND ANTENNA

The June issue of AMATEUR RADIO, available at the ACARC clubroom, describes yet another multi-band antenna. This one is a delta loop, in the configuration of an inverted pyramid, fed at its apex by an open-wire feeder of a stipulated length. This feeder is coupled through a balun to a 52-ohm coax line that runs to a transmatch next to the transmitter.

The same issue has two suggestions on terminations for coax cables. Also, under its Brass-pounders column, it deals with the matter of realistic reports on radiotelegraphic contacts.

W5JJJ

ATTENTION ALL LADIES:

Would you be interested in participating in a local net, run by women with items of interest to women? Nothing will be needed except a call to Rosy Halley, 392-5486 or to Gloria Seignious, 722-1740. You will not need to be licensed to participate. Call and ask about this.

W5PAA/R

As I am sure everyone using the "25/85" repeater is by now aware, our new Mark 3C Repeater Controller has arrived and is currently in operation. The Mark 3C is a microprocessor controlled unit, and as such makes many "bells and whistles" available to us. Only a portion of the available features have as yet been connected; however, general repeater operation, as well as those features which are connected need to be discussed. I will attempt to do that here.

Basic Repeater Operation

Several time constants are used by the processor to insure that transmitter operation is proper and well behaved under various conditions. When a signal is first received a short delay will occur before the transmitter operates. The delay is too short to be observed without careful measurement, but it is long enough to keep noise pulses from activating the transmitter. Once operated the transmitter will remain on until the received signal disappears or until the transmission timeout limit is reached. If the received signal ends before the timeout limit is reached a five second tail sequence will begin. A quiet carrier will first be sent to allow time for breaking stations. After a 680 msec delay a short tone will be sent to indicate that the transmission timer has reset. Because the transmission timer is reset at the onset of this courtesy tone, stations are encouraged to wait for the tone before transmitting. Brief transmissions can, of course, be made without waiting for the tone if users realize that their total

transmission time is accumulating toward the timeout limit.

One feature of the Mark 3C which is especially appreciated by those who continuously monitor a repeater is the ability of the controller to discourage constant kerchunking of the repeater by lonely listeners seeking to relieve their boredom. To do this the controller evaluates both transmission duration, and recent repeater activity. With this information it can classify signals into four categories: noise, isolated kerchunks, repeated kerchunks, and valid transmissions. For isolated kerchunks the repeater transmitter may operate, but transmission will cease without either a tail or courtesy tone. Repeated kerchunks and noise will not cause the transmitter to operate at all.

No control system can totally eliminate the "kerchunker," however, the sophistication of the Mark 3C should quietly frustrate him.

Functions of the repeater controller are selected by different three digit Touch Tone codes which are listed at the end of this article.

Autopatch

In terms of timing characteristics the autopatch has a nominal timeout limit of three minutes. However, this is a flexible limit. That is, the timeout limits of all user functions including autopatch are automatically extended in 30 second increments if a received signal is present within the 15 second interval preceding timeout. Extension of the timeout limits can be repeated as necessary by the repeated application of received signal. This feature permits users to extend the timeout limits in emergency conditions without making it so easy to extend the limits that the feature is abused.

Once the autopatch is selected the dialing is done in accordance with normal practice. Calls initiated with the user autopatch access code (952) are restricted to having a maximum of seven digits and the leading digit may not be a zero or one. Attempts to violate these restrictions will cause immediate termination of the autopatch function.

Autodial

Autodial is similar to autopatch except that a single access code both activates the autopatch and dials a specific telephone number which is preprogrammed in the controller memory (listed at the end of this article). The autodial timeout limit is ten minutes rather than the three minutes of normal autopatch because autodial is typically used for quick emergency access to police and fire authorities, and extended timeout can be valuable in emergency conditions. As with other functions the autodial timeout limit is flexible and may be extended by the application of received signal as necessary. Autodial calls are cleared using the normal clear code (#52).

Touch Tone Pad Check Tests

The repeater controller includes a comprehensive set of tests to verify the proper operation of user Touch Tone pads. The controller recognizes all three digit row sequences (for example, 1,2,3) and the first three digits of the columns (for example, 2,5,8). Because of the special nature of the star key the fourth row digits must be entered in reverse order (#,0,*). This set of seven tests permits users to isolate faults in their pads to a single digit malfunction. When a group of three digits is decoded correctly the controller responds by sending the Morse letters OK on the repeater tail. The controller digital tone decoder is extremely accurate and sensitive and will frequently decode tones having a transmitted deviation as low as 1 KHz. When difficulty is experienced in getting tones to decode properly it is human nature to increase the transmitted tone level. More

often than not this is the wrong thing to do. Virtually all FM transmitters include limiters which prevent transmitted deviation from exceeding 4.5 KHz (approx). As limiting is approached distortion increases rapidly and distorted tones will not decode correctly.

Redial

Whenever an autopatch call is made the number called is temporarily stored in memory in the controller. The three digit redial access code (953) makes it possible to place another call, at a later time, to the same phone number without entering the phone number a second time. That is, merely enter the three digit redial code (953) and it will both activate the autopatch and dial the number from memory. Each time an autopatch call is made the redial memory is automatically updated so it always remembers the last number entered. For privacy the redial memory is temporary. It is automatically erased after 20 minutes of non-use.

One caution though -- if you enter an autopatch number incorrectly, redial will remember it incorrectly.

Morse Messages

Several different Morse coded messages are used to announce repeater status and other information. Most of the messages are sent on the repeater tail after a brief pause following the courtesy tone. The pause enables stations to carry on normal QSOs without being distracted by the Morse messages. If stations begin transmitting upon hearing the courtesy tone the Morse messages will occur only at the end of a QSO when the repeater tail is allowed to complete.

Tail messages are initiated in three ways: by user action, by control operator command, and by a change in repeater power source status. User initiated messages are sent only one time immediately following the user action (for example the OK following a touch tone test). Control operator commanded messages normally remain in effect until cancelled by a control operator. Power disturbance messages have the highest priority and will even replace the messages selected by a control operator.

The remaining Morse message is the identification. Identification is sent at least every five minutes when the repeater is in active use. However, ID timing is flexible and the ID will be sent early if a user transmission ends within 30 seconds of the five minute ID time limit. This flexible timing tends to cause the ID to be sent at the end of a transmission rather than while someone is talking. When the ID occurs at the end of a transmission the transmission timer is reset at the beginning of the ID so users need not wait for the courtesy tone. It is their choice as to whether they wish to talk over the ID.

Access Codes for W5PAA/R

Autopatch Access	952
Autodial Okla. City Police	(231-2121) 941
Autodial Okla. Highway Patrol	(424-4011) 942
Autodial Okla. City Fire Dept.	(235-1313) 943
Autodial Amcare Ambulance	(232-1234) 944
Autodial Okla. County E.O.C.	(424-4307) 945
Redial	953
Clear (Autopatch disconnect)	#52

Note: The star key (*) clears the digit buffer memory-- in other words, it forces the controller to forget tone digits already entered.

Much more information will be published as new functions are connected. Until then, we hope that this will get everyone going.

73, Bob Graham, WB5NSV

The Second Annual Wichita Amateur Radio Society HAMFEST will be held September 24 and 25 at the National Guard Armory in Wichita Falls Texas.

You can pre-register for \$4.00 if you get it there by September 21st. Send it to:

WARS HAMFEST, P. O. Box 4363, Wichita Falls TX 76308. Swap tables are \$3.00 each.

Recommended Motels Which Offer Discounts

Trade Winds, 13th at Broad 817/723-5533
Wayfarer, Expressway East 817/767-8505
Holiday Inn, 8th & Scott 817/723-4121

FOR SALE: Drake R-4-B, T-4-XB, MS-4 and power supply. Original owner. Very good condition. No scratches. Extra Xtals, all cables and manuals. \$425.00. Will consider good 35mm camera as trade. George, W5NTL. 789-4073.

C. Y. called this afternoon and gave me the news of the death of Ralph Hicks, W5BCO of Tulsa. He will be missed by many local amateurs.

FOR SALE: TA-33 Tri-band beam by Mosley with Alliance heavy duty rotor. Also Kenwood TS 700A All Mode 2meter with AC/DC power supply. Also one 13 element 2meter beam by KLM.

Phone 677-8537 WB5SVN Jack Iman

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W5JJ 5824 NW 58th St. phone 789-3788



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Minutes of August Meeting

There aren't any. The regular business meeting was replaced by the annual August watermelon party with the Aero. Center Club at the Bethany city park. The watermelons were good and so was the turnout (over 45 people in spite of the hurricane). Thanks to Jim, K5VRL, for making the arrangements and getting watermelons, to Jack, WB5SVN, for hauling them out, to Charlie, WA5JGU, for making the coffee, and to Ellard, W5KE, for replacing the busted light bulbs in the shelter.

Joe, K5JB, Sec'y

Ham Holiday...Great Time

Again, I would like to thank those who put in so much time and effort to make 1983 Ham Holiday a success. I had a great time. Since I had arranged to take the next week off to go to Oshkosh WI for the Experimental Aircraft Association fly-in, I was really ebullient over the weekend loafing opportunity. If there is time and we have room, I may get into the Oshkosh thing, but this is about Ham Holiday.

I have no complaints what-so-ever...specially after winning a prize in Sunday's drawing! The flea market had a lot of quality stuff and there seemed to be a few folks with some bucks burning holes in their pockets. My own purchases were meager but I did find the NE-51's at Ellards booth that I couldn't find at Dayton!

At the Oklahoma Repeater Society Meeting I agreed to find out why the ARRL was requesting that repeaters East of the Rockies use upright 15 kHz splits while those West of the Rockies use inverted 15kHz pairs. I thought the only place the upright pairs was prevalent was in the Northeast (like New York City). I have heard them and it is a mess if one is in a good receiving position. In this area, and in the surrounding states, we have agreed that the inverted splits make more sense. I imagine the Rocky Mountains are considered a reasonable barrier that would help reduce potential for repeater lock-up during band openings...but that is the only guess I can fathom why anyone would propose changing.

I am to contact our neighboring repeater groups and see if they have any opinions. I would also like to hear from any of you who care.

The turnout at the ORS meeting was pretty sparse considering that that group is the only council of repeater operators and users we have and most of the plans affecting repeater operation, networking, packet, frequency selection, etc., occur in that group. I know if Salem and I can pull away from the flea market long enough to attend the meeting, nearly anyone can. At least the competing attractions keep the meetings brisk!

There are two ORS meetings per year, one at Ham Holiday and one in a town away from Oklahoma City in the winter. I will keep you advised of the time and location of the next meeting.

Joe, K5JB

Transmission Line Z...Computer Program

While thumbing through the office mail I ran into an article in the Jul-Sept issue of EMC Technology magazine that caught my eye. The magazine deals with electro-magnetic compatibility and the article by Harrison described parasitic resonances that cause a circuit to radiate. Included with the article was a BASIC program containing routines for calculating characteristic impedances of twisted

wire pairs, having various insulation compositions, and acting as transmission lines. Equations for this set of conditions are usually very complex, or non-existent, because part of the dielectric surrounding the wires is air and part is not. It appeared that the equations in this program were possibly empirically derived so I keyed it in and tried it.

Just like some of the Amateur Radio magazine technical articles, the first problem was to get the thing de-bugged and working. There were some fatal errors in the listing along with the terrible reproduction of a mediocre dot matrix printing. After spending some time getting it to work, and verifying that the results agreed with some published catalog values, it seemed worthwhile to add a feature. An equation for coaxial transmission lines was added as an option since the dielectric values were already tabulated in the program. If I were to write this one, I would have done it differently (with data statements), but who would't.

The code is written in Microsoft BASIC-80 which should be easily converted to other machines by changing the "HOME" function to one that will clear the terminal display. (Radio Shack machines should work with "CLS".) If all else fails, delete the HOME's and let the display scroll. If the equations for the lines look a little strange, remember that they are generally expressed with log to the base 10. The BASIC LOG function returns the natural log (to the base e). Joe, K5JB

```
10 * CHARACTERISTIC IMPEDANCES
20 *
30 * CORRECTED AND MODIFIED
40 * TO INCLUDE COAXIAL CABLE
50 * BY JOE BUSWELL, K5JB
60 *
70 *
80 * (FROM JUL-SEPT 83 EMC TECHNOLOGY)
90 * RICHARD J. HARRISON
92 * FOR EMC TECHNOLOGY
94 * VER 0.2 15 MAY 83
96 * DON WHITE CONSULTANTS, INC
98 *
100 HOME:DEFSNG A-Z
110 PRINT"CALCULATE THE CHARACTERISTIC
IMPEDANCE
120 PRINT"FOR WHICH OF THE FOLLOWING
GEOMETRIES:
140 PRINT:PRINT" A. PARALLEL WIRES
150 PRINT" B. PCB TRACE OVER GROUND PLANE
155 PRINT" C. COAXIAL CABLE
160 PRINT:INPUT"SELECT: ",Q$
170 IF Q$="A" THEN GOTO 200
180 IF Q$="B" THEN GOTO 600
185 IF Q$="C" THEN GOTO 700
190 GOTO 100
200 *PARALLEL WIRES ROUTINE
210 HOME:INPUT"AWG WIRE GAUGE (10 TO 32): ",G
220 IF G<10 OR G>32 THEN 200
230 IF G<20 THEN:ON (G-9) GOSUB
800,802,804,806,808,810,812,814,816,818:GOTO
250
240 IF G>19 THEN:ON (G-19) GOSUB
820,822,824,826,828,830,832,834,836,838,840,
842,844:GOTO 250
250 HOME:PRINT"WHAT IS THE WIRE SEPARATION
260 PRINT:INPUT"IN INCHES";D:GOSUB 270:GOSUB
355:GOTO 370
265 IF G/1000 > D THEN GOSUB 950
270 HOME:PRINT"A. AIR B. POLY.
FOAM (TYP)
280 PRINT"C. CELLULAR POLY. D. TEFLON
290 PRINT"E. POLYETHYLENE F. POLYSTYRENE
300 PRINT"G. NYLON H. SILICONE
RUBBER
310 PRINT"I. PVC J. EPOXY RESIN
320 PRINT"K. MYLAR L. POLYURETHANE
330 PRINT:INPUT"WHICH MATERIAL SEPARATES
CONDUCTORS";ER$
335 ER$=ER$+"Z"
340 IF ASC(ER$) < 65 OR ASC(ER$) > 76 THEN 270
350 ER=ASC(ER$)-64:RETURN
355 G=G/1000
```

```

360 ON ER GOSUB
900,902,904,906,908,910,912,914,916,918,920,
922,924,926:RETURN
370 IF INT(D/G)=>3 THEN 500
380 Z1=120/SQR(ER):X=D/G:'CALC FIRST EQUATION
385 Z2=Z1*LOG(X+SQR(X*X+1))
390 GOTO 550
500 'SECOND PART OF EQUATION
510 Z1=120/SQR(ER)
520 Z2=Z1*LOG(2*(D+G)/G)
550 HOME:PRINT"FOR PARALLEL WIRES"G"IN. DIA.
560 PRINT:PRINT"SPACED"D"INCHES APART"
570 PRINT:PRINT"THE IMPEDANCE IS:" FIX(Z2)
"OHMS
580 PRINT:GOTO 955
600 HOME:INPUT"WIDTH OF PCB TRACE IN
INCHES:",W
610 PRINT:PRINT"HEIGHT OF PCB TRACE ABOVE
620 INPUT "GROUND PLANE (IN.): ",H:HOME
630 IF INT(H/W) < 3 THEN PRINT:PRINT"TRACE
WIDTH MUST BE AT LEAST" ELSE 640
635 PRINT"THREE TIMES THE HEIGHT ABOVE
GROUND.
637 PRINT:INPUT"TOUCH ENTER TO CONTINUE",Q$
:GOTO 100
640 GOSUB 270:Z0=(377/SQR(ER))*(H/W)
650 HOME:PRINT"FOR A TRACE"W"INCHES WIDE
660 PRINT:PRINT"LOCATED"H"INCHES ABOVE A
GROUND PLANE
670 PRINT:PRINT"ITS IMPEDANCE IS"FIX(Z0)
"OHMS":PRINT
680 GOTO 955
700 'COAX CABLE ROUTINE
710 HOME:PRINT:INPUT"INSIDE DIAMETER OF OUTER
CONDUCTOR";ID
720 PRINT:INPUT"DIAMETER OF INNER CONDUCTOR"
;OD
725 IF OD=>ID THEN 700
730 GOSUB 270
740 Z2= 60/SQR(ER)*LOG (ID/OD) 'LOG RTNS LN
750 HOME:PRINT:PRINT"FOR COAXIAL CABLE WITH
ID OF"ID"IN.
760 PRINT:PRINT"AND CENTER COND. DIAMETER
OF"OD"IN.
770 PRINT:PRINT"THE CHARACT. IMPEDANCE IS"
FIX(Z2)"OHMS":PRINT:GOTO 955
800 G=101.9:RETURN 'WIRE GAUGES IN 1/1000 IN.
802 G=90.74:RETURN
804 G=80.81:RETURN
806 G=72.1:RETURN
808 G=64.06:RETURN
810 G=57.07:RETURN
812 G=50.82:RETURN
814 G=45.26:RETURN
816 G=40.3:RETURN
818 G=35.89:RETURN
820 G=31.36:RETURN
822 G=28.46:RETURN
824 G=25.35:RETURN
826 G=22.57:RETURN
828 G=20.1:RETURN
830 G=17.9:RETURN
832 G=15.94:RETURN
834 G=14.2:RETURN
836 G=12.64:RETURN
838 G=11.26:RETURN
840 G=10.03:RETURN
842 G=8.928:RETURN
844 G=7.95:RETURN
900 ER=1.1:RETURN 'DIELECTRIC CONSTANTS
902 ER=1.6:RETURN
904 ER=1.8:RETURN
906 ER=2.1:RETURN
908 ER=2.3:RETURN
910 ER=2.6:RETURN
912 ER=3.1:RETURN
914 ER=3.1:RETURN
916 ER=3.5:RETURN
918 ER=3.6:RETURN
920 ER=3.7:RETURN
922 ER=5.1:RETURN
924 ER=7.1:RETURN 'NOT USED BY PROGRAM
950 CLS:PRINT:PRINT:PRINT"WIRE DIAMETER >
DISTANCE IS IMPOSSIBLE"
955 PRINT"TOUCH ANY KEY TO RESTART"
960 Q$=INKEY$:IF Q$="" THEN 960 ELSE 100

```

Big Time Radio Direction Finding

The most recent issue of Technology Today, published by the Southwest Research Institute, had an interesting article about a low cost

emergency search and rescue radiolocation network developed for the U.S Coast Guard. The design is similar to one generally wished for by those who are interested in radio direction finding and that sort of thing.

The system, installed in the Cape Cod Bay and Massachusetts Bay areas, consists of three receiving stations equipped with microprocessor controlled Adcock direction finding antennas linked to downtown Boston with telephone lines. Azimuth information is digitized and transmitted along with the audio recovered from a distress signal. Azimuth information from any two receivers is used to automatically compute the source location. The claimed accuracy is 95 percent and range is 50 miles from the receiving stations.

The DF station can be operated at any frequency in the range of 100-500 MHz. The main claim to fame is that the system is reported to be simple, maintenance and operations costs are low, and reliability is high. Joe, K5JB

Oshkosh B'Gosh...A Flying Story

I sure am glad there was enough room on this page to rattle on about the flying vacation to the Experimental Aircraft Association fly-in at Oshkosh WI. Joe, WA5FLT, and I met at the airport early the morning after Ham Holiday to head out for a week of adventure that is to pilots what Dayton Hamvention is to amateur radio operators.

It was wheels up at 8 A.M. and a blue bird day, not a cloud in the sky. Joe seemed eager to find out how to run that airplane, so I let him...all the way to Oshkosh, and a few days later, all the way back. He did a creditable job of taking off (going both directions) from our refueling stop at Ottumwa IA, and I think he really has the bug now, at least he sure was asking the cute little sales gal at the Cessna booth a lot of questions.

Of course there are a lot of home-built aircraft at Oshkosh, but there are a lot of all kinds of aircraft there too; in fact, there is a whole lot of everything at Oshosh, especially people...estimated 800,000!

If you can imagine the state fair expanded to cover Will Rogers airport, you got the idea.

We started our days at 6 A.M. and got back to the house about 10:30 P.M. each night and I don't think we looked at anything twice. In fact, now that I'm back, I can think of a couple of things we failed to look at, though Joe would probably wonder what the heck it could have been. Every day about 3 O'Clock the airshow started with high caliber pilots like Bob Hoover, Duane Cole, Corky Fornoff, and the Canadian Snow Birds putting airplanes through their paces. Everybody gets into the act. Noone rolled a 747 this year but the Air Force surprised everybody with a low pass of a KC-135 and three fighters in refueling formation. Whenever we started to get a little pooped, we would catch the flight line bus and sneak off to our airplane where we had a cooler of refreshments and lounge furniture stashed.

One day, Joe set his camera and tripod across the field where the airplane was parked and took a bunch of pictures of the airshow planes coming and going. Monitoring the tower radio frequency added a new dimension in keeping us informed of surprises. Joe should have a bunch of good pictures.

We chose to leave on Thursday afternoon when the weather went above IFR and had the pleasure of taking off at the same time as a B-17. The visibility was pretty poor so we only spotted (and dodged) a couple of planes while leaving. (One a T-6.) I have been averaging about one trip every two years so I hope Oshkosh 1985 is as good. Joe, K5JB

Coming September 1st, 7:30 pm
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FEAR GROWS: HAS ZEDD BOUGHT THE FARM?

Horror and consternation mounted around the world this week as silence continued to surround the whereabouts and fate of the magnificent Q. R. Zedd and his party of DXers in (or somewhere near) Vietnam.

President Reagan personally wired the premier of Vietnam weeks ago, pleading for word "in the interests of humanity and DXers everywhere." Vietnamese officials expressed what seemed to be sincere worry, but kept mum, and also arid.

Zedd flew to Vietnam to activate XV in late June, attended a number of official functions, prepared his equipment, and vanished with his companions into the jungle near the Cambodian border on or about August 3.

With him were Bill Buckeye, Columbus, Ohio, DXer who recently claimed a world record by getting someone to talk to him while he had Woody Hayes in the shack; Boris Badenov, famed Russian DXer who claims to have worked Long Delayed Echoes from Marconi; Bill Blast of the great Blast Off DX Net, and Mrs. Constance Wilhelmina Zedd, Q. R.'s momma.

It was reported by United Press International that pirates from Cambodia swarmed across the Vietnamese border near the spot slated for the Zedd expedition about six hours after Zedd & Co. should have pitched their camp. In a confusing series of events, Vietnamese regulars stormed the area and there was a firefight with Chinese troops across that nearby border. To make matters worse, there was a solar flare at 1705Z on the same date, rendering HF communications all but inoperable for several hours.

A team from the international Red Cross visited the remote jungle valley, site of the DXpedition camp, four days later. They reported a pitiful sight. The ground was cratered and the trees burned to the ground. Shreds of plastic from tents were found, along with approximately 400 Coors beer cans (all empty) and several empty Twinkie crates. Officials took these clues as a sure sign that Badenov, known worldwide for his epicurean tastes, had been present.

Officials from all involved countries exchanged apologies and mortar fire over the incident. The ARRL announced plans in Newington for a rescue expedition, but said it would take about two years to get it organized. A one-man team from 73 Magazine visited the scene a week later, and W2NSD/1 reported that the humidity made his Casio wristwatch stop. He wrote 3,200 words about this phenomenon.

In Washington, the FCC announced not to worry, its new no-code license plan would soon make the bands so crowded that DXing would be impossible anyway. The Social Security administration stopped sending payments to Momma Zedd's house in Mena, Ark.

Members of Zedd's home radio club, the South Canadian Amateur Radio Society, set up around-the-clock vigils on all bands, all modes, all frequencies at the club station in Norman. It did not work out very well. Nobody showed up.

A prominent Norman physician, Dr. Waldo Garp, speculated that the DX group could have escaped the terrific bombardment in the area, but noted that no one in the party had had recent malaria or typhus shots, and the beer must have run out ages ago. He said that even well-conditioned radio athletes such as those in the expedition could not be expected to last forever without food, water, and regular exposure to RF.

Newsweek reported that a helicopter search was under way over a broad area. TIME

Meeting of the 11th of August. A talk of how the changes made to the National Weather Service will affect the amateur.

Dwight, WA5KRH head of CD in this area and other weather watchers know that we will have our work cut out for us in the future. A tightly controlled net under direction of one station will be only one of the answers to the questions to arise. It will be hard at first but I feel that if we all work together it will pay off for all. Not only the amateurs but for the public who count, and monitor us as well.

Enough of that. It was mentioned that the Ice Cream will be served on the 20th of August and invites will be in the mail, thanks to WB5UMH, Deanna.

Covered was the hamburger feed, this will occur on the 17th of September, starting at noon. The location will be put on the 19/79 machine.

Attendance at the meeting:

WB5UMH	Deanna	WD5BBD	Paul
WA5ZFI	Keith	K7BSY	Shorty
N5FQR	Herb	XYL of Herb,	Billie
KA5KVU	Dennis	K5KCJ & XYL	Frank
W5UVX	Les	WB5KRH	Dwight
KB5LS	Jim & Son	C.W. Friend of son	

of Jim. You work it out.

That's it. Now to pack for Florida.
de Les/W5UVX

magazine plunged the local amateur radio into profound gloom by running Zedd's obituary in its issue of August 20. They misspelled his name.

At the ranch, Tondelayo Schwartz, Zedd's nubile, blonde, 20-year-old QSL secretary and erstwhile bride, went into seclusion with two OU football players of her choice. The friend of Badenov, Natasha Bullwinkle, was seen on Norman's main street wearing a black see-through mourning shroud and a grocery bag filled to overflowing with DingDongs. That Natasha should have changed from yellow (Twinkies) to black (DingDongs) was considered a bad omen by the community. A member of SCARS, identifying himself as the club reporter, asked Natasha about it. She stuck him with her knife.

"I can't believe he might be dead," said K5KDR, president of SCARS.

"He was a great former Martian," commented EC AF5X.

"If he's really dead, I want a road map showing me how to get to the ranch," W5SQJ commented. "I heard he has a great station and I want to be the one to junk it out."

Hope generally was not lost, however, and the bands were filled with hopeful amateurs calling his name: QRZ?

Meanwhile, in Southeast Asia, the rainy season was approaching. The world, as they say, watched and waited. Could the greatest, truest, finest, DXer ever lived really be gone, taking Badenov, Blast, Buckeye and Momma with him? Could fate deal us such a blow?

The vigil continued at press time.

-- KU5B



COCO

AUGUST Minutes

Club Officers

PR - Bob Langmacher - 352-4059
VP - Tom Stott - 324-5086
SEC- Bill Wright - 341-6076

Meeting Place

Red Cross Building
10th and Hudson
First sat. at 9AM
Dues \$5.00/year

The meeting was called to order shortly after 9AM by, VP Tom Stott, Bob Langmacher the President being absent.

There was a very nice round of introductions this meeting, everyone was asked to stand and give his/her name, general local and some uses they put COCO too. It seemed like most of us are fighting the kids for computer time! I counted 51 as the intro's went around and three more came in after that so we had 54 people present. That's great for August, one of the vacation months. While I'm on the attendance, there is an area here that needs work. There was only four ladies present, while I was proud to see them, it would greatly enhance our club to not only have the ladies attend but take part. Lets all work to see they feel like part of the club.

Again in the Software/hardware department another 6809 processor was reported to have failed. Although I did not hear Bill Courtright said why or how his failed, there was immediate discussions about plugging or unplugging anything in the ROM PACK port with the computer still powered up.

Bob Graham reported on his motherboard project (a Motherboard gives you more ROM PACK ports and they are selectable). His board is 99% complete, just waiting some connectors, and what happens -- Radio Shack announced they have one for \$179.95. Bob said for us kit builders, the cost to build his interface should not be over \$100.00. Bob also has Video Monitor, for those interested his number is - 677-8685

Bob Pace had one of the new Micro Color Computers to show off. It generated a goodly discussion about it being compatible with the COCO. It appears that it's cassette routines are compatible as long as the basic program you are trying to load are compatible (uses only commands the Micro COCO understands). ML programs are not compatible from one machine to another. Bob has some Shugart 400L bare drives, if you want a disk you might should call. # 376-3569

Jim Cantrell informed the club that he has been running simplex on 146.70 MHZ, and the call up for his station is M5OHU. What, you didn't understand that! Well don't feel bad, I got it wrong the first time too. What Jim did was this -- put a bulletin board on the radio instead of on the telephone. If you connected your computer to a ham radio and call M5OHU on frequency 146.70 MHZ, Jim's station will answer on the same frequency. I would like to see South Western Bell charge Jim for that?

I had a joystick from an Atari 5200 to show around. Although I have not connected it to the COCO as yet, I intend to soon. It looks as if it could have great possibilities. It has a push button number pad, fire buttons on both sides and Pots (I have't checked their value yet), not switches like most Atari's.

Some other changes in our community were reported: Curby Keith, the person most us

purchase diskettes from, is out of business. He has passed the business on to Jere Kepford, who will sell diskettes to club members at the same price as Curby. The store location has changed, closer to me thank goodness, it is now :

DMS 1533 SE 66 st. PH. 670-9600
Suite A OKC

Two people mention they had a Line Printer VII for sell, one was Jim Lacost, I missed the other persons name and I do not know Jim's phone number.

I might put in a plug here for the C&E. If you have some for seller trade, put it in writing and give to me at the meeting and I'll see it gets in the C&E. That is a service the C&E does at no extra cost to you.

New members were given a cassette with public domain programs and this month something new -- a door prize drawing. We gave a six plug power strip away and I forgot to get the winners name. Sorry I'll remember next time.

The floor was relinquished to Ron Hilbun for the program. Ron made an excellent presentation on Keyboards. During the question and answer period, Jim Lacost mention that he did not like the placement of some of the keys and wanted to know if they could be moved. The answer is YES. Either with software or hardware!

HARDWARE: If you want a permanent solution, then cut the traces loose under the keys to be moved and rewire the board. The key tops can be moved by taking the board apart. Care should be taken here, it is not difficult, but the board has many small parts, so work on a table or other large surface.

SOFTWARE: There are several programs that allow the reprogramming of keys, one of these VERSAKEY, is the review program this month.

Bill Wright and Bob Langmacher will give the program for the SEPT. meeting. They are going to review the program HOMEBASE. Homebase is a DATA BASE and EDITOR all in one, it is the program that is used for the club roster.

Tentatively the program for OCT. will be by Jim Lacost on an accounting package he uses in his business. I did not get the name of the program but he did say it does accounts receivable and payable.

Some future programs planned are on printers and having a representative from the Telephone Co. talk on Modems.

A great deal of excitement was generated by a discussion about the possibility of Machine Language classes. Ron Hilbun is looking into the availability of class rooms, courses, time, possible college accreditation and instructors for such classes. Ron will give more details at the SEPT. meeting.

The first Saturday in SEPT. is Labor Day weekend, so the meeting will be moved to the second weekend or Sat. 9,10,83. See you there, Holly.

VERSAKEY REVIEW

This program is for all the people that have those new professional keyboards with four extra keys. I ordered mine from Micronix Systems Corporation and have been using it for about eight months now, so can say just how good it is.

At the time I ordered mine, the ad said they would send a program to allow use of the extra keys on the keyboard. It seems like they may have forgotten me for I still have not received the program but several friends have.

I guess they will not care if we help spread the program around to owners of Micronix keyboards, being as how it come free with the keyboard. I saw an ad in the AUG. issue of Color Computer magazine, offering Versakey for \$9.95. This must be because the program will also program any key on the keyboard, not just the four new keys. Continued on next page

LOADING:

16K - CLEAR 200, 13312:CLOADM:EXEC
32K - CLEAR 200, 29696:CLOADM:EXEC
64K - CLOADM:EXEC 16271

NOTE The F1, F2, F3 and F4 keys referred to here are the four extra keys on the Micronics keyboards. You may need to program a key for the define (F1) and CTRL (F4) keys.

TO DEFINE A KEY:

A. Press F1. The computer will respond "DEFINE".

B. Press the key you wish to define. Note: F4 acts as a CTRL(control) key. CTRL works the same as SHIFT, that is, to enter CTRL-A, hold down F4 and hit the A. This allows each key to generate four different things (unshifted, shifted, with CTRL, and with shift CTRL). Except for F2, F3, and possibly down arrow, it is not normally desirable to define a key in its unshifted, unCTRL'ed form, since the normal function of that key is then lost.

C. The computer will print a 3 digit number which identifies the key or key combination (with shift or CTRL), followed by "AS:"

D. Enter the string you wish to define the key as. RETURN's (ENTER's) may be embedded, allowing multiple command lines to be entered with a single key. Character codes not able to be generated from the keyboard directly may be entered in Hex, if preceded by a \$. To actually enter a \$, enter two \$'s in a row (\$\$).

E. When finished entering the string, type F1 again. Normal input may then be continued.

F. From now on (or until you redefine the key), typing a defined key will generate the string you defined it as.

EXAMPLE: DEFINE CTRL-P as PRINT

- 1- Press F1. computer responds "DEFINE:"
- 2- Hold down F4 & press P. computer prints "144 as:"
- 3- Type PRINT & press F1 again.
- 4- String is now defined. To generate it, hold down F4 & press P.

Miscellaneous notes:

A. This program does not alter the codes detected by the INKEY\$ function; It will continue to use the original ones.

B. The program provides auto repeat. to make a key repeat, hold the key down for more than half a second.

C. Type ahead is also provided, but will not work reliably during cassette and disk I/O.

D. Using the top of memory value given in the CLEAR statement above, exactly 1K of string buffer memory is reserved. if this value is altered, the program will automatically use whatever space is available.

E. The program may be saved with defined strings intact using CSAVEN with the following addresses: Start &H3400, End &H3FFF, &H3C6A. For 32K, add 16384 to each of the above addresses. For 64K, load and execute as if for 16K, define the strings, and save it off with the EXEC address = &H3F8F. If you use a different top of memory address, change the start address accordingly.

F. For 64K, the start address (default = &HF000) and string buffer start address (default &HE000) are read from locations &H3B49, &H3B4B respectively. These may be changed if desired.

G. Redefinition of keys may be prevented by defining the DEFINE key (F1) as something else. The default code of the DEFINE key is &H1F.

H. The program may be saved to Disk using the addresses given in 'E'.

I have only had Versakey for a week now, so have not used it extensively but there does seem to be a bug or two.

The biggest is I can't get anything to load from the disk when Versakey is in the computer. This may just be operator trouble. If someone finds a way to load from the disk after Versakey has been EXEC'ed let me know.

Another one is the repeat feature. For the most part this feature is just great but when defining a key it can and will get you in trouble in a hurry. What happens is after you define a key, you must hit (F1) to enter the

defined key. If you hold F1 down too long it not only enters your newly defined key but will come back to define since you are still holding F1 and then wants to define F1 itself! When that happens I can't get the program back -- it starts printing 'OK' over and over. Versakey has great possibilities, but without the ability to use the disk system its use is limited, at least to me.

Take care and happy computing.

MOV - TRANSIENT PROTECTOR

M O V -Metal Oxide Varistor.

To make a long story short, a varistor is just a resistor that will change its resistance in relation to the Voltage applied. At 120 volts (normal household voltage), the resistance is very high but will drop rapidly as the voltage increases. This high voltage or spike traveling down the wire toward your computer, gets shorted out at the Varistor due to this drop in resistance.

You've seen these spikes on the TV screen when a mixer, microwave or the air conditioning unit comes on. For the most part these types of harmless spikes are too fast for a varistor, that is to say they do not exist long enough for a varistor to react. Why are you installing a varistor then? It is to get the bigger spikes that will damage the computer. For instance a lightning strike in the neighborhood. Now I don't want you to think the little thing can protect against a direct lightning strike -- it can not. There are many other kinds of voltage spikes that will damage electronic equipment however and the varistor is a worthy addition to your computer or radio station.

A cost efficient Varistor (cheap), is Radio Shacks # 276-570, at \$1.59. You may have to call several stores to find one, I guess it's a hot item. The cheapness is in the price not performance. I've seen some prices close to \$10.00, so this one is hard to beat. If you can get one cheaper go ahead, I'm not trying to sell anything in this article just show you how to install it safely.

INSTALLATION

A. **DANGER** First remove power from whatever you intend to install the varistor in. If it is to be installed in a wall receptacle, turn the power off at the breaker box. You can check power with a drill motor, mixer or drop light if you do not have a volt meter. If it is in a plug strip or other device that can be unplugged then please do so.

B. Remove receptacle from wall or open up plug strip so as to see the screws that connect the wires to the device. You will notice that the wires are a different color, one white, one black (the black wire may be any other color, ie- red, blue and so on) and one bare (no insulation) or green. You may or maynot have the bare wire in your installation depending on the age of your home. In any case you will not be using the bare wire or green wire.

C. Remove your varistor from its package. You will notice the two long wires protruding from a round case. One of these wires will attach to the the screw holding the white wires in the receptacle and one to the screw holding the colored wire. The polarity does not matter, you may turn the varistor any way you wish.

Note - Make your connections secure. Wrap the wires from the varistor around the screws holding the electric wires in a clockwise direction. this will keep them from unwrapping as you tighten the screws. Do not over tighten.

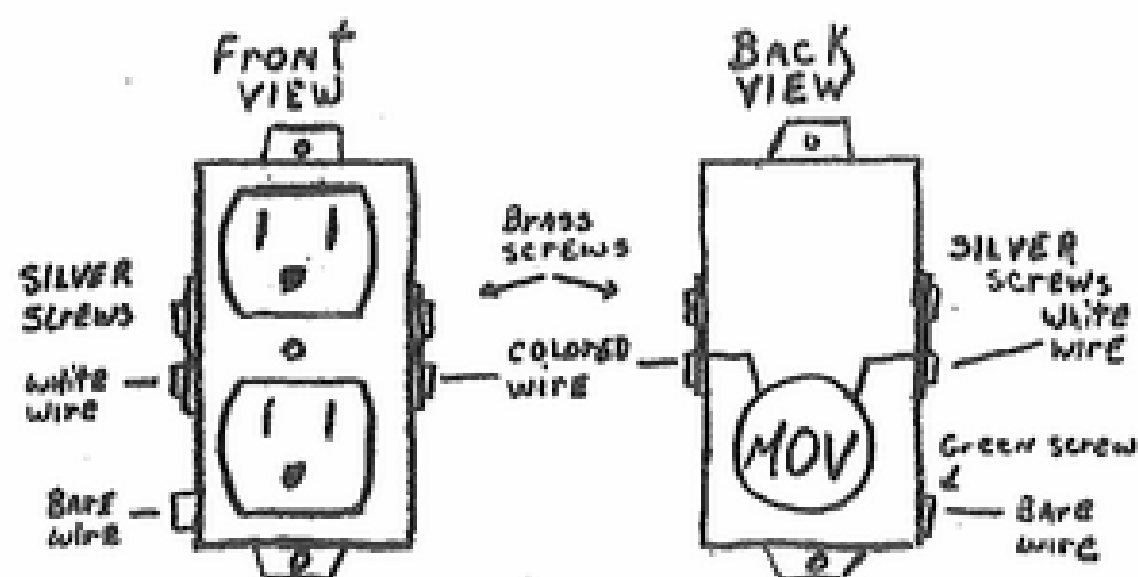
If you are installing the varistor in a plug strip you may have to attach it directly to the wires as most strips do not use screws on the receptacle.

Continued on next page --

D. Reinstall the receptacle in the wall the same way you removed it. Turn the power back on.

This is not hard or dangerous and can be done in about five minutes. Just mind what I say about turning off all power (Electricity) to the receptacle before touching it!!

I've attached a drawing that may be helpful.
Holly



COCO HINTS

If you would like a hard copy of your disk directory, try POKE 111,254:DIR. This will cause the DIRectory to be printed on the printer. This works fine on my Line Printer VIII, but Todd said it would not work on his Line Printer VII.


One more tip on the RFI that shows up on the TV screen from time to time. Try taking the cable that runs from the computer to the TV and making a small coil (two or three inches in diameter), wrapping it with tinfoil and touching around the TV until you find a place that helps the interference. Attach the coil to that spot.

Both of the above Tips came from RAINBOW Magazine. Oh, RAINBOW Magazine is putting on what they call RAINBOWfest, down at Fort Worth. This is a convention for the COCO. They are even going to tour the Radio Shack plant. RAINBOWfest will be OCT 14-16 at the Hyatt Regency in Fort Worth. For more details see a RAINBOW Magazine.

For a COLD start try POKE 113,0 (ENTER), (EXEC) 40999. This is like turning the power off and back on --- you will lose whatever is in memory.

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"WHAT DO YOU SAY TO A NAKED LADY?"

The last words I heard Pat Shockey say to the models at the Style Show '83 during Ham Holiday were, "Naked Ladies, you did a good job!" This was shouted through the open door of the mobile home being used as a dressing room as the women were taking off the finery provided by Rothschild's and donning their usual attire to return to the Myriad. After a prompt start at high noon on Saturday, July 30 in Kerr Park, the models had zoomed through two changes each and were breathing sighs of relief that no one had passed out in the Oklahoma sun while modeling sweaters, ski suits and ultrasuede coats.

Lee, W5HLZ had provided the mobile home as well as the sound for the show. Facilities were arranged by Reo, KE5CQ who experienced a small problem before the show with an electric hookup for the trailer to provide the much-needed air conditioning for the models. Also, the police showed up to complain about the trailer being parked where it was, etc. However Reo had talked to the right officials and it wasn't long before the gendarmes went away quietly.

Mrs. Bobbi Williams had put the show together, having had only two weeks notice, and found that Rothschild's Crossroads store would provide the clothes and Pat Shockey, well-known fashion and TV personality in OKC, to narrate the show. Of course Fred, KA5CXW was the main instigator, having talked his friend Bobbi into doing the show and getting volunteers to bring cookies for the Hospitality Room at the Myriad. Fred also recruited the recruiters--Vicki, N5DLM, from OCAPA; Rosie, KA5ODI, from Aeronautical Center; and Rosemary, XYL of Ken, K5VVZ, from MORI.

Bobbi's models, drawn from nearly every club in the Metro area, were:

Vicki Adkins, N5DLM XYL of George, AD1S
Judy Macdonald, KA5BJS XYL of Mac, K2GKK
Barbara Macdonald daughter of Judy & Mac
Debbie Guschke, XYL of Chuck, N5SW
Barbara Israel, XYL of Henry, N5IH
Sue Wilhite, XYL of Chuck, K5NK
Lois Duck, XYL of Don, AE5N
Lois Skipper, XYL of Bill, KB5BS
Jeanette Eason, daughter-in-law of
Rosemary & Ken Eason, K5VVZ

Linda Van Buskirk, FAA employee for ACARC
Julie Teachman, daughter of Doug, WODXA
Marsha Rogers, XYL of Bob, WA5EEZ
Rocio Garcia-Rivas, an exchange student from Spain staying with Bobbi.

They were all lovely, and super models. Bill, KB5BS manned the microphone at the park and called for models to come out of the trailer in groups. I, lucky person, got to stay in the cool trailer and relay Bill's calls by 2 meters to the models while zipping their zippers, taping up hemlines, helping to pull off stubborn blouses, etc. It was a case of humorous pandemonium in that trailer.

After Rothschild's styles were shown, Hua Iman, XYL of Jack, WB5SVN and I got to model Red Cross fashions. The uniforms we wore were the old and the new of Red Cross uniforms. Hua and I drew the easy duty. Those uniforms were cool!

The show went smoothly, quickly, and people enjoyed it. Special thanks to Lee, W5HLZ for the use of his very nice mobile home and for providing soft drinks in his refrigerator for the models after the show.

Don, AE5 took snapshots during the show which he showed at the dance after the banquet Saturday night. I really think he should buy XYL Lois those beautiful things she modeled, even though their pricetags would add up to enough to buy a brand new HF rig or computer, don't you?

Bobbi and Fred, you did good!

N5CTT



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OK DX

De AD1S.

Wow! Ham Holiday was alot of fun and big crowds again this year assured fantastic prizes and loads of fun for everyone.

Thanks to the DXer's who attended the DX forum; I hope everyone enjoyed the slides of our 1982 trip to Micronesia. Vicki and I are always happy to narrate the slides taken on our DX trips for any interested group, including radio clubs or other social organizations.

The August OK-DX meeting was a success at Fred Gang's restaurant. After a slow start, the service was good and the food was ample. Love those free munchies! It was unanimously decided to hold our September meeting again at Fred Gang's Restaurant, N.W. 39th Street between Meridian and MacArthur Blvd. Stop by anytime after 6:00 PM. If you get lost, ask the hostess for the "DX Group"-- she will direct you to our darkened table... Hi.

Plans are moving along well for our "Grassroots DXpedition 1983". In case you have been living in a cave, we have been organizing a DXpedition to Jarvis Island in the Central Pacific. This will not be a picnic, since Jarvis is a deserted, barren island about 1200 miles SSW of Honolulu and 240 miles WSW of Christmas Island (T32), Republic of Kiribati.

Jarvis is inhabited by about one million terns, boobies, gulls and similar seabirds, a few feral wildcats and lots of curious Hermit Crabs. For a few days in November, we hope to liven up the night life at this spot on the Equator.

Listen for AD1S/KH5 probably around November 5, 1983. QSL Manager will be AD1S. Operators will be AD1S, Oklahoma City; H44SH, Stuart of Honiara, Solomon Islands, (Stuart also is G6VUO); WB2MOE, Stuart of New York City, (This Stuart was an operator on the IDXF DXpeditions to Navassa, Desecheo, St. Peter & Paul Rocks and other rare spots.); and WB2KXA, Jim of Allentown, NJ (Also an IDXF operator and officer).

The hams will be taking along a U.S. Department of Interior biologist on the trip. It seems that Jarvis is a Wildlife Refuge, thus requiring a Special Use Permit for any ham operation. Well, we have the Permit, and in return we agreed to take the biologist along to study the bird and wildcat population while we hams "study worldwide propagation."

We are taking four solid-state rigs, beams, verticals, dipoles, generators, and related gear for a planned 4 day stay on the 2 square mile sandbar. The team will fly from Honolulu to Christmas Island via commercial airline; from Jarvis Island we sail the final 240 miles in a chartered vessel.

We still need one Icom 730 or Kenwood TS-120 transceiver as a back-up rig for the trip. If you have a spare 730 or 120 and power supply that you can loan for 2-3 weeks, please contact AD1S. All gear used on the trip will be insured against loss or damage.

SPECIAL MEETING DATE FOR OCTOBER: Our DX friend, H44SH will be visiting Oklahoma City for a week in late October (en route to the Jarvis Island trip) and we will re-schedule the October OK-DX meeting in order to share the meeting with Stuart. Hopefully, we will have an exact date in time for the next Collector and Emitter; if not keep listening and we'll pass the word on the various 2-meter repeaters.

Many local DXers have Stuart's QSL on the wall as their Solomon Island DXCC credit. Plan to come out for the October meeting to meet Stu and swap some DX stories.

ON THE BANDS

XU - CAMBODIA (KAMPUCHEA) is apparently alive and well, having been heard around 0200 UTC on 21.295 Mhz. This is a JA operation, and most contacts have been with Japanese operators. However, some contacts with the Fifth, Ninth and Zero U.S.A. call areas have been made. Listen carefully and scream like crazy if you hear any of the three XU stations reported to be active.

T2 - TUVALU is not rare, unless you don't have it. T2ADE was heard several times on twenty meters, particularly around 14.160 and 14.185 between 0830 and 0930 UTC. The operator's name is Chris and says to QSL direct to P.O. Box 5, Funafuti, Tuvalu.

5B - CYPRUS has been represented recently by 5B4IR and 5B0JE. Listen around 14.195 and 21.300 Mhz between 0200 and 0300 UTC, depending on propagation.

T30, T31, T32 - KIRIBATI REPUBLIC (pronounced KEER-E-BAS) should be a easy one over the next few months. First, Doug Blythe, T30DB will be stopping on all three areas of the Republic on his way BACK from a business trip to San Francisco. Doug works for the Kiribati government, so transportation on the National Airline should not be a problem for him.

Second, JH1RNZ has announced a vacation trip to Tarawa (T30) and Christmas Island (T32) beginning around August 22, 1983 and continuing through the first week of September.

Finally, don't forget the Jarvis Island DXpedition will use Christmas Island as a launching spot for its trip. A T32 license has been requested and should be announced prior to departure.

HK0 - MALPELO is still "GO", according to the 20 meter scuttlebut. The announced callsign will be HK0TU, and some restrictions on QSLing-- apparently one QSL per envelope with three IRC's required.

MISCELLANEOUS-- We recently spoke with Ed, W4MGN and he regretted that no operation was permitted from Burundi or Senagal during his recent trip to Africa. Ed is a linguistics expert and takes field trips each year to study exotic dialects; thus his repeated appearances in some rare and unique locations. Next year, Stillwater is on his agenda. Hi.

See you at the September meeting of OK-DX. 73 de AD1S.

NEXT MEETING:
SEPT. 12, 1983

Salem

HOWDY HAM HOLIDAY!!!

I generally put a cap on the Hamfest season at Ham Holiday. Not that I save the best until last, for that title certainly goes to Dayton, but in actuality, Ham Holiday is very enjoyable because of all the friends that I see and its close proximity to home. Finally, toward the end of the year, I find a hamfest that doesn't require a plane ride, both commercial and private. A hamfest that I can leisurely saunter to my car and drive for about 25 minutes and arrive at the site. I can also make my regular Saturday morning doughnut schedule at the Doughnut Stop in Norman (food for the Gods, when they send for doughnuts and pine cones from Mount Olympus they send to this place) and still make the flea market before they drop the rope.

The Hamfest season is actually open all year if you have enough courage to travel the distance and brave the cold in the outdoor flea markets. The Dallas sidewalk sale has seen many a street vendor pounding the pavement with snow swirling around. I have been down to Big D for these concrete merchandising shows and it was so cold that even the crystals in the can were chattering. My half life in the flea market is cut considerably by chill. Heat I can live with. It must be my lot in life that one day or all three days at Dayton will be played out in the full blistering sun. I can remember one year in Dayton when it was so cold that the best I could do was hang outside for an hour or so, then dash in long enough to get warm, then back outside. It was so cold that I had to stroke the icicles out of my mustache. And, of course, I had forgotten the gloves in the other coat at home. Fortunately, the Dayton Fleamarket being the overall bobastic sale that it is, I found an enterprizing fleamarketeer selling work gloves for only \$3.00 apiece. (The lady could have made a fortune, but fortunately chose to be a social worker). These, at least, allowed me to handle the merchandise and take my hands out of my armpits.

Regardless, the season starts for me with Dayton. This is the granddaddy and goes without saying. I generally pickup with Dallas Hamcom because it is a lot of fun and combines with one of the sidewalk sales. Finally, the local Ham Holiday forms a cap on the activities. Oh, there has been a year when we squeezed in the Atlanta Hamfest and it was quite a lot of fun, but it is just a little bigger than Dallas and the trip is a lot farther away in distance. Thought about making the national ARRL convention this year, in Houston, but for some reason, I can't believe that it got scheduled over the same weekend as the OU/Texas game. And they did that in Texas, no less!! It is bad enough that Houston has six inches of glass in the street from the hurricane, that won't be nothing to what happens on Commerce Street down in Dallas. There surely must have been somebody down in Houston that was going to the game who could have simply said, "Whoa there boys, do you realize what weekend that is? Yall best pick someother time." But like they alway say, "No guts, no glory." And if Dupree is still on the mend, I may wish that I went to Houston for the convention.

Hamfesting can be serious business. For some of the commercial vendors (and an occasional fleamarketeer) it is dollars and jingling bells (or make that beeps) of the cash registers. There is a real symbiotic relationship here between the hamfest organizers and the commercial vendors. To a town like Oklahoma City that is left without the benefit of

a commercial amateur radio outlet, the tendency and temptation is to buy from the mail order outfits. But some radio equipment is quite expensive and few people buy these goodies sight unseen. I can say from experience that twirling the knobs and flipping the switches is a mandatory ritual. I really believe that manufacturers of amateur radio gear design it for hamfest consumption, that is, the gear must look a particular way or the amateur will not buy it. And the "looker" test comes at the hamfest. Some people may not be as concerned with technical operation as they are with physical symmetry and height so that it doesn't reach above the other equipment on the table. But the real proof in the pudding is the physical inspection and the hamfest is the first line attack.

It seemed like the crowd at this year's Ham Holiday was larger than last year, but I really don't know. What is amazing to me is the number of people who stay around for the Sunday drawing, but this is to be expected considering that there are few dollars that are collected that are not spent on prizes. The formula followed the very successful results received from the Terroma Hamfest. Spend all the dollars you could on prizes after paying all your expenses and setting aside a startup nest egg for next year. Nobody makes a profit and as much money is returned to the attendees as possible. The flea market was a lot of fun and I saw some things that I really would have considered having, but unfortunately somebody beat me to it. Somebody had a nice looking Motorola MSY repeater with duplexer all tuned up and ready to go in the cabinet and it was immediately snatched up by WIGOM. That guy can be dangerous with a checkbook. Roger and I had talked about getting a table to set up in the Flea Market so I ordered one with my preregistration. The plan was to get up early and hit the Doughnut Stop. (Some things just don't change the normal rituals) then swap cars for the JXX Van and transfer some goodies for sale for the trip. Roger had a new dolly for the formal equipment moving. It was already starting to get hot as we headed for the City. The Rip City Parking Company was already in business, busily extracting dollars from entering motorist hams. Dollars that might have been better spent on equipment. And perhaps the worst thing is that they would not stamp our hand so that we could get back into the dance in case we had to leave. I saw a letter of praise for the City's assistance last year, combined with a gentle complaint and veiled threat regarding this same parking pécadillo last year. The OKC mayor's gentle reply apparently provided no assistance to the put out parkers. One solution is to just park on the streets, if a place can be found. This is not always the case when a parking jam exists outside as well as inside. Oh, well, the facilities are still superior and the way I save the charge for the second trip inside is to just eat lunch in the downtown area. In this particular instance, in order not to enhance the city's snowball effect from their captive parking technique, we went across the street to eat rather than trying out the crusty rusty looking hot dogs available in the Myriad concession stands. That will fix them.

The commercial exhibitors looked pretty good. I enjoyed looking around at some of the new equipment. The flea market was in full swing, but it looks like a lot of the stuff I saw there had a touch of remembrance about it. I am sure that I had seen some of that stuff before, probably last year. Some flea market equipment has universal value and in fact sole value only as a universal exchange medium in the flea market. Some of the stuff would have no value at all except for its presence in the flea market. There really wasn't much too it. For some reason, I curbed my appetite and didn't buy a single thing at the flea market or commercial exhibitors. As incredible as

It sounds, Ham Holiday this year cost me only a lunch, a coke and a couple of cigars. This definitely sets a record and my help lower the per hamfest expenditure average especially at Dayton. Well, a person needs something like that every now and then just to prove the presence of self control.

One commercial exhibitor I especially enjoyed meeting was Mike Apsey with Journal/20, the VIC-20 Users document. The tipoff came from in a letter from his mother Helen W4HZY, a month or two ago. I mean, what mother doesn't think her son is a nice person? Certainly not Helen. In this instance, she was right on. Mike is a nice guy and I hope he does well. If he could squeeze a subscription out of even half of the Vic/20 owners, then he might have a chance. Vic apparently is the only computer manufacturer making any money selling computers. I would think that with the way that the price on the Commodore 64's is dropping that it might also be prudent to add them to the Journal because I think that they will sell a lot of those also. Mike has also had a wide variety of experiences before he settles in Van Alstyne, Texas to publish the Journal. Our conversation started at the hamvention site and continued later that evening over the 88 repeater in Norman after Mike found himself back at the room and a walkie talkie on the 7th floor. I had been a little short on sleep and had to finally crash and burn for the evening.

The next day, after being up late with a project or two kept me in bed until very late, about 9 O'Clock or so. Phone calls and what not kept me from leaving for OKC until about 12:30 or so. Believe me, it was a tight fit to get up there and toss my button in the hopper just before they started the "round and round it goes." As usual, I won nothing and I am sure that K5JB won something. Wendall WB5ISO, who works for the phone company, won a phone. It doesn't say BSP. While I admit that I probably am not deserving of a TS-430, I still felt that I had an even chance. I am sure that someone deserving did win it, but I immediately suppressed it from my mind.

Somebody suggested a late lunch/early dinner which idea was immediately seconded and the meeting adjourned to the Boulevard cafeteria. It is amazing to me how expensive all places like this are. I guess that they can be made reasonable if you chose carefully and you save the tip. They do allow you to overeat since there is no limitation on selection except price and you do the selection when you are obviously hungry. One rule I have is to never go to the grocery store hungry. You invariably will buy much more than you will eat and a few things you don't need. This rule can not apply to cafeterias by definition since if you are not hungry, you have no business being there.

Ham Holiday totaled up for me as a lot of fun. It was good to see everybody and wander through the exhibits. There didn't seem to be any major hitches this year, but I must confess that I didn't talk to anybody who might have known one way or the other. Just about everybody from Cora walked around looking like they weren't pulling their hair out over anything except Joe Harding and I can say that he probably never pulls his hair out over anything. Another good show and lots of laughs.

Micheal Salem N5MS

DIGITAL VOICE STORAGE

(Or Speak to Me Only with Mark and Space)

I look around me and all I see is an analog world slowly going digital. Some things are very obvious about it. Repeater controllers do it all. People rush home to play chess with their computers. Calculators pack more punch per ounce than ever before. There is nothing to stop it or perhaps I should actually question, "Is there nothing to stop it?"

Speech synthesis is a fascinating subject in this regard. It is amazing to me that you can take a series of digital pulses and convert them to speech. I think that the cleverest method is the Texas Instrument LPC (Linear Predictive Coding) which actually models the vocal cords. Of the data that is pumped out, several of the bits determine the pitch, amplitude and other parameters, while the rest of the bits set a series of filters in the chip voice synthesizer. The quality is quite life like with a very minimal amount of data. It does take quite a bit of work to produce the proper digital stream, but the quality is very high.

Synthesized speech is here and now. So is digital voice storage, but to a lesser degree. Since the conversion of analog data to digital data is a very expensive process, data storage wise, digital records and recorders have not really caught on. The trick is not really that you store speech digitally, but that you can do so economically. There have been a variety of techniques that have been used to compress the digital data once it has been produced. Most of these involve some type of processing of the digital signal. OKI Semiconductor, for example, has come out with a technique known as adaptive pulse code modulation in a speech synthesizer. This method takes the 12 bit digital data point and converts it to a 3 or 4 bit "squeezed" signal for storage. This compressed data then represents a savings in space of about 3 to one. But that really is not very much savings when you consider that you can only store about 8 seconds of speech in 64K of memory. The quality is good, within reason, but 64K of memory is still expensive.

I have been gathering up some information about speech synthesizers and will probably write about it in the next couple of months or so, but I saw a couple of devices the other day related to speech synthesis that I had to comment on.

Digital voice storage has been built into a mobile voice storage unit made by Motorola. The MVS-20 is made for police or commercial use. For the operator in the car, he can set it to store a message while out of the car. For the dispatcher, a message can be stored and played back later. Since it is digitally stored in Random Access, it is available for instant replay. Messages can be recorded for later transmission automatically when the channel activity is finished and up to 128 "message waiting" addresses can be stored for review and input by the dispatcher. That is, a mobile can record a message, leave the vehicle, and the dispatcher can interrogate the mobile when he has time and retrieve the message.

The only drawback is that the Motorola can only store 20 seconds of speech. That is really a lot of talking even though speech can be pretty inefficient at times. The 20 seconds can be sectorized off for multiple recordings of various messages. The most interesting aspect of this is that once the synthesized speech is stored digitally, it can be manipulated by the microprocessor and Motorola has it doing some pretty nifty things. With the right circumstances, there is no limitation

as to the amount of manipulation that you can do with voice. Cutting and splicing words would be virtually foolproof. There would be no "18 minutes gaps" with evidence of multiple erasures. The only way that one would be able to determine whether a "splice" had taken place would be to judge the content of the voice to see if the context had changed. Having worked with tape and expert editors and knowing what they can accomplish, I shudder to think that digital audio could make some of these people's work almost undetectable.

Extended storage of analog signals in an economical fashion is coming. Advanced Computer Controls of repeater controller fame announced a DVR-128 Digital Voice Recorder to work with their RC-850 and RC-85 Repeater Controller. Actually, I am sure that this is a proposed device that is clearly in the development stage. They call for availability before the end of the year. It will have remote recording and playback capability and will store up to two minutes of speech. These two minutes of speech storage can be broken into 32 "tracks" with dynamic memory allocation. The product is intended to assist the controller with voice mail, voice ID and bulletin announcements. Those of you who have heard the 147.03/03 repeater already know how versatile ACC's speech synthesizer can be. It will not be an inexpensive device with a board price starting around \$700.00. Not sure if it will be an add on unit or plug into the existing box of the controller. Now, I think that it will be useful for announcements, but I don't know about the voice mail. I don't notice that many people using the mailbox right now on 03, but that could be because its operation is a little complicated.

In any case, it will be quite interesting to see what products develop. Several companies have developed digital recorders for tape. They are quite expensive. But to dub a digital tape is unbelievable. Usually, one can expect a 3 db loss in signal to noise ratio each time a dub is made. (Actually, I have seen some videotapes that look like they were on the 10th generation) However, since the digital voice device merely determines at any one point whether a bit is present or not and not just pitch, amplitude, etc., the signal is very easy to copy. In fact, the dub is just as good as the original. For that matter, the 100th generation dub is just as good as the original. For those of us with an analog mind in an increasingly digital world, this can be a boggling fact.

Digital voice storage will have increasing use, but it won't really catch on until techniques are developed that compress the data to the equivalent or present analog storage rates. Mass storage devices such as laser discs will help out and so will expanded memory devices such as bubble and others. Price will be the limiting factor for awhile.

Micheal Salem N5MS

POWER SUPPLIES

Need a good heavy duty (and I mean husky) power supply to bench check that Motrac? Or does anybody still have a Motrac? I have a rack mount power supply that is actually two power supplies in a single cabinet that can work separately or in tandem and each one is rated at 25 amps continuously. If one power supply should go down, the other can continue to tote the load. These babies can take it or should I say handle it and they are presently serving as ballast for my car in the trunk. I don't have need for so much power. I have acquired several others at Dayton and previously that more than handle my deeds and needs. While it only

takes up about 8 inches of rack space, they are very husky. You can take that car battery you have been using and throw it away when this supply walks into the room. Help me out and it can be yours for just a mere \$75.00 and negotiable. Call me at 321-5453 or 360-1302.

I also still have some first class touchtone decoder boards. These have been mentioned before and I still have a couple of blank boards and about the same number of built up and tested boards to spare. Probably will keep about 4 or so just to use around the house. These use the AMI S3525A prefilter (digital switched capacitor) and the Mostek MK5103 touch tone decoder. There is both BCD and 1 of 16 output as well as an LED display that reads out the digit on a large 7 segment display. Boards are \$25.00 and are double sided plated through holes. Same phone number.

While you are all on the line, I just finished using a squelch circuit that I built up several years ago using the micor squelch circuit chip. Motorola designed a custom chip that measures the noise and produces a squelch circuit that can't be beat. When the signal is solid, it slams the COS shut immediately. When the signal drops below a certain threshold, it lengthens the squelch tail by about 150 milliseconds to allow the mobile time to get through the multipath. Having experimented with this for some time, I am ready to redesign it and change the size of the card to a standard six inch by 4 1/2 inch card with 44 pins on one side. The circuit is a little parts comprehensive since it is essentially an analog circuit. I was thinking about including an analog delay line to chop off the squelch tail immediately if needed and maybe a short courtesy beep if there is room. Is anybody interested in something like this? It might be several months before boards are available, but I would like to have several plated through and double sided boards made up. If there is no interest, I may do it myself but will probably not get the commercial quality plated through holes. Let me know. It will be a superior squelch circuit. You will be able to adjust the sensitivity and calibrate it almost in microvolts or better make that tenths of microvolts. It will take discriminator audio and produce regular audio out and COS.

Micheal Salem N5MS

RIG HERE IS MOTOROLA . . . (Space Shuttle Division)

I never understood all the "shuttle" diplomacy about selecting a radio for the STS-9 Flight to be used by Owen Garriott, W5LFL. I mean, what I would have done is saunter down to the local ham store and gotten one of each from Yaesu, Icom and Kenwood and gone to Owen and said, which fits your hand the best. OK, We'll take that one. But NASA said "Noooooooooooooh." So they pointed to their technical writers and "poof" out comes a document entitled "General Requirements for an Amateur Radio Transceiver for the Space Shuttle." The specifications weren't that tough, frequencywise, but the deadline was. NASA apparently was aware of the tremendous publicity that this would generate among the amateur population and worldwide wanted to rush this up for Owen's flight. They haven't been thinking about it for very long and the deadline was July 15th. And the only company that said that they could do the job was a nonham manufacturer and my favorite radio, tadaa, Motorola. They committed themselves to doing whatever was necessary relating to the transceiver.

The boys at Fort Lauderdale really did bite off a big chunk, especially since they do not make

amateur gear in the normal course of business. Most of it comes after the fact by interested second or third hand users. The general specifications called for the radio to operate between 145.51 Mhz and 145.77 Mhz direct or using a 600 KHz offset. In addition, the transceiver had to have the capability of transmitting on any frequency between 145.51 and 145.77 Mhz and receiving at any different frequency in this band. These specifications were such that no existing amateur radio transceiver could meet them without extensive modification.

Perhaps the most serious mechanical specification was related to outgassing requirements. No chuckles please. The Motorola was extensively tested for gasses produced in pressurization and a pure oxygen atmosphere. Plastics can be especially dangerous here. Many of you may have noticed that a film gathers on the window or metal parts of your car when it has sat out in the sun with all the windows up. This material is a sticky oozing film that will streak when you rub your finger across the window. This isn't dirt or smog, but in actuality is the plasticizer out of the seats and plastic parts of the automobile. The plasticizer is what makes the plastic soft and pliable. Notice in an old car that the plastic parts including the vinyl has turned hard and brittle. This is because of the lack of plasticizer that has flown the coop. Plasticizer is also used in the Belden 8214 foam type coax similar to RG/8. The foam is not as stiff as polyethylene used in regular coax. It is used because it represents cable with slightly lower loss. If a hard black jacket was used on the cable, it is possible that with certain types of sharp bends that the center conductor mechanically might migrate through the foam to touch the shield or at least deform to the extent that the impedance characteristics of the cable would change. By putting plasticizer in the outside jacket, it is softened considerably and the cable is much more flexible and hence less likely to change mechanically. The only problem is that the plasticizer can migrate through the braid to the center foam and contaminate it and increase the loss. This is why foam type coax can actually become lossier than regular cable. It is the outgassing of the plasticizers that causes the problem. The same may be true in the Shuttle, although the consequences may be a little more serious than just a little film on the windshield. The combination of outgassing, low pressurization and a pure oxygen atmosphere gives rise to considerably more problems.

Motorola delivered a prototype in the middle of July which was basically a Motorola MX-340 Handie Talkie with an adapter interfacing box. The box allows the interconnection of the lightweight crew headset, the antenna and the astronaut's individual tape recorder with the radio. The tape will be used for logging purposes. I understand that the antenna will be some type of printed circuit type that will be held up or taped to the window. Hey, come on Nasa. Even I have an externally mounted antenna on my airplane. Oh, I know that it might not be as stringently manufactured and installed as your transceiver, but at least I didn't have to file a Supplemental Type Acceptance because I mounted it on an inspection plate.

Anyway, the potential actually exists that we will be hearing the words from outer space, "Rig here is a Motorola." Although the idea has been brewing for quite some time, Garriott had to ask for a special waiver of the FCC Rules to permit him to operate aboard the shuttle. Section 97.407 provides that only amateur radio stations licensed to Extra Class operators are eligible for space operation. Garriott is an Advanced Class operator. Also, the Commission was also asked to waive Section 97.423(b)(1) which requires three pre-space operation notifications be

made to the Commission, the first 27 months prior to lift-off, the second 15 months prior to lift-off, and the third three months prior. I suppose that the Commission has good reason to know about any planned space radio operation since they may want to investigate interference potential etc. In this instance, there would really not be any purpose served since the control operator would be aboard the spacecraft and the flight would be for a short duration only.

The Commission did rule favorably on all of W5LFL's requests. FCC's Jim McKinney, who is the Chief of the Private Radio Bureau) said that the waivers were "in keeping with our statutory mandate to provide experimental uses of radio frequencies and to encourage the larger and more effective use of radio in the public interest." McKinney signed a Temporary Waiver Order on June 27.

Micheal Salem N5MS

NO BUSINESS LIKE RADIO BUSINESS DEPARTMENT

In passing, I thought that I would mention that the Commission clarified the prohibition against business communications in the Amateur Radio Service. The Commission noted according to W5YI that "while the International Radio Regulations and various rule sections in Part 97 clearly establish the personal and non-pecuniary nature of the Amateur Radio Service, there is no explicit prohibition regarding business communications, except in Section 97.114 which applies only to third-party traffic messages." The action was released June 30, 1983 and basically was a procedural change only since it did not impose any new restrictions, but the definition of business communications is very broad indeed:

The term "business communications", in this instance, is used in the broadest context. It includes all types of communications which are intended to facilitate the regular business or commercial affairs of any party, whether individual or organization, whether for profit or not-for-profit, whether charitable or commercial, and whether government or non-government.

This term "business communications" was moved to the definitions. There was a flurry of concern about whether there had been any change, but later reports indicated that it was procedural only. This clarification also means that there should be no doubt in anybody's mind what is or is not commercial. Just because you work for a nonprofit or governmental organization does not mean that your transmissions are not business related. They are if the purpose of the communications is intended to facilitate your business or commercial affairs relating to that business. I have heard many veiled attempts to couch the language in covert terms with the hope that somebody will not understand. That is not good and dangerous to a repeater trustee's license. It really would be sufficient that you tell the guy to give you a call on the telephone. However, if you use the radio regularly for the purpose of locating and finding somebody, that might also make it business communications for the purpose of the Rule.

Sometimes people don't leave well enough alone and everybody forgets at one time or the other. Business is business and radio is radio. Hopefully, never the twain shall meet. This might also go for ordering a pizza by radio although I personally see nothing wrong with that. I guess what the Commission is interested in is avoiding any questionable use or potential for abuse. We should all watch it.

Micheal Salem N5MS

The South Canadian Amateur Radio Society

The August meeting of the South Canadian Amateur Radio Society was not held on the usual date, the second Saturday of the month, but was scheduled to be held on August 20th to facilitate a briefing for those who will be helping with the Great Balloon Race.

OTHER HAPPENINGS.....

- W5SQJ, Jess is back from his trip to Alaska.
- Ken, KA5EFJ is also back in town after his fishing trip to Minnesota.
- Leland, W5MCN is in the middle of a trip to Michigan.
- N5BEW, Ken is still waiting for his new talkie.
- Chuck, KC5CU is shopping for a new HF rig.
- KB5EK, Wade already has a new rig picked out.
- Bill, K5KDR found a good grab on a talkie at Ham Holiday and has been heard using it.
- Jay, W5QC held a garage sale which was reported to be very interesting. Jay also has his motorcycle almost ready to ride.

HAM HOLIDAY.....

As with past years, Ham Holiday appears to have been a success. I had a great time and got just as excited as I did at the first hamfest that I ever attended. Of course, the flea market is the area where I spent the most time. I didn't buy or sell much, but it is really a lot of fun to watch all of the people. Of course, it is also great fun to look at all of the junk.

SO LONG H.O.....

One of Norman's most active amateurs, H.O. Townsend-WA5MLT, has packed up and moved out of these parts. H.O. and his family have taken up residence in the Dallas-Fort Worth area as a result of an advancement in H.O.'s career. Actually, though few people are aware of the fact, H.O. is a native Texan which will make the adjustment quite a bit easier as he already knows the language.

While in Norman, H.O. served as county EC and Section EC. He is active in DXing, ARRL, and was often found hanging out on 2 meters. On top of all that, he is a Charter Member of SCARS, and we will miss him in Norman.

-wa5rpp

FOR SALE: Ten-Tec Triton 540 with noise blanker and CW Filter - \$275, Ten-Tec 242 Remote VFO - \$75, Ten-Tec KR5-A Keyer - \$20, Bencher XZ-2 filter - \$30, Yaesu FT-227R 2mtr XCVR - \$150. All one-owner with manuals. Call Wade, KB5EK, 794-5144 after 3pm daily.....

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BICENTENNIAL AMATEUR RADIO CLUB

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One of the most enjoyable 76ers meetings in recent history was held during the August ice cream social at the Granada Mobile Home village at 2400 south MacArthur. Several new faces were seen for the first time in a long while, including Joe Ramage, WB5TDW, who is doing much better after his stay at the South Community Hospital. The fact that no club business was discussed only made the occasion that much more enjoyable. Thanks again to all who showed up. Our next meeting will be on Tuesday, September 13 at the O.G. & E. building located downtown.

I hope everyone is aware that the new AMSAT OSCAR Phase IIIB satellite, now to be known as OSCAR 10, was successfully launched and is now in orbit. Although there were some minor problems with the spacecraft's attitude with respect to the sun, but all should have been corrected by the time you read this. In fact, it's quite possible the satellite is in use already, providing for the first scheduled long haul VHF-UHF DX in the history of Amateur Radio. The satellite's highly elliptical orbit will allow intercontinental contacts for hours at a time when the "bird" is at apogee.

The satellite utilizes a "Molniya" orbit. The term Molniya refers to the satellite's path, which will hover over the northern hemisphere more than seventy percent of the time. At perigee, the satellite will zip across the southern hemisphere, and return back to view of the north for another eleven hour pass.

This is a revolution in amateur satellite communications, which formerly were restricted to L.E.O. (low earth orbit) orbits. L.E.O. satellites were only moderately useful for amateur communications, and useless for extended communications of any kind. In some ways, the OSCAR 10 will be a "great repeater in the sky", affording everyone the chance to make reliable VHF-UHF DX contacts. The OSCAR 10 is a true tribute to the spirit of amateur radio.

Bruce KC5CR

I feel it is necessary at this time to point out regulation 97.119 of the F.C.C. regulations pertaining to the Amateur Radio Service which states:

\$ 97.19 Obscenity, Indecency, Profanity

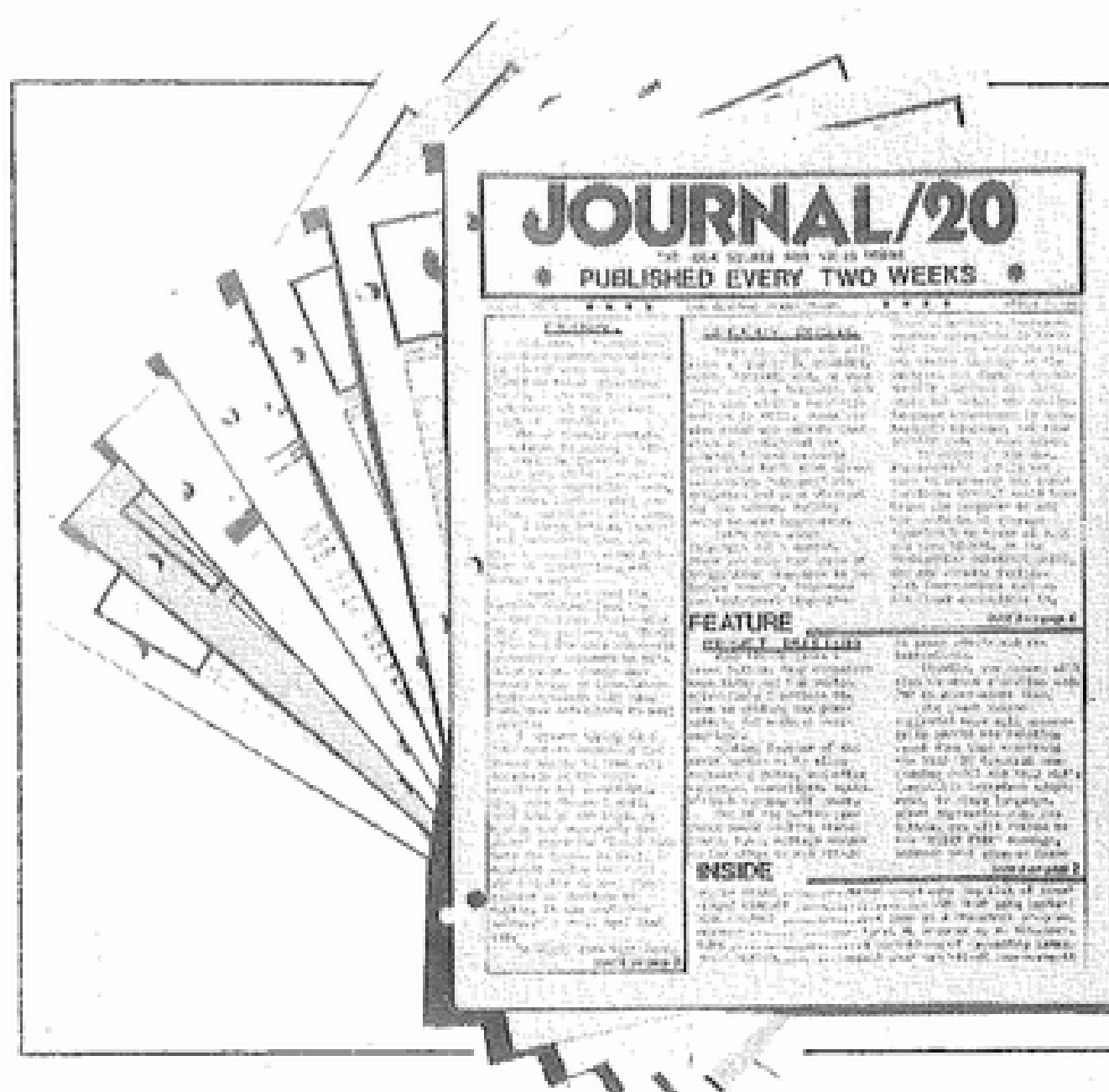
No licensed radio operator or other person shall transmit communications containing obscene, indecent, or profane words, language, or meaning.

Despite the dangerous precedent set by the Hildebrand ruling (see May 1983 QST), the regulations are still quite clear. Indecent language is simply not permitted on the amateur bands, regardless of the situation. Don't think that having a license makes you an exception. This means you.

Bruce, KC5CR



"I guess we should have expected this."



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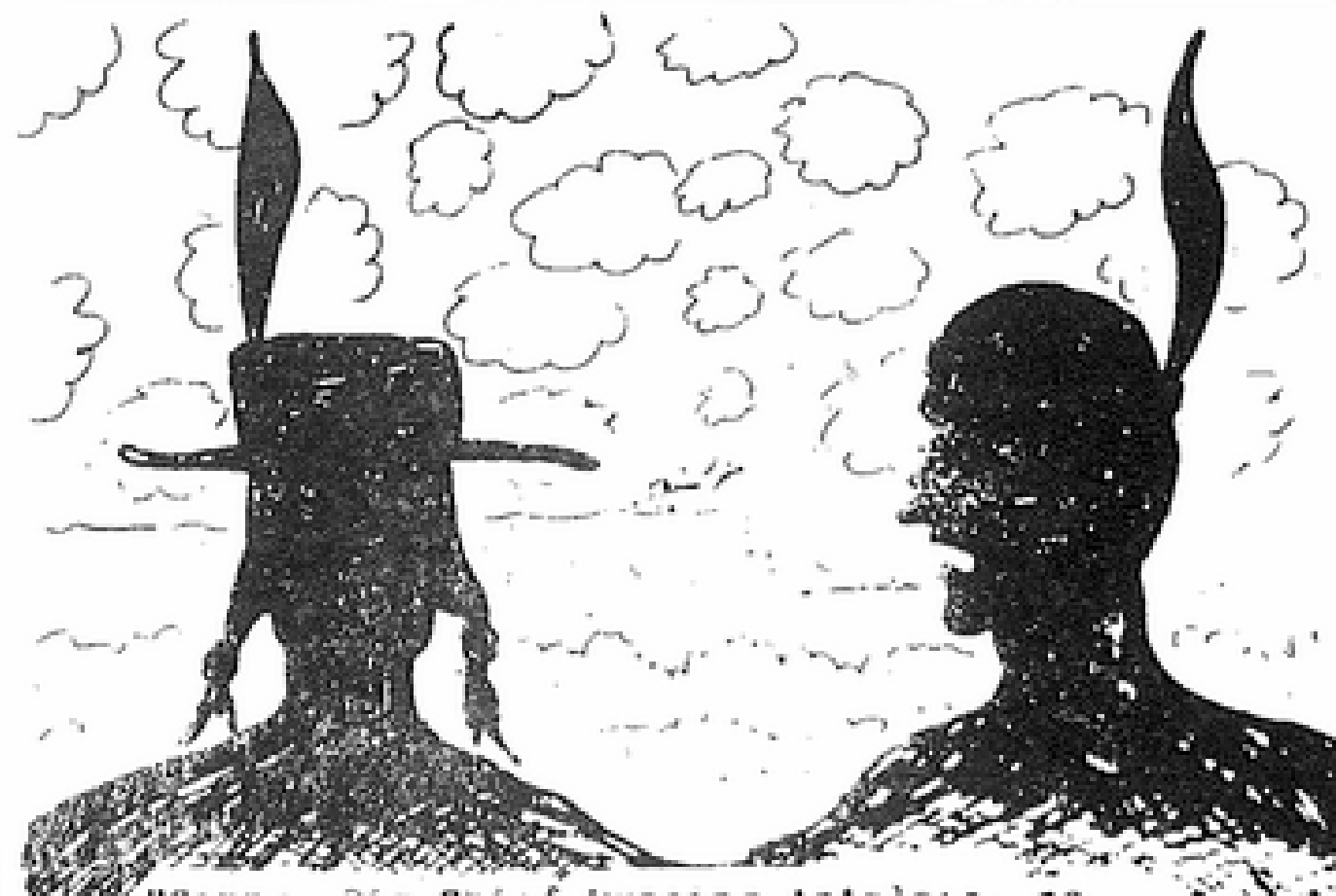
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"He buried it all somewhere in Texas and left each of you a shovel."

HAMONICS

BY WB6QEZ

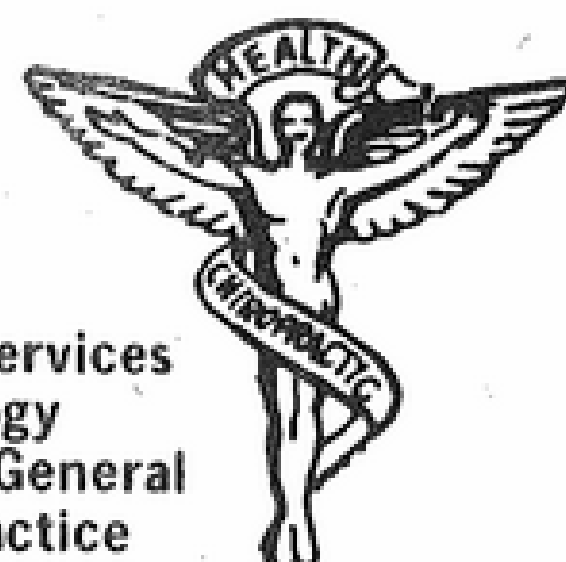


"Sorry, Big Chief Hunting Antelope, no can copy - - too much queen Roger Nancy!"

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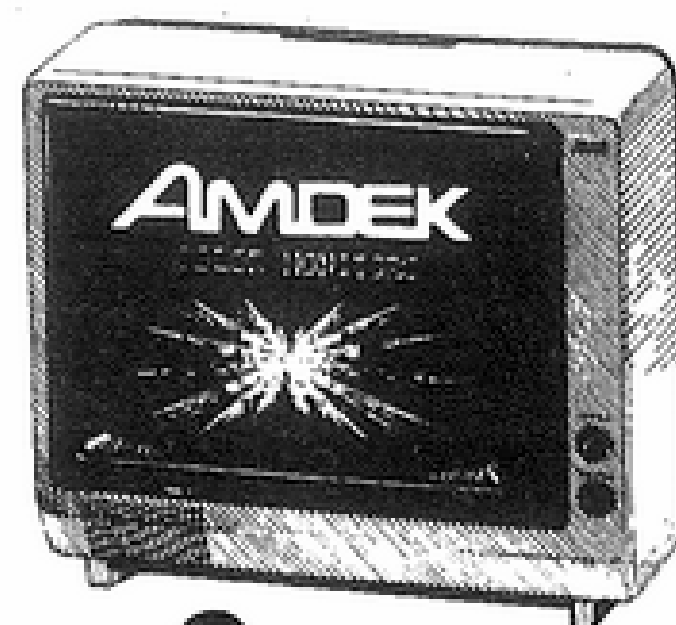
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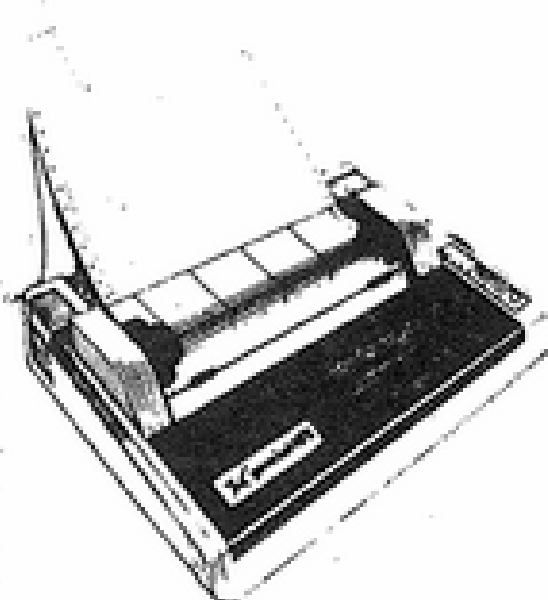
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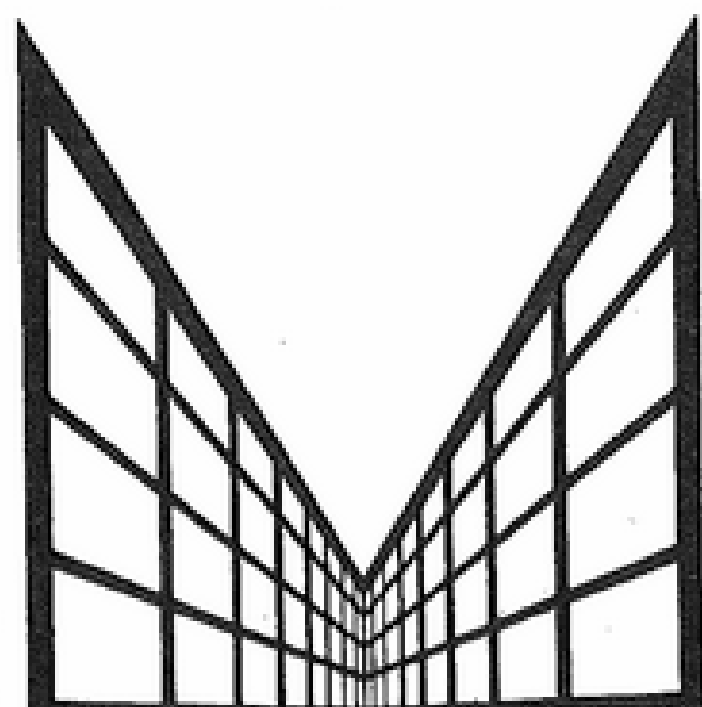
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HAM HAPPENINGS REFER TO CLUB SECTION FOR SPECIFICS

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
SEPTEMBER				EDMOND Club	Aeronautical Center ARC	
				1	2	3
		M O R I Great Plains	ARDMORE	ALTUS AREA		C O C O
4	5	6	7	8	9	10
Wheatstraw	OK-DX	76'ers SHAWNEE		KAY County		SCARS VHF Club
11	12	13	14	15	16	17
		AUTOPATCH				
18	19	20	21	22	23	24
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25	26	27	28	29	30	



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