Volume 13
MARCH 1987
Number 146

CENTRAL OKLAHOMA RADIO AMATEURS
COLLECTOR AND EMITTER

50¢

SECOND CLASS MAIL Postmaster, see page 3

GREAT PLAINS A.R.C.

W5HGH Repeater 146. 13/73

Thirteen members and nine guests were present for the February G P A R C meeting. Several of the guests-Leon, Chris, and Clayton Carlisle along with Mike Hinderliter are taking the Novice classes offered at Woodward and will be very welcome additions to our amateur community. Much of the meeting was dedicated to planning of the Annual Mooreland Eyeball QSO which is rapidly approaching in April.

A very interesting program on Fibre Optics was presented by Leon Carlisle with help from his sons Clayton and Cris. Rod, WB5OVT, related that a similar program on a then new fiber optic communications revolution was presented almost eleven years ago at the 1976 ARRL National Ham Convention held at Denver CO. He recalls that many present thought fiber optics would never replace conventional cable but that most hams were interested in the demonstration. It is amazing how far technology in that very interesting field has progressed in recent years.

VICI CLASSES

It was brought to our attention that amteur classes are also being offered in the Vici area by KC5OU. Harry, a very active ham known throughout the area, has been most instrumental in bringing many new operators into our ranks. He is also to be commended for his work in VE testing in this area as well.

POTPOURRI !

The 13/73 machine project is working as planned. Myron, N5HRA, reports that the "new" repeater was working Friday, January the 20th with 100 plus watts output. The club machine has been placed in a standby status and together both should offer very dependable

Continued NEXT PAGE

WHEAT STRAW RADIO CLUB

We had a very good turnout at our meeting in Kingfisher at the Peoples National Bank, hosted by the following Kingfisher members: K5LLX Ray and Verlina, WA5GLD Dickie and Laurie, WA5GHK & WA5VNS Joe and Mary Ann, N5FMO Scottie and Virginia, and K5ZKY Jim.

We had 40 people present, including 8 guests. It was great to have such a large percentage of our members present.

The meeting was called to order by our Pres., WA5PFK, Ralph.

We had correspondence from the ARRL on how to interest young people in Ham Radio by Joe our Sec.

WA5PFK, K5GGL & WD5JNT reported that they had attended the CORA meeting representing the Wheatstraw Club. We're very glad to see your participation guys.

WA5FLT attended the Oklahoma Repeater Society meeting and gave us a report on that.

N5IKN made a motion that the club subscribe to the ARRL letter because it has a lot of valuable information in it. It was seconded by K5LLX.

We only had one member out with the flu-bug, Sue of Longdale. Get well soon, Sue.

Our March meeting will be hosted by the Canton members. Leo, KE5TP, invited us all to the Community Building there. We're always glad to have visitors, join us.

Our April meeting will be held at the Mooreland Hamfest, which will be April 4th and 5th.

And, last but certainly not least, at our meeting we were entertained by Perry, W5MGZ, with a Magic Show. Perry is a very interesting fellow that gives you the impression that he enjoys life regardless of what he's up to. He is a ret-

Continued on BACK PAGE

ALTUS AREA AMATEUR RADIO ASSOCIATION

The February meeting of the Altus Area Amateur Radio Association was the biggest in a long time.

The fight with the city of Altus over antenna height restrictions was the reason for the big turnout. Aside from the near record attendance the evenings main event was the discussion of steps to be taken to help local Novice Frank Fereta win approval to put up a 75 foot tower. The problem had come up this last December when frank had gone before the local zoning board to get approval for a 40 foot variance to the local code. The board turned down the request and the Altus club had found a cause. Frank attended the December club meeting and except for a small notice and article in the news paper and a favorable editorial most of the members were in the dark on the events.

What turned out to be a problem and realy involved the club was that Frank is a member of the Air Force and had gone on temporary duty just after the board turned him down and has been gone except for 2 days ever since. Most of the clubs efforts and time have been directed towards helping Frank's wife who is left to face the city. The club's efforts included contact with the ARRL for information on PRBI, phone contacts with individuals who would support the hams and Frank. Contacts by phone and in person with various city officials to sound them out on their opinions as to what steps we could or should take in trying to resolve the problem. I would like to thank Mike Schenkel, W5VXU, for leading me around city hall on some of those visits, he was indispensible. After all was

Continued NEXT PAGE

GPARC CONTINUED

communications. The OM and I were able to hear 13/73 all the way down to Calumet on one of our forays to the OKC area. Gerald, WG5Z, represented our part of the world by attending the Repeater Society Meeting Held recently at Stillwater. He seemed to enjoy the day and gave an interresting report of happenings to the club.

PERSONALITY PROFILE

This story, of a long standing ham and club member commences many years ago. When, as a Freshman in High School a friend James, was given a one tube Crosley radio by his parents. Being in awe at the device and not being able to afford one himself, he decided to build his own receiver from scrap parts. Much to his surprised when he had finished and turned it on to WKY, the darned thing worked! As you may have surmised, he immediately ran down stairs, jumped on his bike and went to relay the important news to his best friend. James upon seeing how excited the subject of this story was, knew exactly, without being told, what had been accomplished. Needless to say, both boys spent the next several hours listening to this ingenious homemade device Thus began the long career in the field of electronics for W5KFK, Lewis Patterson.

Lewis acquired his ham license while stationed at Camp Barkley TX in the Spring of 1941. He studied code when at Fort Myers Signal School in New Jersey. He then sent for his test and passed, becoming a Class D-General Class Ham Operator when he went back to Camp Barkley. He was in the army for one year and was discharged in September 1941, prior to Pearl Harbor. From the Army, he moved to Wichita KA and worked for the Cessna Aircraft Co. While working there, a ham friend that worked there also, invited him over one Saturday night to do some radioing and they talked all over the country that night until about midnight on 160 meters. The next morning about 9:00 am he went to a cafe and everyone was talking about Pearl harbor.

He worked for Cessna until he went into the Navy as a ship electrician in 1944. (He thought it had to be better than being in the Army-at least they had beds.) He was on a ship out of Tacoma WA, destined for the Phillipines when the first atomic bomb was dropped. They left the next morning and then two or three days later, the second bomb was dropped. He claims that they still didn't turn that ship around even though the war was over. Lewis was in the Navy from April 1944 until December 1945, and, by the way, never got sea sick!

From there it was back to Buffalo OK, where he acquired his advanced license, put in a radio shop and from that went into the television business selling the first TV in Buffalo. Lewis began working on two-way radios and spent the next twenty two years in that profession.

What happened next? Be patient, as I've got to find time to get back over to the Pattersons and continue this interview on this most interesting personality, Lewis, W5KFK.

For now, 73 Lois, N5JGQ

MORE ALTUS AREA

said and done the matter was back before the zoning board where we lost again when it was decided that the board didn't have the authority to change the law. Two nights later the club met and it was decided to pursue the matter further. The club has now taken on the task of going before the Altus Metropolitan Area Planning Commission and having the zoning ordinance changed to be in line with PRB-1. Club efforts included paying the filing fee, efforts to round up public support for local hams and a petition drive in favor of the rule change. We are to go before the board on the rule change. We are to go before the board on 9th of March and hopefully have good results to report next month.

As mentioned before, a large meeting with the following present: N7DNU, KB6FLG, N4CIJ, KB5LS, WB5MMM, KF5ME, KA5WDY, KA5YWY, W5VXU, WB5KRH, Laura new Novice, WA5CBF, N5FQR, W5ZDI, WA5DGE, WA5TXY, KA5KVU, K5KCJ, N5EGG and KA5TFJ.

73 from Altus, Mike, N7DNU/5

1 AERONAUTICAL CENTER ARC

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

PR	BOB PACE, WA5CJG	376-3569
VP		
S/T	JACK IMAN, WB5SVN	677-8537
EDITOR:	BOB PACE, WA5CJG	376-3569

2 CENTRAL OKLAHOMA VHF

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

PR	JERRY WETMORE, KD5IS	524-5080
VP	HUGH BENSON, KA5BGY	946-0023
SE	JOE BUSWELL, K5JB	732-0676
TR	ELLARD FOSTER, W5KE	789-6702
EDITOR:	JOE BUSWELL, K5JB	732-0676

3 MID-OKLA REPEATOR

MEETS: 8:00PM FIRST TUESDAY, OKLA CIVIL DEFENSE, WILL ROGERS BLDG., STATE CAPITOL

PR	TIM RAUSCHER, KA5MUG	848-9910
SE	MIKE SAMBUCO, KA5TSD	672-9176
TR	SID GERBER, W5KOZ	737-1050
EDITOR:	MIKE SAMBUCO, KA5TSD	672-9176

4 OK CITY AUTOPATCH

MEETS: 7:30PM 3RD TUESDAY(7:00PM MEAL OPTION) GOLDEN CORRAL RESTAURANT 7000 NW 23rdROCKWELL

PR	CHARLES HOFFERBER, W5FMU	340-4468
VP	DAVE HOLDER, N5GQY	524-4711
SE	DAVID CARAM, KF5EB	751-5672
TR	ART HERNANDEZ, KF5DK	354-9724
EDITOR:	DAVE HOLDER, N5GQY	524-4711

5 OKLA UNIVERSITY ARC

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

PR	FRANK DONALDSON, N5IQJ	329-4172
VP	JOHN WUSTENBERG, KE5N	325-2382
SE	PETER RICHESON, KA5COI	329-3217
TR	GREG SMITH, KA5LIN	366-1641
EDITOR:	GREGG SMITH, KA5LIN	366-1641

6 ALTUS ASSOCIATION

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

PR	JAMES MOLLEDAHL, KB5LS	482-7938
S/T	MIKE SULLIVAN, N7DNU	477-2938
EDITOR:	MIKE SCHENKLE, KB5XN	482-1797

7 BICENTENNIAL(76er) ARC

MEETS: 7:30PM SECOND TUESDAY KIPS RESTAURANT, RENO & MERIDIAN

PR	DONALD DUCK, AE5N	691-4199
VP	TED VANLANINGHAM, WD5JNT	262-1675
SE	JERRY SPROUL, N5AUH	354-2061
TR		
EDITOR:	JIM SEALS, KB5XN	381-2005

9 WHEATSTRAW ARC

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

PR	RALPH WILDER, WA5PFK (NATONGA)	623-5421
VP	TOM JOHNSON, N5IKN (EL RENO)	262-5631
S/T	JOE GARLAND, WA5FLT (CALUMET)	893-2660
EDITOR:	JAN KUEHN, N5JUT (OKARCHE)	263-4480

10 CENTRAL OKLA COMPUTERS

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

PR	PAUL PAPE	755-1058
VP	ROBIN FOLK	737-3580
S/T	MARTIN SCHIEL	670-6091
EDITOR:	MARTIN SCHIEL	670-6091

11 EDMOND AR SOCIETY

MEETS: ODD MONTHS, 3RD SUNDAY, 2:00PM EDMOND EOC. DINNER, EVEN MONTHS, 3RD FRIDAY.

PR	BOB MCCOY, N5BUJ	348-2032
VP	LEE VAUGHN, KA5MIS	348-2961
S/T	AMBER THOMASON, KA5VEK	478-4615
EDITOR:	AMBER OR BOB THOMASON	478-4615

12 QUARTER CENTURY W A

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

CHN	ROBERT RUNYON, AA0D	373-1818
VCH	GENE HAILON, K5DLE	341-8289
S/T	HOWARD BAKER, N5AS	721-5453
EDITOR:	ROBERT RUNYON, AA0D	373-1818

13 KAY COUNTY ARC

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

PR	DAVE LAND, KD5FX	762-8616
VP	STEVE SCOTT, KA5SGK	762-0117
S/T	HARRY BEATTIE, WD5DPR	765-3862
EDITOR:	CHARLES NORTH, N5EYD	762-8136

14 CIMMARON ARS

MEETS: 7:30PM THIRD THURSDAY, N5FUD SHACK 827 S 13, FAIRVIEW

PR	BILL SIMPSON, N5HQR	
VP	RAY BARNES, AB5Z	274-3334
SE	DENNIS PAINTON, WK5V	764-3599
TR	TERRY MCCOLL, KA5TVF	227-3672
EDITOR:	JACK DAY, NH5Z	227-3462

15 SOUTH CANADIAN ARS

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

PR	MARK KLEINE, N5HIR	329-4285
VP	ANDREA WOLFE, KA6PKJ	799-5150
SE	LINDA BRANDT, N5DMN	321-5081
TR	MONTE BATEMAN, WB5RIX	329-7485
EDITOR:	DAVIS EGLE, KD5IT	321-7570

16 EDMOND AR CLUB

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

PR	MARK NORTHCUTT, WD5DYI	755-4672
VP	BOB MOORE, KA5ETA	799-1765
S/T	KAY NORTHCUTT, WA5DYJ	755-4672
EDITOR:	MARK NORTHCUTT, WD5DYI	755-4672

17 OK CPM USER GROUP

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

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

18 GREAT PLAINS ARC

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

PR	MINDLE HATCHETT, WA5PLM(FT SUPPLY)	766-3561
VP	LEWIS PATTERSON, W5KFK	256-2111
SE	LOIS FORD, KA5PYA	923-7683
TR	FREIDA PATTERSON, N5EOX	256-2111
EDITOR:	LOIS FORD, KA5PYA	923-7683

19 OKLA INDEPENDENT ARC

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

PR	DAVE WHITE, WN5LUI	765-5707
VP	VERNON TREIBER, N5AMV	767-1571
SE	GLEN BISHOP, JR, KA5PUB	767-1031
TR	BIZ MICHY, WD0HCO	762-3297
EDITOR:	DOUG EVERITT, N5DUB	359-0069

20 ARDMORE ARC

MEETS: 7:30AM 2ND SATURDAY. CORRAL RESTAURANT INFORMAL: EVERY WEDNESDAY, 221 9TH NW

PR	GLENN HAMILTON, KE5ES	226-4379
VP	KEN FRAKES, WB5WPC	226-1950
SE	ROBERT GRIFFIN, WB5VKA	223-8741
TR	JOHN MERLYN, WD5FZD	223-9343
EDITOR:	JACK GANT, N5GM	223-2619

21 TRI-CITY ARC

MEETS: 1ST THURSDAY OF THE MONTH.
PLACE:

PR	ROBERT DOLTON, KA5RHU	379-2365
VP	RON PHILLIPS, WB5UPU	382-1856
S/T	J. B. BILLS, KE5MU	379-3992
	P.O. BOX 655, HOLDENVILLE OK 74848	
EDITOR:		

CENTRAL OKLA RADIO AMATEURS

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

PR	JIM BOSWELL, N5BEQ	236-0368
VP	FRANK TASSONE, KA5WGS	341-4945
SE	LEE WARD, N5HIR	789-0681
TR	SUSAN ST LAURENT, KF5LG	324-8180
COM/COM:	CHARLES HOFFERBER, W5FMU	340-4468

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The South Canadian Amateur Radio Society

SCARS met agn

on Saturday February 14 at the Norman Red Cross. The meeting was called to order at 9:35 am by President Mark, N5HZR. The attendance was outstanding at 49 with 3 guests from Edmond: Cal, KB0OU; Linda, WD0FTM; and their daughter; and Koichi, a guest from JA land, in Norman on temporary assignment.

The gud news

is that Ron, N5HZS, won the first raffle prize, a clip on light fixture, and Louis, W5UZD, won the second prize, a Whitman Sampler. The bad news? Louis has been licensed since 1930, has attended hamfests and the like almost every year since then, and this was the first prize he has ever won. So if you haven't won anything in the last few decades, don't give up!

There wuz

several new calls in the group including WU5P, Marshall (ex KF5RQ); WU5W, Andi, also known as Wazoo(ex KA6PKJ); N5BKR, Al (ex KB5BBX); N5KCS, Allen; N5KCW, Dani, and N0RUF, Randall. Congratulations to the upgrades and new tickets.

We are flush,

sez Monte, WB5RZX, the SCARS treasurer, with $849.07 in the coffers, although some is committed to current projects.

Captain TUNA

KA5EFJ, some know him as Ken, reported on the ARES needs for communicators and spotters for the Spring storm season. If you are interested in participating, call Ken ASAP. A training session for spotters is scheduled for March 5, 7:30 pm, at the NWS Forecast Office, 1200 West Halley Drive, which is just North of the Red Cross Building. Ken is also planning to hold an ARES net on Tuesday nights at 7 pm on the SCARS repeater 147.060/± 600 MHz. Be sure and listen on Tuesdays.

HH 1987 will

be a great event, according to K5PL, who is one of the CORA reps from SCARS and the OU ARC this year. The event will feature a 2 day flea and dealer market. Contrary to an earlier report, the ham fest will be held at Lincoln Plaza.

Fleas r coming

to Norman if Gary, WB5ULK, chair of the SCARS swap meet committee has anything to do with it. He and the others are working on a suitable place for the newest SCARS activity. Watch for more info next month (promises, promises, ...).

LOGO LOCO

finally got off the ground this month. Andi, WU5W, conducted the show-off. There were ten entries, including the original logo devised some 10 years ago. After a close vote, the old logo came out ahead. As some wag quipped, back to the drawing board!

Did U No

that this year is the decicentennial of SCARS? Yes, sir, madam or ms, as the case may be, SCARS was founded in 1977(in the fall I believe) by an eqterprising, far sighted group of ten amateurs. A celebration is being planned for this fall, perhaps a special event station or a certificate for WAS(Worked All SCARS), WTS (Worked Two SCARS) or WC(Who Cares). If you have ideas, contact Mark, N5HZR.

Say it isn't so

It isn't so. The SCARS repeater is still on 147.060 with inputs on 147.660 and 146.640 and not .07/.67 as mistakenly reported last month

A rumor

persists that Louis, KD5WA, volunteered to be the SCARS Field Day coordinator. Louis, is that true? We hope so cuz he done a real gud job last year. However the challenge will be greater than ever in 1987! The Edmond group has challenged SCARS to best them on FD(hmmp) AND (bad news guys) Whup Up Five Wazoos, Andi, will be out of town that weekend so we don't have the voice that draws QSO's like radio waves to a grumpy neighbor's TV working for us. Louis, we're on our own!

The reps from

EARS told us they were planning a HAMP OUT (a contraction of HAM and CAMP OUT) on March 20. It will be held at Red Rock Canyon, Lake Canton, or some such haven for woodsy types(eg lots of chiggers and honey pot smells that go for miles). Some fun, heh!

Frank, N5IQJ

Prez of the OU ARC, asked for volunteers to help them get their antenna fixed up. Plans are to do it on February 28 but if you can help anytime, call Frank, at 329-4172.

BRAPPPPPPPPPP

is what you hear when you listen to packet radio but a TNC and a terminal transforms the noise into error-free intelligence. Mark, N5HZR, with the help of several SCARS members(NI8W, WU5P(aka Vanna), K5PL, WB5RZX, ...) put on a great program on the whys, whats, and how to's of packet radio. Mark explained the basics of the digital communication technique, gave an introduction to connecting and using a TNC (terminal node controller), and put on a hands-on demo.

Tell ur friends

about the Novice/Tech class to be held this spring by SCARS at the Norman Red Cross. It is scheduled to start on Monday, March 9, and will meet once a week from 7-9 pm. The class will run for 6-8 weeks and the goal is to have newcomers earn a Novice and a Technician license at the end of the 8 week class. Monte, WB5RZK, and Davis, KD5IT, will be conducting the class. Upgrade sessions to bring techs/generals to general or advanced class will be held simultaneously. Contact Monte at 329-7485 for information.

The next VE

exams will be held in Norman on Tuesday, May 5, 1987 in room 228 of Kaufman Hall on the University of Oklahoma campus. All levels of CW and theory exams will be given. Contact Sam Barrett at 321-2601 for info on the exams.

A tour of

the new National Weather Service building at 1200 Halley Drive will be conducted at the next business meeting. Which brings us to the

Next meeting

which will be on Saturday, March 14, at the Norman Red Cross, 1205 Halley Drive.

Salem

THE TALK IS NOT CHEAP FULL DUPLEX LINK

The repeater operator constantly experiments with items that can improve operation of the system. The responsibility or effort to keep a repeater system on the air 24 hours a day also demands a certain amount of reliability from the equipment. Improvement versus reliability doesn't also match. So, when you throw in an additional factor of cost, the juggling act really begins.

One way of saving money in operating a phone patch repeater system and maintain control over the telephone line used for the repeater is to route it through a control operator at his residence or other location of control. But running these lines take additional phone lines and more expense. One way around enhancement of the local Bell treasury is to use the amateur frequencies given for control in the UHF region and run links. Unfortunately, these links must be full duplex if you are to maintain the telephone line like a hard connection.

For those people who own a Shackmaster or other remote control station operation, a full duplex link is also helpful in operating between a repeater and the remote station location. I bought a Shackmaster some time ago. I thought that I would set it up to operate through the VHF repeater I use every day with the option of also operating it through a UHF repeater. I have been looking around for a full duplex link to run between the repeater site and the Shackmaster located at my home station. There are a variety of these small transmitters and receivers available. K5JB hooked up a couple of HT-200 transmitters and receivers to make a couple of links. I built up a 450 Mhz link receiver using the HT-200 components. It worked pretty well for several years, then something zapped its sensitivity. By that time, I had taken the link back down and never got it back in service. Besides, the HT-200 is a positive ground radio and always a pain to work with, though not impossible. Besides, the only way to find out about new radios is to fiddle with them. Ideas also slowly develop when a need arise.

Several companies offer fully assembled links for about $500.00. Neulink is one and their equipment looks pretty good, but the cost is out of sight. I thought that I would keep on looking. Motorola has a couple of radios of the Maxar type that have a unified chassis (transmitter and receiver on the same chassis), but are completely independent units and have few parts in common between the transmitter. A friend, John, found a couple of these known as Flexars in the Dallas flea market. Big John fiddled with them, but each had some problem and parts missing. His generous and quick solution was to trade them to me. Don't get me wrong, I wanted them and had to do some fast talking to eventually get him to let go of them. John has a habit of holding onto equipment. It took some diplomatic prying to loosen the grip. So now, I had a couple of unified chassis 450 transceivers without cases and with some problems and parts missing. Well, the challenge is offered.

The radios were for different splits. Dean N5AMV, always the mentor, lent me a book for the radios. I determined that one covered the split between 450 to 480 Mhz and the other radio went from 480 Mh on up. Getting them operating was also a problem. I borrowed a set of crystals and had a operating radio offered that I could refer to and soon found that one of the radios had a bad 10.7 Mhz mixer. The other was missing some crystal filters. I checked the junk box and found some 10.7 filters I got I don't know when. They were not as good as the $25.00 to $35.00 Motorolas, but again, they didn't cost as much. The transmitters seemed to tune up eventually, but they took some careful study of the Motorola manuals. They both put out in excess of 10 watts, much more than was needed for a full duplex link. Most links operate on the order of 2 to 3 watts over most paths. Besides, after about 3 minutes of key down operation after tuning the radios down to 5 or 7 watts and the heat sinks were taking on a slight glow. Well, it was clear that the radios weren't designed for continous duty at that power level. I detuned the radios even further to 2 to 3 watts and was able to get them to go about 20 minutes before the heat seemed to be a problem. Even though the power output was down considerably, the dissipation of the final was still substantial and the heat sinks are really kind of small. I wasn't sure that I wanted to pursue the project, expecially if there was a possibility of a link meltdown at the house. Then I was discussing the matter with Leon at a christmas party. He suggested that I convert the radios to 2 watts as provided in the manual by removing the final and strapping across the socket. Humm. This is possible. I looked at the manual and say, he' right. But it was simply more than just taking out the transistor and running a strap. There were several resistors and capacitors to be changed, also. Always the stickler, I went to the junk box and rebuilt the final just like Motorola designed it. The radio is actually offered in a 2 watt and 25 watt version as well as the 15 watt version that I had. When I finished, I retuned the radio and now it put out 3.5 watts in the UHF amateur band (my crystals had arrived from INternational). The final stayed rock cool, but the driver does get a little warm, but nothing that you can't keep your finger on. The heat does detune the circuit after about 30 minutes key down and the 3.5 watts drops off to about 2.7 watts or so. I haven't noticed any problems however with any of the transistors.

Now, the project begins in earnest. I bought a rack panel and mounted the radio, a power supply (Radio Shack, the switchers I bought in the Dallas sidewalk sale turned out to be duds) and a duplexer. The duplexer was scavenged from WA5FLT and he got them in a flea market or someplace. It was a UHF duplexer used in IMTS service. I always keep an eye out for these. They have 3 transmitter notches and one receiver notch. For low power in the 2 or 3 watt range that I am using the duplexer for, it has plenty of rejection and isolation and not a lot of loss. I put 3 watts in and got about 2.3 watts out. With 3.5 watts, the output was 2.7 watts out. After the radio had been transmitting about 30 minutes, this falls off to about 2.5 watts.

The radio draws about 300 mils in receive, most of this goes to heat a 100 ohm resistor that buddies up next to the receiver crystal as an oven. The crystal stays pretty warm and is nothing that you can keep your finger on for anything more than a couple of seconds. It takes the radio about 2 minutes or so to come up on frequency on receive. I found that the radio was not particularly good on receiver stability on frequency. It would drift, up and down, but with a strong input signal, there didn't seem to be a lot of degradation of the incoming signal. Dean said that there are some covers that cover the crystals that I might want to get to hold the temperature constant. I will look around for some of those.

The radio draws about 2 amps on transmit low power. Receiver sensitivity is pretty good on UHF, about .2 uto .3 to open the squelch. 20 db of quieting is about .5 to .6 or so, not bad at all. The receiver frequency tuning is sensitive to an aluminium tuning tool, so use some care and attention when setting it on frequency.

But, none of this would be any good if I couldn't get the radio to work full duplex and eliminate the desense. I studied the schematics and found that Motorola shuts off power to the receiver front end and IF's during transmit. There is another transistor that disables the receiver audio. By lifting a diode and a resistor, the receiver remains on during transmit. It was that simple. And because the transmit frequency is about 5 Mhz away from the receiver, the desense is fairly minimal, about 2 db or so. This means that if I am receiving a signal and key the transmit I have to increase the receiver signal about 2 db or so to have the same amount of quieting. If there is a full quieting signal, and the limiter is in saturation, there is no detectible difference in the the received signal when the transmitter is keyed.

In fact, with a little bit of judicious adjustment of the squelch, the radio, after completion, would operate as a low power repeater. I just had to tighten the squelch to keep it from keying on and staying on when the transmitter comes up. It should operate with no problem as a full duplex link.

The mechanical details of mounting the radio on the panel and building up a squelch COS and the basic controls I needed were the only problems remaining. I had a couple of potentiometers available that I would use for the squelch and volume controls. The Flexar chassis does not have the audio stage on the main chassis. This is circuitry external to the unified chassis. All I really needed was a squelch control and a volume control to set the level of the outgoing audio. The audio level is low, about a tenth of a volt or so with about 4 Khz deviation. This is plenty to drive the transmitter and should be adequate to drive most mike circuits in other repeaters or devices such as the shackmasters. If you have a Maxar chassis, it has the audio stages built onto the main chassis and the volume and squelch control are a part of the chassis.

I used some mounting hardware to put the radio on the chassis and got some L braces and T braces to hold the duplexer and squelch and volume controls. I drilled a couple of holes for the hardware and also mounted some LEDs on the front to indicate receive COS and transmit. The design was evolutionary and when I would think of something that I wanted to do differently, I would pull it off the chassis and rewire it. This earned me several catcalls from the saturday radio shop "spit and whittle" club members. "You still working on that?" and "Thought that project was finished?" I basically mumbled that a project is never finished and it is always a good idea to keep thinking about it and went on. It was difficult to ignore these guys though.

There is a slight pop in the receiver when the transmitter comes on, but this is only with a weak signal and is of a short duration. With a strong full quieting signal, the transmit is not noticeable and only occurs occasionally. Isolated "T" measurements show a lot of separation and isolation. Frequency rolloff is typical for a deemphasis circuit in a receiver with about a 3 db/octave rolloff from 1000 hz up and from about 600 hz. down. I haven't tried to pump a touchtone through it yet, though. No need to try now, either it works or it is banco. No need to get upset now. Plenty of time for that later.

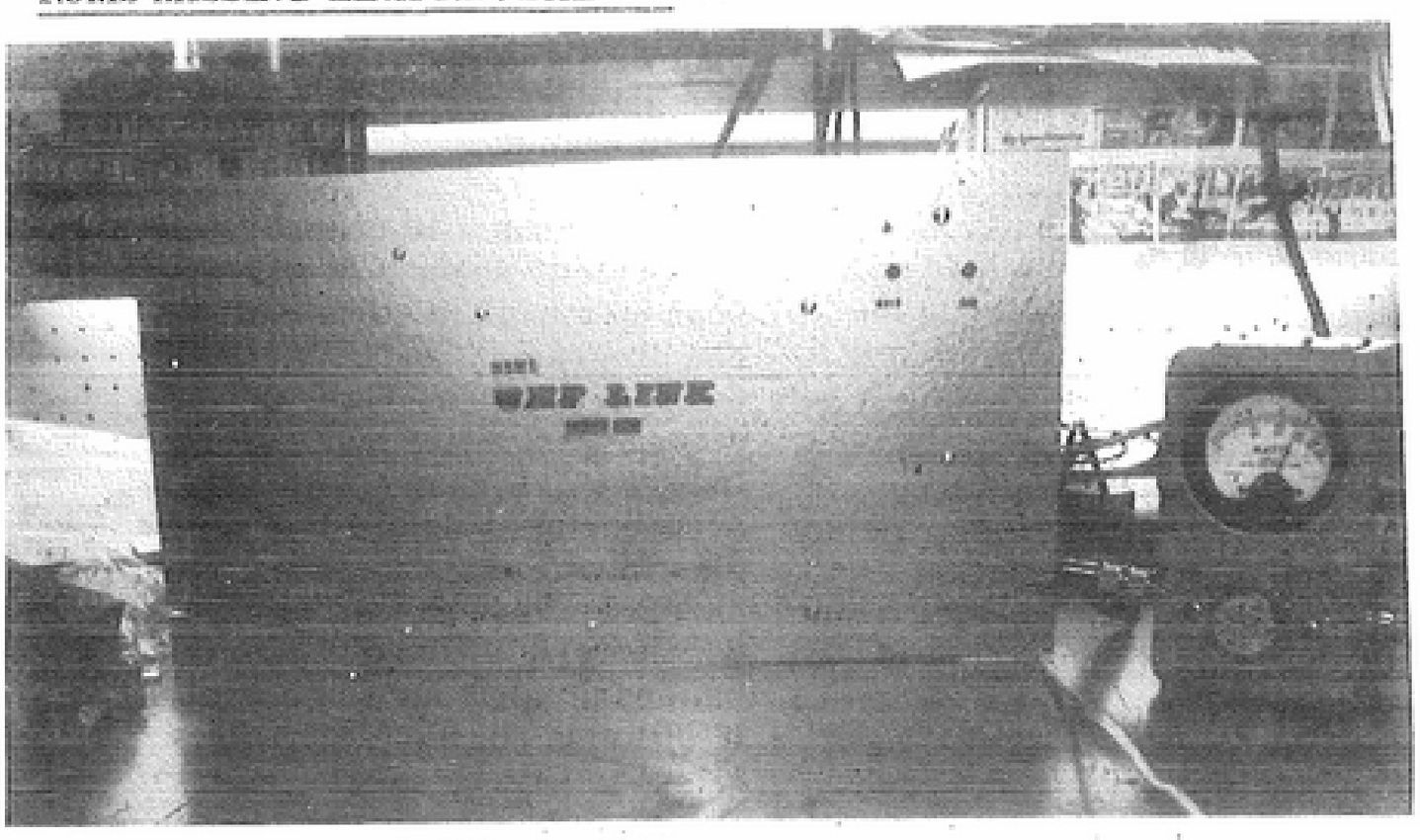
I put a LED in parallel with the PTT circuit so I would have a front panel indication of when the transmitter was on. The COS took a little bit of noodling with the squelch circuit, but there is a quick and easy solution. The main squelch switch transistor, Q84 has about .22 volts on its collector when it is unsquelched and about 8.7 volts when squelched. This biases off Q18, the audio preamplifier. The COS circuit was a simple matter of tacking on a VMOS FET VN10K to the collector and inverting the signal and driving another VN10K for an "open collector" output. By the way, the VN10K is a versatile and useful transistor. It has a gate input impedence in the megohm range and will sink about 300 mils continously. The FET starts switching on with about 2.5 volts on the gate. The only way you can get into difficulty is to put negative voltage on the gate. It has a protection diode from the source to the gate and negative voltage will bon voyage it. It basically is a FET version of the 2N2222. I show a schematic of the COS circuit on the next page.

This is not a project that I would recommend to anybody. Especially, if you have to convert the radio to low power. But, if you can get the radios cheap enough and have some time to fiddle with them and need a mobile or portable repeater with possible use as a full duplex link, I would recommend that you check the Flexar and Maxar market. I have seen them with a variety of prices depending upon condition. I will have my eyes peeled for another set for the VHF repeater or to open a full duplex link to another repeater. I haven't started building the other half of the link with my other Flexar, but am using the link with another repeater link on the other end.

I have omitted a lot of details about the project. If there is some interest, I can add specific items in future issues. But since this is not a construction article, I thought that the usefulness of writing about it is to show how the project evolved and provide others with some ideas. We have pictures on the next page and film at Eleven.

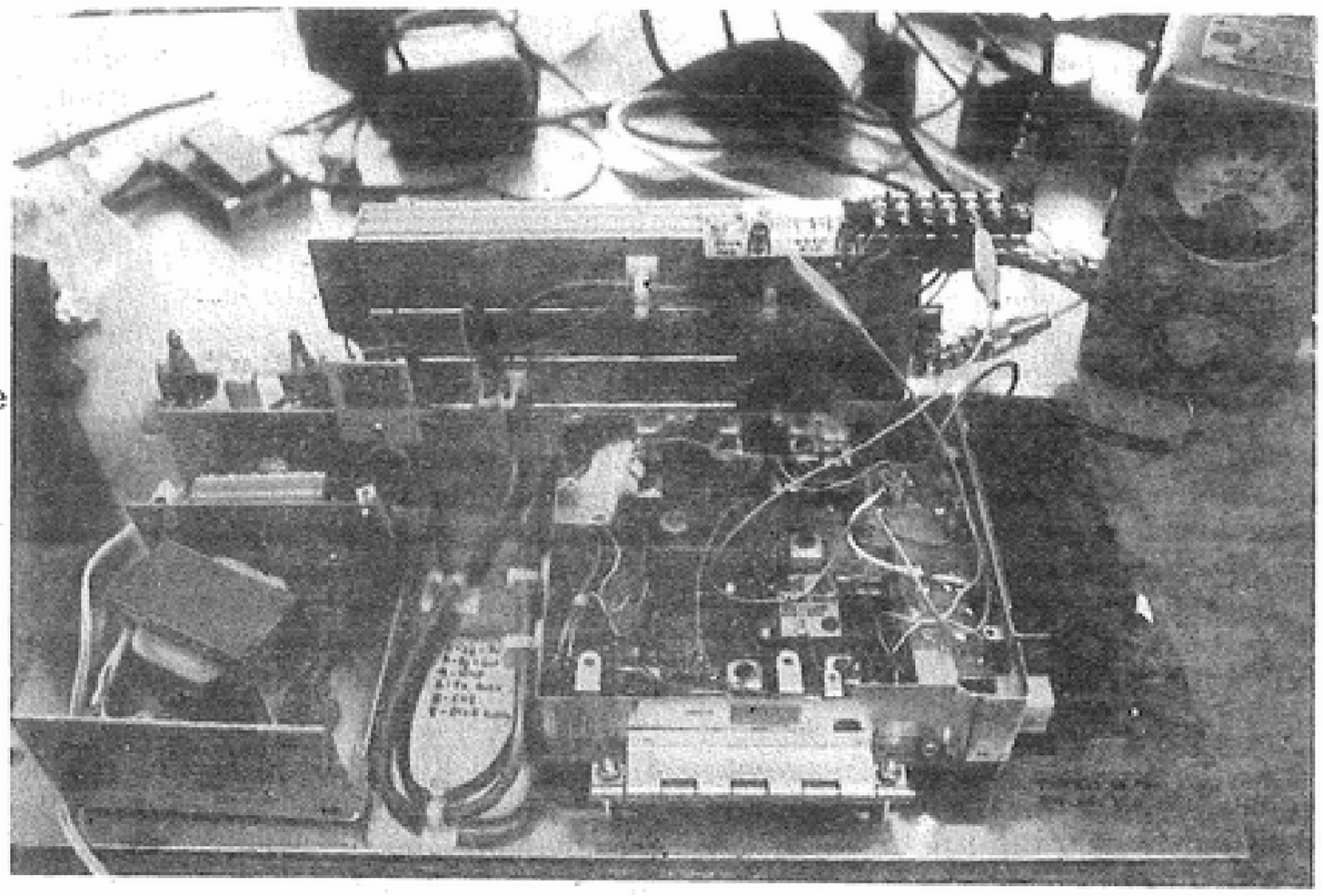
Micheal Salem N5MS

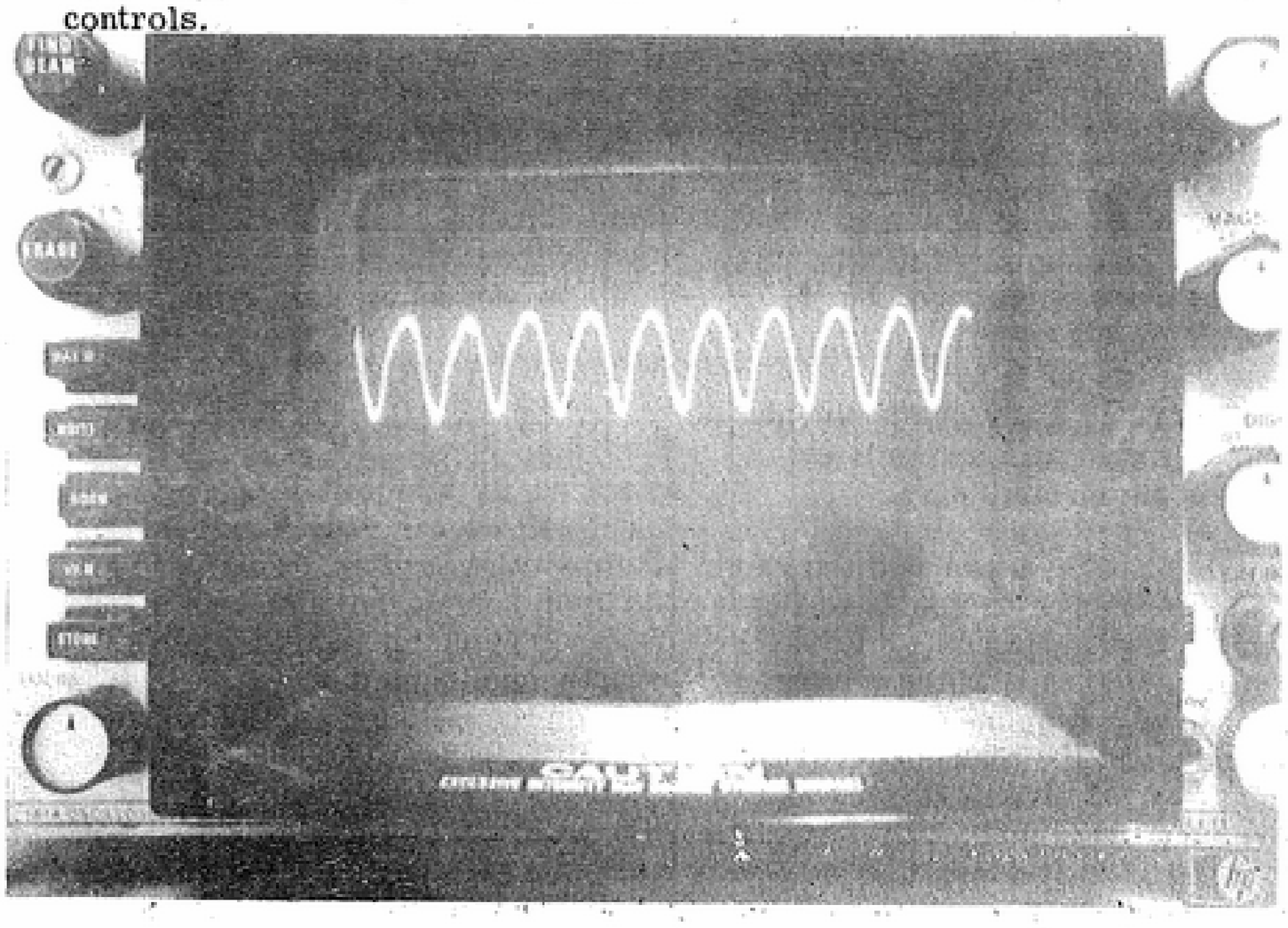
N5MS MISSING LINK REVEALED!!!!



Once again, through the magic of Greenshields' Magic Power and Lite, the mysteries of photography are graphically brought to the Collector and Emitter. Behold, to your left, the N5MS Missing Link (UHF, that is). Bird wattmeter to your right is plugged with a 5 watt UHF slug and the power output is about 2.7 watts out. The Link is powered up and fully operational on both transmit and receive. Note in the upper right hand corner of the panels are two LED indicators for COS and PTT. The most expensive part of the entire project was the outrageous charge, about $30.00 for the panel!!

The equipment behind the panel!! Mysteries of UHF revealed. In the bottom right hand corner of the panel is the Motorola Flexar base station mounted on standoffs. The Flexar has a hinge on one side of the chassis and will fold down for service work. To the left is the Radio Shack power supply. I put a 15 volt zener across the output and changed the circuit breaker for a fuse in the output line. The cover is left off for cooling and because I don't remember what I did with it. Above the power supply are the squelch and volume controls mounted on a T brace bent to mount to the panel. Just to the right of the controls is a piece of perf board on which the COS circuit is mounted. The multi-conductor cable between the radio and the supply brings out the various connections to the squelch and other controls.





(above continued)
The Duplexer is located on the top of the panel and is mounted with a couple of L braces. A terminal with audio in and out and COS and PTT connections is mounted to the duplexer. There is also RCA phone output and input for the audio for molded connectors. Wattmeter to the right is still reading 2.7 watts!!!

To the Left is a picture of the waveform through the receiver of a 1000 Hz tone modulated at about 5 Kh deviation. Distortion may be attributable to the replacement Crystal filters or the quadrature detector. Well, nobody's perfect! Hey, if anybody has a Flexar or Maxar for sale cheap, let me know. I could use a couple more. Oh, Yeh, UHF, only.

Micheal Salem N5MS

IF I COULD TALK TO THE AIRPLANES. . . .

(Hand-held aircraft Radio Dept)

For some time now, I have been contemplating the purchase of some kind of handheld aircraft radio for ground and emergency backup use in my plane. The old airplane came with a set of ARC radios --300 series -- and the record clearly reflects that these radios are not the most reliable to come down the pike. The design is fairly old and the parts selection was not always the best. I think that they just weren't designed to take the heat that builds up in a parked airplane. One of our radios failed after we got it. The problem appeared to be in the synthesizer. Alan, one of the partners, and I pulled it out and threw it up on the bench and started pulling parts out of it. Alan is a pretty salty dog in radio repair and virtually unafraid of anything and soon we were down to our elbows in the synthesizer where we found the VCO not oscillating. The transistor checked good, it just ran out of gain and fell into oscillation. We didn't have a spare, so I suggested that we swap the transistor with a buffer and it worked!! Be tween slapping ourselves on the back and putting the radio back together, we ignored one of the more important thoughts and that is that the radio really is not very good.

Recent articles in aviation magazines consistently rate the ARC radios for airplanes as near the bottom of the heap in reliability and repair. We have since had to go back into the radio another time for the same problem, this time with the com synthesizer (the nav synthesizer was the first to go). I understand that somebody offers repairs on these items for a $75.00 exchange or so, and that is not bad money for just changing a couple of transistors.

There was some relief as far as reliability when we got a sunscreen for the windshield of the plane. But eventually it wore out and we were negligent in getting another one and soon, what do you know, another problem with the radio. Then another and soon we are down to one nav and com only.

Well, this kind of reliability is not very comforting when tooling along. Little wonder that I have no interest in getting an instrument rating. The anxiety alone would probably end it worrying about a radio failure. So this was just about the time that a variety of companies came out with some new handhelds that operated on the aircraft frequencies. The first one was crystal controlled and operated on your choice of about 5 frequencies. But, soon, synthesized versions started showing up and now you have your choice of a Narco, Icom, STS, Terra and Telex. Some even have a built in Navigation decoder to detect your bearing from the VHF Omni stations. This is the STS and the HT-830 Narco. The Narco looks a lot like a Santec, but I understand that Narco borrowed the case, but builds it own guts. Icom offers a radio that is a look-a-like for the IC02AT. It is 1.5 watts AM with 5 watts p.e.p power output. It covers all 720 Communications channels and all 200 Navigation channels with provisions for 12.5 Khz= channels if you need them. The nice thing about the Icom is that it would match all the accessories that I already have and has a flat rate repair fee guaranteed. Unfortunately, it doesn't have the Omni VOR readout, a real oversight. I thought about getting the Narco so after getting a refund from ACC for some projects for the RC-850 they have decided to delay, I decided to spend the money on an aircraft handheld. I got a copy of Trade-A-Plane from K5HMD and settled down for some serious telephone tag on the 800 numbers. What? Nobody has a Narco? It seems like that the factory only spits them out in groups of two or three and nobody sees very many of them. Well, my need is immediate, especially since I decided to buy one. I checked around and the Icoms were in stock. The price had gone up slightly since the value of the Yen changed, but I ordered an ICA2. The guy said that I would have it by the next monday and by golly, he was right. It came in just as I had to leave town for an overnite stay.

When I got back, I charged the radio up and went down to Dean's to throw it on the test equipment. I had been listening to it while driving out of town. It seemed to hear approach and the planes OK. I could hear the ATIS at Will Rogers and Norman Westheimer. The radio has a squelch, but it doesn't sound like FM. The unsquelch condition is much quieter. If you put the noise blanker on, it gets even quieter. You almost have to put it up to your ear to hear it.

The radio has a 10 channel scan and priority scan. It will also scan up a band in steps that you can program. The LCD display has a little bargraph display that acts as an S Meter and battery indicator. It comes with several accessories including a cheap plastic carrying case and a mobile charger. Just like the 'IC02AT you can plug it directly into the battery of your car and operate it. It will also charge the battery. It comes with the CM7, the big commercial Icom battery pack. Still, the radio will run down after about 8 hours of continous operation. The charger is a 12 volt DC 300 mil wall plug in unit. I had a couple of these that I had found several years ago at Dayton, so I immediately had a couple of spares.

On the bench, it seems to meet its specs. Power was 1.4 watts steady carrier at 118.0 to 1.5 watts at 136 Mhz. Receiver sensitivity was about 2 microvolts for full scale reading on the LCD S meter and the modulation set about 90 percent. On transmit, the radio suffers with the same problem that most Icoms have when you want to use them in an airplane and that is hot mike gain. The solution is to open them up and add about a 470 ohm resistor directly across the mike to knock the gain down or use it with an external mike. I set it up with the headset HS-10 and backed the mike gain down. External noise (our test set was the air compressor) was down to about 20% modulation while standing nearby while it was 100% without the headset and the radio microphone. Receiver sensitivity rose to 5 microvolts at the lowest of the Nav frequencies.

The radio is big and heavy, but that is not really a factor because I doubt that I will be carrying it around like my other radios. I would like to rig up some kind of holder for use in the airplane and already have an antenna mounted on an inspection plate on the bottom. All in all typical Icom quality. Now, if they could just do something about the current drain on these hogs and build in a CDI for the VOR's . . .

Micheal Salem N5MS

OPRA, Inc.

PRA, Inc is nearing contractual aggreement for access to tower sites over 3/4 of the state of Oklahoma. These tower sites will be outfitted for operation on the civil emergency network of 145.09 MHz. This also includes the dissemination and collection of weather-related data in conjunction with the with National Weather Service Forecast Office (NWSFO) via a computer interface and a data-base access program with menu-driven operation. The data will be WARNINGS, WATCHES, RADAR DATA MAPS (these will require a transparent overlay) and Field Reports similar to those collected via VHF repeaters.

OPRA, Inc needs your help! If you wish to be a part of this precedent- setting packet activity, JOIN OPRA now.

The dues are $12 per year and the address is:

OPRA, Inc.
% J. Frank Fields/KB0QJ
3820 N. Riverside Dr.
Bethany, OK 73008

I am the President and acting Treasurer. If you would like more information, my station is up 24 hours on 145.09 MHZ. Digipeaters now operational on 145.09 are: MWC, NORMAN, PUR (Purcell), RUSH (RUSH is now a dual-frequency digipeater) and KB0QJ.

Also, OPRA needs qualified service technicians, who are also amateurs, in Greer, Stephens and Le Flore counties who must be certified and bonded for access to the controlled sites in accordance with the contract with the company who owns the sites. This company operates a microwave communications network and limited access is required.

In Eastern Oklahoma digipeaters are: Ft. Gibson, MKO (WB5AOH), Muskogee, W5E JK-2, and Cavanaugh Mountain (near Fort Smith), WB5HLR-1. The Tulsa Repeater Organization plans to be on 145.09 soon. And several more digipeaters are planned which cover the weaker areas along with cross-banding .

OPRA may not achieve total state coverage before the spring tornado season, but we will certainly try. WE NEED HELP from you!! OPRA,Inc is attempting to acquire TNCs and dual-port TNCs for more than 10 sites, along with radios, feedlines and antennas. The cross-banding will require equipment in the 220 Mhz band and all of that type of radio equipment.

Mark Kleine/N5HZR has devloped the precurser program for the NWSFO data-base computer access and he is operating it now on 145.09 MHz in Norman as a Mail-Box program for the purposes of de-bugging. Use it freely as a mail-drop for messages to me or others involved with OPRA, Inc. for the OKC-NORMAN-PUR-Lawton area. Get used to how it works, for this will be similar to accessing NWSFO data base.

73 and CONNECT to KB0QJ on 145.09 MHz for more info, CUL, J///

Blessed are they who QSL.

This is for junior ops: What happens when you phone a bee? (You get a busy signal).

Know how to make an elephant stew? (Don't answer his CQ).

Your column editor is quite familiar with a lie detector in that he married one.

We once knew a W5 who was so tough he ate marble cake and brick ice cream.

Our copy is so bad this month that we can't afford to read it ourselves. We are writing this column blindfolded.

Lunber Jacks are always stumped.

A librarian knows volumes.

Undercover Agent: Snooperman.

The person wearing a smile is always well dressed.

In the Aleutians, every call is a toll call.

They've found something that does the work of 5 men..A woman! ANTENNA FACTS: In a recent antenna raising bee someone accidentally drove their car over one of the elements of the beam laying on the ground and it was immediately assumed that this was the driven element.

Fort Meyers Modulator

I think there should be more than one class of club dues:

1. $1.00 for retired people.
2. 15.00 for normal people.
3. 50.00 for repeater hogs.
4. 200.00 for a life membership available to those over 90.

What do you think?

Parity bit-union's bargaining gimmick
P-junction-crossroads with comfort station
Four bit latch-cheap lock
Integrated circuit-nonrace track
Discrete device-little white lie
Lightning arrester-fast cop
Transcient suppression-anti-vagrancy law
Square wave-conventional hairstyle
Four terminal network-small railway company
Pi section-light lunch
Low pass-indecent proposal
Disk crash-UFO accident
Hex code-witchcraft standard
Push-down stock-a romp in the hay
Floppy disk-tired UFO
Binary loader-double scotch
Core dump-orchard compost heap
Indirect addressing-PO Box
Memory management-brainwashing
Common collector-ordinary garbage man
Log amplifier-tree fertilizer
Full duplex-overcrowded flat
Power connection-friend in high places
Power switch-change in govt.
Delayed trigger-gunfight loser
Monostable-for one horse
Twisted pair-the odd couple
Stripline-line outside nightclub
Most significant bit-presidents wife
Antenna coupling-insect foreplay
Screwdriver adjustment- more vodka
Crosstalk-angry words
Long term drift-Kon-Tiki expedition
Burn-in-pyromaniacs convention
Output impedance-work stoppage
Megahertz-large car rental co.
Dedicated computer-loyal accountant
Propogation delay-gestation period
Rise time-interval between pay raises
Flip-flop-unpopular reverse side of a hit record
EXCLUSIVE OR-mistress
Lookahead adder-far sighted accountant or snake
Decade counter-the grim reaper

Automatic gain control-wage an price regulations
Balanced modulator-mezz soprano on a tight rope
Dynamic RAM-a lothario of th pasture set
Sync period-boat warranty time
Hex inverter-device for witc countermeasures

NOVICE ENHANCEMENT RULE CHANGES

In October 1984, the ARRL Board of Directors set an ambitious goal of growth in the Amateur Service. From that grew the realization that a more attractive entry level license was necessary to meet that goal--a license that would allow a sampling of the smorgasbord of present radio technology. Thus, the concept of Novice Enhancement came into being. And it gained almost universal support. It was simply a matter of ironing out the details. That process was more than a year in the making, including comments in response to the FCC's proposed rulemaking released last April. The wait is over!

On February 10, FCC released the text of the Report and Order in PR Docket 86-161, Novice Enhancement. The rules become effective 0001 UTC March 21, 1987. The words which follow closely parallel the language of that Order.

BACKGROUND

On April 18, 1986, in response to several petitions, including one from the ARRL as authorized by its Board of Directors, the FCC adopted a Notice of Proposed Rule Making (NPRM) proposing to enhance Novice amateur privileges. The FCC proposed to authorize Novices voice and digital privileges in the 10 meter, 1.25 meter (220 MHz) and the .23 meter (1270 MHz) bands with transmitter peak envelope power maximums of 200 watts, 25 watts and 5 watts respectively. The FCC also requested information about changes in the number of Novice examination questions, the number of Volunteer Examiners (VEs), and whether a better balance between the requirements and privileges of the Technician license should be sought.

The proposal's purpose was to motivate prospective amateurs to join our ranks and to stay with our hobby and to advance through its five-tier licensing structure. The Commission wanted the licensing structure to become more responsive to the needs and desires of the amateur community.

COMMENTS

The Commission received more than 350 comments on the proposal. More than 80% supported it, believing that enhanced Novice privileges would attract and retain more persons in the Amateur Service. Dissatisfaction with the telegraphy-only privileges was blamed as a major cause of Novice operators dropping out of Amateur Radio. Manufacturers and distributors of Amateur Radio equipment said they hoped Novice Enhancement would curb the loss of operators and consequent declining sales of equipment.

The major concerns in the comments dealt mostly with the fear that excessive privileges for Novices could diminish the incentive to upgrade to a higher license class. There was also a concern that the expansion of the Novice subbands could jeopardize the usefulness of the amateur beacon system on 10 meters. The ARRL, in its comments, stated that amateurs traditionally observe voluntary operating restrictions when necessary for the protection of beneficial operations like the beacon system, and that should not be an area of concern. About 5% of the commenters were apprehensive that Novice phone privileges in the 10-meter band could attract unlawful operators from the nearby 11-meter band.

The comments the Commission received generally concurred that the Novice written examination should closely correspond to its privileges. They favored increasing the written examination to 30 questions or even more. The repeated concern was that Element 2 should not be so difficult as to discourage newcomers.

The ARRL had requested two Volunteer Examiners (VEs) to administer a Novice examination. This was to minimize the possibility of examination fraud. A number of comments also recommended that the Novice examinations be prepared and administered under the Volunteer-Examiner Coordinator (VEC) system. The ARRL had opposed this approach because it would increase the burden on the VEC system and possibly reduce the availability of examinations.

The FCC said that the possibility of enhanced privileges for Novices has already stimulated growth in the Amateur Radio Service. In the 12 month period between October 1, 1985 and October 1, 1986 nearly 21,000 new persons entered the Amateur Radio Service, an increase of 20.75% over the previous 12 months. Furthermore, the number of licensees dropping out of Amateur Radio decreased by 15%. FCC believes that these are indications that changes in the entry level license are appropriate.

RULE CHANGES

220-MHZ BAND: The Commission said that VHF privileges for Novices would create the interest that is needed for amateurs to continue in the hobby and at the same time motivate them to advance to the higher classes. The Commission then authorized 222.10-223.91 MHz subband for Novices using all modes with a maximum power of 25 watts PEP. FCC said it chose these input frequencies based on the voluntary band plan now under review by the ARRL. Novices cannot be licensees, control operators or trustees of repeaters, even when the input and output frequencies of a repeater fall within the Novice subband.

1270-MHz BAND The FCC opened another Novice subband at 1270-1295 MHz with all available emissions, limited to a maximum power of 5 watts PEP.

10-METER SUBBANDS: The subband for Novices and Technicians will be enlarged on 10 meters. The new subband will be between 28.1-28.5 MHz: CW and digital modes from 28.1 to 28.3 MHz; CW and SSB modes from 28.3-28.5 MHz. Novice and Technicans are limited to 200 watts output in this band, but other licensees are not similarly limited, (unlike on the 80, 40 and 15 meter Novice subbands).

ELEMENT 2 CHANGES Element 2, the Novice written examination is largely based upon CW operation. Now that Novices are to have voice privileges, FCC believes that the examination should be broadened and will require 10 additional questions, for a total of 30, to make the scope of the Novice examination appropriate to the new privileges, without creating a significant barrier to potential Novices.

TWO VE'S FOR NOVICE EXAMS: FCC agreed with ARRL that the added safeguard of having two Volunteer Examiners (VEs) was justified athough there may be isolated areas where locating two VEs may be difficult. FCC Form 610 will be revised to show the certification of two examiners.

NOVICE EXAMS NOT ADDED TO VEC: FCC said that to incorporate the Novice examination system under the VEC system would nearly double the workload and expense for the volunteers operating that system, and agreed with the comments which said that the present system is more convenient and less stressful for beginners.

FCC WILL SPLIT ELEMENT 3: The present Element 3, the General/Technican written examination, requires Technicians to be knowledgeable about General class privileges. FCC said that to require any applicant to be knowledgeable about privileges which the license does not authorize is inconsistent and a burden upon applicants and instructors. FCC will separate Element 3 into two parts. Technician class questions will be placed into an Element 3(A) and General class questions will be placed into an Element 3(B) VEC question pool. Thus, VEC's will now have to revise Element 3 in order to move certain questions to Element 2, and divide the remaining Element 3 questions into the two sub-elements as appropriate.

GRANDFATHERED: All present Novices and Technicians will be authorized the new privileges without additional testing. FCC does recommend that present Novices become knowledgeable in the new requirements before using their new privileges.

FCC FORM 610 CHANGES: The Form 610, which is currently undergoing revision to reflect written examination credit, will undergo further changes to reflect two examiners for the Novice class, and to include the separation of Elements 3(A) and 3(B).

As it turns out, the Report and Order is very, very close to the original ARRL proposal submitted in June 1985! FCC, in this action, has retained the basic goal of the ARRL--to make Amateur Radio more attractive to the newcomer, without compromising the entrance requirements that are so important to maintaining a quality Service.

The ARRL Letter

TRADE TRADE TRADE TRADE TRADE

Will trade 800 rolls of red 11/16 in wide by 8 in diam and 2 in core boxed teletypewriter perforator tape for teletypwriter roll paper. Will alos consider donation of tape to nonprofit agency.

Joe W5PNO 321-2099

SIGN in a travel agency window: "*Please go away.*"

MORE QCWA

grapes, but mostly for not very good reasons. Let's give it a try, and see how it works out. If self-control, self-policing, and good manners break down with this move, you can bet the next attempt to expand amateur band useage will be much more difficult.
73 for now... Rob AA0O.

<<W5AS INFORHATION>>

QCWA, Chapter 63 on the air operation for January 1987:

SESSIONS	4
CHECK-INS	161
TRAFFIC	17

Our birthday list for Feb.'87 did not appear in the February C&E. For catch up belated birthday greetings to all!!

02	Leland Smith		W5KL
02	Harry Gartsman		W6ATC
05	Rilla Bolger	YL	W5AXM
08	Fern McKinzey	YL	W5YPN
12	Red Haler		W5RDE
13	Lee Boswell	YL	W7LOU
14	Flossie Harris	YL	K5DZV
16	Charl Cochran	YL	W5CXE
17	Jerry Broudy		W5HCJ
19	Anna Hubbard	YL	W5HXR
21	Dorothy Engle	YL	W5NDJ
24	Mary Bryan		K5PBE
25	Betty Wood	YL	W5NUT

Sooo now we are back on track. Here is our list of birthday folks for March'87. "On-Track" greetings to all!!

05	Clifford Collier		W5LJI
10	Ina Hiller	YL	W5HFU
12	Mel Bolger		W5AXH
23	Bob Ashby		W5HXL
23	Denise Bowers	YL	KX5W
25	Mary Rauscher	YL	K5CXP
30	Wilma Edmonds	YL	W5GOO
31	Edith Jessup	YL	W5EIO
31	Ella Onspaugh	YL	w5NTR

<FEB 4 LTR TO ALL CHAPTERS>

Subj: Nominees for '88 Dirs.

The nominating committee listed below are to locate & obtain the consent of candidates for five (5) QCWA Directorship vacancies for 1988. We ask for your cooperation and involvement in obtaining the nominees. Please canvas your members. You may have a member who has the qualifications for a director & would like to serve from your chapter.

This is a responsible and rewarding position. There is a lot of fellowship involved! It is necessary, though, that the candidate understand that very little of their expenses will be recouped & that they have at least two meetings to attend each year.

The letter is signed Al Smith, W0PEX, , Nominating Chairman (NOMINATING COHMITTEE 1988)

Any Chapter Members interested?? Please contact Howard Baker, W5AS, Secretary/Treasurer!!

<<JUST FOR FUN>>
OR
<<YOUR CONSIDERATION>>

I recently encountered a very interesting word, viz-boustrophedon(bou-stro-phe-don). From early Greek & which translates- "turning like oxen in plowing". The idea grew into a scheme of writing alternate lines in opposite directions, ie (L to R & next from R to L).

Perchance this was their way the of (Lefty's) the placate to early Greek period. All of this handedness left that suggests has gained only meager ground in case A .centuries many over point (LH golf clubs). Credit Author to goes idea this for Paul Dickson "A Connoisseur's -wei,new and old of Collection rd and Wonderful, Useful and -def the But .WORDS Outlandish" inition comes from Webster's!!

Some of the above might seem to suggest that Left Handed persons have a case to opt for more equal rights. As a(Right'y) can only suggest a Lobbyist faction could stir the pot to bring forth changes. There do exist some stigmas-one such as "Leftist"(a radical) comes to mind. Our sagging economy might be recharged by a mild "Industrial" swing to design & manufacture "Ambi-Items". Door Knobs already are; how about valves & electric lamp rotary switches. CCW clocks & watches and also right wrist wristwatches would sell-Hethinks!! Most of the above can be either front or back burner material. Readers comments are sincerely invited!! Just seem to remember that a LH Draughtsman has a tough time??

Vy 73, Fred, W5NL

.....

Kay

FEBRUARY MEETING...
Last month's meeting was a big success we had a 'Radio Check' night. A big thank you goes to W5TXF, KA5SJK, and W5ZWM for bringing their IFRs and doing the work. This was so popular we may have to do it every February since that is usually a month that we have a hard time getting anyone to come.

MARCH MEETING...
The next meeting is not too well defined yet. Check in to the Monday night 9 pm nets on .97 to find out what we will do. There will be some type of program if we can get it set up in time. Also be thinking about the meetings during the summer. Since we are meeting the VO-Tech and it is closed during the summer we may want to not hold meetings during that time. Last year there were several meetings during the summer months when no more than 4 or 5 showed up. We will vote on this at the March meeting, so be there.....

PUBLIC SERVICE...
The Groundhog Day Run (15K) went very well thanks to our help. We had a very good turnout from the club and others. Thanks to each of you. The running club that sponsors these runs thanks you too. Our next run is a Bi-Athlon on March 28 it will also be at Lake Ponca. If you can help with this let me know. The starting time will probably be an hour earlier than the last run. Since it is a bike ride and run we will need even more help than last time. Mark your calendar and be there. There is also some work being done to have the Ponca City Grand Prix car race again this year on the July 4th weekend. We have already been asked to help with communications and some of us will help with other preparations too. If you are willing to help contact KA5SJK or myself.

COMMUNICATIONS TRAILER...
There's still some work to be done on the trailer. We moved it over to KA5ZMC &

Continued NEXT PAGE

-FILE ZERO-

Chapter 63, Central Oklahoma

Lest I forget: The next quarterly meeting will be April 19... Place and time to be announced. More later when K5DLE gets it firmed up.

Glo has had me by the ear lately, and has been after me to clean up this RAT'S NEST I call my study! As a result, another pickup load of junk (not junque) has been hauled off, with more to come. Some of the copy I had been hoarding for the day I could once again write this column may have gone out with it. I can't find the list of winners at the January drawing. Oh well, you all know who you are, and we losers know who we are. Thanks once again to Mary and Sam Stephens, W5HZD for donating the very fine porcelain and china items for the drawings. Glo says that Mary is cooking up something special for the April powow. I neglected to get a head count, but we had a fine turnout for the January gathering. Thank you all for coming, and to Gene and Larry for the arrangements and the program.

We undertook a fairly detailed discussion concerning the ability of this Chapter to sponsor a National Convention in 1988. It was the concensus of the group that we probably did not possess the collected ability to successfully complete such a major undertaking at the present time. I have regretfully communicated same to Leland Smith, W5KL via letter. There was some talk about possibly making a run at 1989. However, as matters stand now, no plans are afoot in that area. I apologize to the membership for my initial enthusiasm when first approached on the subject by W5KL. It seems that there are certain types of enthusiasm which are not contageous, and QCWA national conventions in Oklahoma City is one of them.

In line with the wishes of the Board, I have communicated to CORA that QCWA Chapter 63 will sponsor a breakfast at HH-87. This will once again be a cooperative arrangement wherein HH-87 provides the facility, takes advance reservations along with HH-87 registration, and turns the proceeds over to us. Chapter 63 will make our own arrangements with Lincoln Plaza for the service, set the time, and provide the program. As usual, the breakfast will be open to all (whether registered for HH-87 or not). It worked well last year, and hopefully this year will be equally successful. We will also man the ARRL booth in the lobby again. Howard will once again be "boss", and the rest of us will have to "work".

I had part of this written and "in the can" and was holding it until after the CORA meeting.

Sorry about losing the copy for this month. There was a short article by Carl Drumeller this time. Also misplaced. Carl, I promise I'll find it and get it into print!

P.S. You may note a marked improvement in my signals on recent Sundays. I pulled down the old wire, and found I had smoked a Van Gorden Engineering 1:1 balun-feeder. This particular wire is resonant around 3600KHz, but I only use it on 3855KHz. (That makes sense, don't it?) Operating that far out of resonance requires a husky tuner for the Henry 2K-4 running full bore. I think it safe to conclude that the feed-point reactances and the power were probably a bit much for the poor old thing.

Note to Larry: Unless you duplicate the above conditions, I wouldn't expect you will have a similar problem. The Van Gorden is OK, and should serve you will. Just don't try to run full-bore into a mismatched load with it!

Glo and I are taking delivery on a new travel trailer. The little Airstream has given way to a new big Argosy. At this writing, the unit is somewhere between the factory in Ohio and here. This trailer is big enough to full-time in, and we are both looking forward to moving in. There is little doubt that our days of dragging our trailer over back country trails, up and down mountains, and out into the boonies are over. This new monster is much too bulky for that sort of thing. So from now on we will be a little more "civilized" during our travels. I've never pulled anything near this size, and am more than a little intimidated by the prospect of having to be a bit more careful planning routes, pulling into narrow, cramped places, and taking on rough roads. However, we've agreed, we are getting a little long in the tooth for some of the more heart-stopping adventures we've undertaken, and need to get a bit more conventional. The long-term comfort of a bigger trailer is somehow more appealing as our bones get more brittle, and our joints stiffen. We are looking forward to our first trip in the new wheels providing the work pressures permit, sometime this early spring. However, we do not plan a sedentary existence in our new life. The trail bike will be attached to the back of the trailer, and we have a new collapsing boat for the top of the suburban. The darned boat is real clever. It folds up to about the size and shape of a big surfboard. Slips right up on top of the car, and looks like a big surfboard up there. Haven't had it in the water yet, so can't make much of a cunsumer report on it, but it looks like it will do just fine, even in rough water. More later on that subject.

Been listening with some interest around the bands, and in eye-ball QSO, to the comments concerning the "Novice Enhancements" which will become effective March 21. The comments I'm hearing are mostly favorable, now that the issue is settled, and the new sub bands, and new operating privileges will become reality. I still hear some faint echos of sour

Continued NEXT PAGE

Edmond Amateur Radio Society
Reaching out to Oklahoma and the World

REPEATER FREQUENCY
147.135/735

WHATS NEW FOR MARCH??

Well here it is March already and I've just got use to Febuary. We do have a lot going on this month. Maybe if we start the month off like a lion,maybe it will end like a lamb.

EARS will have its first blood drive. The 14th of March we will meet at Fannys restarant at 9:30 for breakfast, then we will all go to the Blood Institute, 526 E. Memorial Rd, at 11:00 am to give blood. The donations will be credited to EARS we hope to build up a supply so if any of our members need blood it will be there for them.

Our club station is well underway. Larry Traub N5IXV is heading up the committee for the club station. He will organize the instalation of our new rig and set up of the station. Anyone intersted in helping with the station. should contact Larry N5IXV.

As long as we are on the club station the City of Edmond has offered us tower space. They plan to extend the present tower another 30 to 40 feet and we will have use of it. Provided we can come up with some antenas for it. we are in need of an Hf beam, 2 meter beam and a rotor capable of turning the beams. We need to come up with the equiptment to show faith to the city. So they can justify the expense of the tower. Any one having any of this equiptment and wishing to donate it to the club please contact Larry Traub or any one on the board. your donation will help put the station on the air.
We would like to thank KBOOU Cal for his donation of a 2mtr beam and the use of a rotor until we get one for the tower. We will still need another 2 meter beam for the trailer .

Rodney Beam has acepted the task of coming up with a orientation class for the new members of EARS on the dos and don'ts of the club, and of the operation of the repeater. This class is by no means limited to new members everyone could use a update myself included!!

On March 20 EARS/EARC will have their first anual hampout it will be at Canton Lake, in the Canadian area on the west side of the lake .

Whats a hampout? We'll its like this it is similar to a campout but only spelt with a H(ham) there will be HF/VHF and packet stations setup.This will be a weekend campout starting Friday night and ending Sunday. If you plan on attending please contact kBOOU Cal. The fee for the campsite will be $7.00 per night. The first night's fee will be needed before the hampout as it will have to be paid in advance to reserve the site. you can contact KBOOU Cal at 751-3620 .

The 850 controller will be here before you know it. I'm looking foward to its arrival. With it we will have plenty of room for all members to have a speed dial code. Speaking of codes, it's that time of year again for the acess codes to change. So be sure you are current with your dues. To insure you are included on the change of codes.
For new membership or to keep your membership current,please contact Edith Vaughn KA5YPX at 348-2961 or by mail the address is 1020 Juno circle Edmond,Okla. 73034 Or Im sure she will be willing to take care of it at our monthly meetings.

One last item,but not the least their was an article tnat was inadvertently left out of the febuary issue.

with a lot of work from a lot of club members working together. a club QSL card was designed, this card reflects our special services club logo. and has plenty of room for your call sign. a reflection from 1986 that will last for many years to come.

73 to all ! KA5WIS Lee

Don't forget that the Lawton Hamfest will be held Saturday March 28. I don't remember the exact location but you can find it easily.

CLUB CHALLENGE FOR THE '80s

In order to promote new ARRL memberships and to give additional revenue to your club treasury, the ARRL once again announce it's "Club Challenge For The '80s."

All actively affiliated clubs are eligible to participate. Every NEW ARRL menber signed up will bring in $5.00 for your club's treasury, and closer to winning an All Band HF Transceiver at the end of the competition.

Three radios will be awarded, (EARS has already won one of them) one for each of the following three catagories: Small clubs-25 or fewer members, Medium clubs-26 through 75 members, Large clubs over 75 members.

Only NEW MEMBERS qualify for the $5.00 commission. Individuals whose last League membership expired two years from application date are considered new members for this compitition.

Clubs still receive $2.00 for each regular or senior membership renewed.

Send your application as soon as possible to: ARRL, 225 Main St, Newington CT 06111.

KAY COUNTY CONT

KA5ZJM's (Tim & Lin) house this past Saturday. They will be setting up some work days to finish it off so please help when you can. We need to have this ready soon as storm season is almost upon us.

NOVICE ENHANCEMENT...

There has been some talk of starting a 10 mtr SSB net once enhancement takes place. This would get them used to net operations and a good chance to try out their 10 mtr SSB rigs and antennas. We'll discuss this on the .97 net and at the next meeting.

73 for now, see ya at the next meeting. Dave KD5FX

(NOTE: I had to retype this. It was 3 1/2 inches wide. Sorry about that. Joe WA5ZNF.)

"If you must kiss me, sweetheart" Quoth his darling at the door. "Kiss me on the upper lip, 'Cause the bottom one's awful sore."

Club
NEWS

WSLOW

March Meeting Minutes

Meeting was called to order at 10:10 A.M. by President Jerry, KD5IS, with 10 members and guests present. After introductions, Ellard, W5KE, gave the Treasurer's report. He reported that he was getting good response on his mailing of dues reminders.

Jerry announced that the station license was renewed and had been put on display. K5JB is trustee of W5LOW.

Jerry read the latest ARRL bulletins regarding Novice enhancement, 18 MHz band, and the FCC NPRM on the 220 MHz giveaway.

Ellard gave the CORA report. He also discussed arrangements being made by the VHF Club to provide publicity for Ham Holiday.

Results of the elections, and the officers for 1987 are:

Hugh Benson, KA5DGY, Pres.
Richard Gimmel, KA5TTH, V.P.
Joe Buswell, K5JB, Sec'y
Ellard Foster, W5KE, Treas.

Hugh was not able to be present so his election is contingent on his accepting the position.

There was some discussion about the pending Red Cross move to new quarters, particularly regarding access and control of the amateur radio station. Jerry, KD5IS, and Joe, K5JB, in conjunction with Red Cross management will develop procedures to satisfy FCC requirements.

Meeting adjourned at 11:24 A.M. and a happy bunch dispersed to enjoy a glorious, February, sunshine day!
Joe, K5JB, Sec'y

Local Boy Does Good!

Carl, W5JJ, recently garnered another noteworthy achievement as he was named a Senior Member in the Radio Club of America. As you are probably aware, the RCA is the oldest radio club in the world, founded in 1909 in New York. It has its list of prior and current members consist of many of the familiar names from the ranks of the 'movers and shakers' of the radio art. Armstrong, Sarnoff, deForest were members; current members include Freddy Link, of Link Radio, Herbert Hoover III, Bob Foosner, and our very own Steve Stevens, W5VCJ, who was recognized for his contribution to installing the Oklahoma Highway Patrol radio network when he worked for General Electric Co.

Carl's achievements are broad, including educating untold numbers of FAA staff members on all the radio navigation equipment for which the FAA has responsibility. He has been a prolific writer, educating us amateur radio folks on the fine points of the "radio art", as he likes to call it. He has exercised a continuing curiosity about radio antennas and feedlines and developed a keen understanding that ranks him among the leading professional engineering journeymen in the field.

Carl was elevated, along with 13 of his peers, at the January 27 meeting of RCA. Congratulations Carl! We are proud of you! Joe, K5JB

Anyone for Chess?

Dave, WB5FWE, and Cliff, WD4LPU, have been trying to give each other a chess drubbing over packet radio for the last several weeks. They are interested in increasing the competition in packet chess and asked if there was anyone who wanted to join in the fun. If any of you packeteros are interested in playing a little chess on the air, contact Dave in Norman, or Cliff in Yukon. They will compile the names and get them to me to publish in the C&E (as though things don't spread faster than heck on packet!). Joe, K5JB

Aero Packet Planned

Jim, KB5XN, advised that he and Bill, KB5BS, have completed preparations to carry a packet radio station aloft on Sunday, March 15. They plan to loiter a bit West of Oklahoma City, at 12,000 feet, starting the flight at about 2 P.M. and orbiting for about two hours. In case of bad weather, they have scheduled the airplane for the following Sunday. They plan to use an alias, "SKY" during the flight.

Jim said that he and Bill took the plane up with the equipment on Feb. 16 and made a circuit of the Wiley Post airport pattern. They tried to connect with K5JB and KB0QJ on .01 (both were off piddling on another frequency). They got a connect from Steve, K2IYQ, who was watching their antics. Everything seemed to be working fine.

The plan for March 15 is to start on 145.01, then announce a frequency switch to keep from clobbering .01. Sounds like a good plan to me. Be looking for you, guys! Joe, K5JB

How's Things on Packet?

So far I have seen two crescendos in local packet activity. The first happened around Field Day time last year. The second happened during the Christmas holidays. I was concerned that the ebb that occurred after field day might happen again when it seemed awfully quiet on New Years day.

At the time, it appeared that the massive Field Day collisions might have driven some of the new packeteros off in disgust. (Probably the "new packeteros" were actually field day visitors who never got on packet themselves.) I was afraid that there would be an ebb in packet activity after Christmas if the packet newcomers found out that you can't play 20M louder-dan-you and get any packets through!

I don't think the packet silence we experienced for a few weeks after Field Day will ever happen again. It is inevitable that we will have some growing pains as we all gather on one frequency and try out the mode, at the same time. There will be frayed nerves and comments like, "What is that jerk doing? Testing his Return key?", and "Some clown down in Poke-n-Plumb has a beacon set at one minute intervals, put him in the 'lid list'", and "He is a one man pile-up with those multi-connects; he is colliding with himself!" I even saw an occasion where someone anonymously sent a copy of the infamous "Packet POOP" essay to an inexperienced operator.

One healthy thing began to happen after this last crescendo. Operators started hopping to different frequencies. When they didn't need digipeaters they went to 145.03, .05, .07; and when they wanted to try the new network that OPRA is building, they went to .09 to give it a try. When the packeteros "go forth to populate the band", packet radio has arrived!

Packet Radio Bulletin Boards

The time has come the Walrus said, to speak of many things. I have been thinking of "What if pigs had wings?" for some time but wasn't too sure how I felt about Bulletin boards on the amateur bands. My first reaction was pretty negative because I associated them with the telephone bulletin board crowd, with which I have no particular empathy. From the beginning I have tried to disassociate Packet Radio from computers because, dang it!, it is a radio hobby, not a computer hobby.

There are a lot of uses (reasons,

excuses, etc.) for packet radio, just like there are a lot of reasons for amateur radio, e.g., technical experimentation, rag chewing, traffic handling, DXing. This diversification will naturally cause division but out of the chaos will come a seasoned bunch of amateurs who will be better prepared to deal with real life communications situations, and by demonstrating beneficial occupancy, will be better able to deal with raids on our frequency spectrum, hopefully having fun in the meantime.

Many of the first packet radio demonstrations I gave around here used the Teletype Model 43 to talk to the TNC so I could show one didn't have to have a computer to enjoy packet communications. In fact, I still use the Teletype terminal at home when the rig is unattended. There is much less risk to the equipment in case of a storm or power line transient. When the TTY is connected, I only operate in the connected mode so there isn't anything printed that I don't want to see. It works out real well. When I am home and want to see all the activity on the air, I fire up a computer and let all the stuff be collected in its silicon cells for me to browse at my convenience.

Early on, some of us thought that a packet bulletin board system (PBBS) would be a good idea so someone who wanted to play with his packet setup could do so while no one else was around. He or she could do all the experimentation by connecting with a bulletin board. Also, it would be a solution for those who chose not to leave equipment powered up continuously. They could exchange messages by leaving them on the bulletin board to be picked up later by others. Sandy, WB5RRR, in Enid, and I started working on one but I really didn't want to run it continuously at my house. When Stan, N5JFQ, showed interest in running it I went to work in earnest and got it running for Stan. While developing it, I got kind of hooked on it though. It has been running here ever since.

I researched the currently popular WORLI bulletin board that was running in several places around the country on the surplus $50 Xerox 820 computers. Neat way to go, but I didn't really have any desire to get a Xerox 850 running. The RLI BBS had a really slick ability to forward messages to another BBS but I reasoned that unless there was another system within range it was pointless to duplicate that feature in my PBBS code, so I didn't.

But, all is not cool with packet bulletin boards.

A bulletin board can be a really attractive nuisance if it has long files on it. Once someone starts a bulletin board sending a long file it is very difficult for someone else to use the frequency, particularly if any of the operators are using digipeaters. As we have learned, digipeaters links are fragile and it takes very little frequency congestion to render them useless.

Of course, downloading a file from a bulletin board is not the only way to clobber a frequency, any computer with file handling capability does just as well in overwhelming the poor guy who is hand typing a QSO with another.

Another way to clobber a frequency is with multiconnects through hopeless paths. There are two ways to try out alternate paths, do a reconnect, or change streams and try another connect via different path. The first is good, the latter is bad.

Like Smith and Wessons, Bulletin boards don't kill frequencies, people kill frequencies.

I like to group amateur radio operating into the broad categories of Technical Experimenting, Traffic Handling, Rag Chewing, DXing, and Contesting. Packet radio has attracted folks who like all these things and they get along a little better than the folks on phone because it is a little easier to share the frequency on packet, until someone sends a monster file with a machine, that is. It is as if someone on Phone had connected a tape recorder to their mike circuit and laid a brick on the PTT key. Not Good! But, it depends on timing, and you know, some people never develop a sense of timing!

Packet radio bulletin boards have matured to the point that now they can be categorized by intended use. There are message handlers and file servers. Message handlers generally handle smaller messages, no larger than ARRL bulletins. File servers are liable to have anything on them, up to the size of Webster's dictionary. File servers have no business being accessible over a wide area. One file server, sending one ARRL Gateway (maybe 17,000 characters) over two digipeaters, sets packet radio farther back than health and welfare traffic for 100 tornadoes can advance it.

The answer, for the file servers, is in local area networks, or LANs. By local, we mean Oklahoma City and surrounding cities as far as maybe Norman.

To be able to effectively handle message forwarding, the PBBS has to be on a popular frequency where it has access to the established digipeaters. Here they get in trouble because they are capable of being attractive nuisances.

Bulletin boards, like the WA7MBL one run on the MS-DOS computers, can be either a file server or a message forwarder, depending on the whim of the owner. (In fact the original authors of these things prefer to call them "Mail Boxes", emphasizing the message handling capability rather than the file serving aspect of the things.)

The only responsible way for one to be used both as a mail box and a file server is to exercise the multiport capability and run the messages on the long range frequencies and the files on the local frequencies, inaccessible by those distant from the area. The current practice with the bulletin boards in the eastern part of the state is to do the forwarding after midnight, which is a partial solution, but they are still accessible on 145.01 during busy times, with limitations on number of digipeaters. The owners who came to the Oklahoma Repeater Society expressed genuine concern that their benefits not be overwhelmed by the disadvantages caused by misuse.

As with any project, if you don't know where you are going, you'll never get there, so I am going to tell you packeteros where I think the bulletin boards are going.

If we agree that one of the reasons for packet is to enable traffic to get from place to place then we need to think of the way bulletin boards can be best fit into the scheme of things. We can do it in an organized manner, or we can do it in shotgun approach. They both work.

If you want to get a message to San Francisco, you can get on a 20 meter net and do it directly, or even call CQ San Francisco any old time you think the band might be open. You can also meet one of the 75 or 40 meter nets and let someone else do the relaying. Either method works. In theory, the organized approach should be better but I am not experienced enough to testify either way. I have done both successfully.

In packet radio, there are no new facts of life but one of packet's virtues is also one of it's vices. On a 20 meter phone contact you can outshout the QRM. On CW, the brain does an amazing job of separating stations, but on packet, just punch one little hole in a packet and it

is lost. To me, this is sufficient reason to think of ways to use it in an organized manner, and that means networks.

Networks are nothing new to amateur radio, of course. In packet radio there are several attempts to do it with computers. (See NET/ROM, this issue.) In an effective network, there must be at least one point where every individual can connect to the network to enter and receive traffic. In a computer network this point is called a port. The message forwarding PBBS acts as a port in the only packet network system we currently have. There has to be a method for a bulletin board to be accessed by users and a method for bulletin boards to forward their traffic.

Trying to meet the dual requirements of free accessibility to users and long range accessibility to other PBBSs is difficult. Ron, WB5TTU, runs the PBBS in Hugo. He expresses his concerns well in the following letter he sent me:

Date 2/02/87 23:04 From WB5TTU
Subj BBS'S
TO: K5JB

Dear Joe,

Hope the Oklahoma Repeater Society meeting went well. I was in Nashville during it so wasn't any way I could attend. Curious as to what was discussed...

On PBBSs operating on 01, yes..there could be a problem with someone down-loading a large file during prime hours and crashing the freq., but there are ways around the problem. First of all, of course is education of the user. Most of those who do the prime time downloads just don't think...We need to emphasize that cooperation is important. 2nd, if a user continues to download during prime time then the option remains to exclude that user from the PBBS (I've done it here, believe me the message gets across).

My own personal feelings on PBBS freqs lie in the direction of each LAN operating its PBBS on its own LAN frequency and the PBBSs using 01 as only a forwarding freq. However, in most areas that system wouldn't work so the PBBSs are stuck operating and forwarding on 01. To help cut down on congestion many of us have limited to 2 the number of digis a user can use when connecting.

Until such time that we have multi port PBBSs, alternate freq LAN's, level 3 networking...etc., etc...I feel the best method is for local PBBSs to operate on 01 with coverage limited to the local area and forwarding be done on 01. Metro areas such as Tulsa might consider dual porting their PBBS to .. say 05 and utilizing 01 ONLY as a PBBS connect freq (for forwarding).

I do not feel that there should be any PBBSs on 09. For 09 to operate any where like we envision we must keep it as clear as possible (no PBBSs or conference bridges..which in my opinion are great but create more congestion than a PBBS download during prime time..hi).

This is of course just my opinion, but I would like to see RLI/HBL type PBBSs in each of the LAN's (TULSA, OKC, FT SMITH, LAWTON, ENID...etc.) that way all of Oklahoma would be connected together via autoforwarding with the rest of the U.S.

Well, that's about it for the soapbox. Realize that I have a habit of speaking my mind and that my opinions are just that..my opinions...hi

73, Ron

I respect Ron's opinions. He has a long history of public service using amateur radio and if there are ways to effectively use the new technology, Ron will use them.

Running a PBBS is not trivial. The FCC requires that you CONTROL your station and you are not going to control it if you depend on a computer program written by computer aficionados, for computer aficionados. If you don't know how to edit a .bat file or use chkdsk /f, you don't want the WA7MBL PBBS code controlling your amateur station.

On the other hand, using the excellent communications medium amateur radio offers us, we should be able to resolve the network problem using PBBSs and other snazzy means. See what follows. Joe, K5JB

NET/ROM - Packet Networking

The following was relayed from Compuserve's Hamnet, by Dave, WD5G. This is the "Reader's Digest" version...

The W6AMT digipeater system is starting a test of "NET/ROM", which is a new firmware package for the TNC-2 which supports state-of-the-art networking capabilities (commonly referred to in packet radio circles as "layer 3" and "layer 4").

NET/ROM was installed at the W6AMT-2 and W6AMT-3 sites on January 11, 1987. We hope to install the new firmware at W6AMT-0, W6AMT-1, and W6AMT-4 during the next couple of weeks. (Installation at W6AMT-7 will have to wait until spring, due to inaccessibility of the site.)

The following information about NET-/ROM is provided in order to enable users of the W6AMT system to participate in the test by utilizing the new capabilities. Participating users should keep in mind that NET-/ROM is still in a highly experimental stage. Please report problems by leaving a message for WA8DED on the W6IXU MultiBox.

Overview of NET/ROM

NET/ROM is a firmware replacement which transforms a standard TAPR TNC-2 (or "clone") into a state-of-the-art network node controller. It is intended for use primarily on hilltops and other wide-coverage digipeater sites. It is not appropriate for end-user or mailbox stations.

A NET/ROM node provides the normal functions of an ordinary AX.25 digipeater, plus a set of sophisticated higher-level networking capabilities. A user may connect to a nearby NET/ROM node; display a list of other known network nodes; establish a transport-level circuit to a distant node; and connect to another end-user or mailbox in the vicinity of the distant node. Compared with conventional AX.25 multi-hop digipeating, NET/ROM's true store-and-forward packet switching technology can provide an order-of-magnitude improvement in throughput, especially over long paths. Routing from the local node to the distant node is handled automatically, and even includes alternate routing to circumvent network outages.

NET/ROM supports cross-frequency and cross-band networking without the need for exotic multi-port digipeater hardware. A dual-channel node, for example, is implemented simply by installing NET/ROM in a pair of standard TNC-2s and connecting them together with an RS-232 cable. A three or four channel node can be created by connecting multiple TNC-2s together, using a simple diode-matrix coupler.

NET/ROM was developed by Ron Raikes (WA8DED) and Mike Busch (W6IXU) of Software 2000, Inc.

The following are functional highlights of NET/ROM:

Runs on ordinary TNC-2 hardware

NET/ROM is unique because it provides state-of-the-art networking capabilities without the need for special hardware. NET/ROM runs on a standard TAPR TNC-2 terminal node

controller, or on any of the commercially-available TNC-2 "clones". NET/ROM is distributed in the form of a 27C256 EPROM which simply plugs into the ROM socket of the TNC-2 in place of the standard TAPR firmware ROM.

Store-and-forward packet switching

Instead of multi-hop digipeating, NET/ROM provides true store-and-forward packet switching. The result is significant improvement in throughput and reliability. On long paths (three or more digipeaters), dramatic improvements are possible. For instance, the calculated speed improvement for the Los Angeles/San Francisco route (four digipeaters) assuming typical 1200-baud VHF network conditions is about 800%!

Local, remote, and automatic routing updates

NET/ROM supports three methods of updating its routing information: local, remote, and automatic. Initial routing information is entered manually by an on-site operator using a local terminal. Routing changes may be made remotely by a control operator over an ordinary packet radio connection--a randomized verification algorithm effectively prevents changes by unauthorized operators. In addition, NET/ROM nodes broadcast routing information to each other on an hourly basis, thereby enabling the network to incorporate new nodes and to bypass outages in real-time without manual intervention.

Automatic adaptive routing

NET/ROM automatically takes care of the routing of traffic between one node and another. A user needs to specify just the desired destination, not the route. Each node keeps track of the other nodes in the network and the various possible paths that may be used to reach them. If a node or path becomes unusable due to equipment failure or poor propagation, NET/ROM automatically switches to an alternate route (if available) to circumvent the outage. Conversely, when a new node is placed on-line, other nodes automatically incorporate the new node into the network routing structure. Such routing changes are handled dynamically, without disrupting user connections in progress.

Two-levels of error and flow control

NET/ROM uses the standard AX.25v2 packet radio protocol for links between neighboring nodes, as well as for links from each node to its local users. Normal AX.25v2 error handling is used to assure error-free transmission, and normal AX.25v2 flow control is used to manage network congestion.

In addition, NET/ROM incorporates a transport-level "sliding window protocol" to provide end-to-end error and flow control for each virtual circuit.

End-to-end error control protects against lost, duplicate, or out-of-sequence frames resulting from node failures and dynamic routing changes. End-to-end flow control protects the network against disproportionate loading by any one circuit.

Very easy to use

Despite its internal sophistication and advanced networking capabilities, NET/ROM is exceptionally easy to use. There are only two commands that a user needs to learn: NODES to obtain a list of other NET/ROM nodes, and CONNECT to establish crosslinks to other nodes or downlinks to other user stations.

Compatible with existing digipeaters

Each NET/ROM node also supports the functions of an ordinary AX.25 digipeater. Users need not make use of the high-level networking functions of NET/ROM unless they want to. Digipeater owners can upgrade their sites to NET/ROM nodes without disrupting users. Multi-channel NET/ROM nodes provide multi-port digipeating as well.

Digipeating vs. Store-and-Forward

The AX.25 protocol was originally designed for point-to-point (non-digipeated) connections. AX.25 was subsequently extended to accommodate one digipeater, and later extended again to allow up to eight digipeaters.

As all experienced packet radio users know, however, AX.25 is practically unusable for communications on paths exceeding two or three "hops". The reason for this is that AX.25 digipeaters do not participate in error control. For an AX.25 packet to traverse a multi-hop path, it must not fall victim to a collision or other error during any of the hops; otherwise, it must be retransmitted by the originating station and start its journey all over again.

The probability that an AX.25 packet can complete its journey successfully deteriorates rapidly as the number of hops increases. For example, it takes five hops (four digipeaters) to get from Los Angeles to San Francisco. If the average reliability per hop is 90% (which may be optimistic in those congested areas), then the probability that a packet will traverse the five-hop path unscathed and be successfully acknowledged (which requires ten error-free hops) is less than 35%. In other words, it will take an average of 2.9 tries to get the packet through successfully. Since the usual timeout threshold for a five-hop path is 36 seconds, the average elapsed time to get the packet through will average about 77 seconds! [This assumes a 10% error probability per hop, and the usual 1200-baud timeout of 4*(2*digis+1) seconds.]

Using NET/ROM nodes instead of ordinary AX.25 digipeaters changes this situation dramatically for the better. When the Los Angeles user transmits a packet destined for San Francisco, it is received by the local NET/ROM node serving Los Angeles. That node immediately passes the packet to its neighboring node to the north, and sends an acknowledgment back to the user. This process is repeated five times in all. Whenever a packet is lost due to collision or other error, recovery is handled by just the two adjacent nodes involved. As a result, the average elapsed time to get a packet through decreases to less than 10 seconds, about an 800% improvement in throughput. [Same assumptions as previous example.] For longer paths, the payoff is even more dramatic.

Dual- and Multi-Channel Operation

(uplink/downlink) and long-haul (crosslink) traffic. One good way to accomplish this is to reserve one radio frequency exclusively for inter-node traffic, to provide end-user access to the nodes on one or more separate frequencies, and to discourage (ideally, to prevent) end-users from using the inter-node "backbone" frequency. This approach requires network nodes that can access two or more frequencies.

NET/ROM supports such multi-channel operation without the need for exotic multi-port digipeater hardware. A dual-channel node, for example, consists simply of a pair of standard TNC-2s (with NET/ROM in each) connected together with a simple RS-232 cable. Each TNC takes responsibility for handling traffic on a single frequency; cross-frequency traffic is passed over the cable between TNCs at relatively high speed.

For the complete text of the NET/ROM experiment check the K5JB PBBS on 146.415. It is 28,288 characters long!

Joe, K5JB

CLUBS: THE FUTURE OF AMATEUR RADIO

Did you know that the American Radio Relay League began as a club project? Hiram Percy Maxim and Clarence Tuska got the Hartford Radio Club interested in organizing a national traffic handling system way back in the year 1914. Within a very few months, "the tail was wagging the dog" and the ARRL "project" was rolling in a very big way. The American Radio Relay League quickly went from club project status to a separate entity of national stature.

Who would have guessed, at the dawn of this century, that one club's bright idea would soon reshape the destiny of radio? Ham clubs have had similar opportunities down through the history of our hobby. Your club has that opportunity today! Let's look at some examples of how clubs have made a difference — it may help you see that radio clubs can still be a vital ingredient in the future of Amateur Radio.

Looking Back

When we review our collective Ham History records, we see much to be proud of. Amateur Radio was there at the very dawn of the high-tech age, pushing back the horizons of radio communication. Hams were there during the glory days of polar exploration, our technical savvy and superior rigs far outstripping the radios used by commercial and military radio installations.

Hams were among the first to experiment with radiotelephone techniques, leading to the dawn of broadcasting in 1920. A scant dozen years later, we were involved again in experimenting with television technology, trying out the various scanning methods, finding out the bandwidth and picture resolution limits, and searching for ways to tame unstable equipment into usefulness at ever-higher frequencies.

In the lobby of the ARRL's Headquarters in Newington hangs a fully operational copy of OSCAR 1, the first satellite built and used by radio amateurs. Each and every one of the OSCAR series of satellites has worked — no duds! The mutli-million dollar commercial satellites cannot boast of that record.

In more recent years, we've grabbed onto channelized, VHF and UHF FM communications techniques. Local, public service, and disaster communications via Amateur Radio is much simpler, more dependable, and vastly more convenient than it was even two decades ago.

Now we've crossed the threshold to a whole new world of error-free communications with the packet radio revolution. Our packet radio techniques bring new meaning to disaster communications capability. This makes us even more valuable to the public we serve during communications emergencies.

In each case just mentioned, the teamwork of many hams was necessary to make things happen. And that is exactly what a healthy ham club is, a team of hams working together towards common goals.

Where Has It Brought Us?

Of the past 75 years, the most-recent 15 could be called the most fascinating because of huge technical advances. The capabilities packaged in a modern hf transceiver that weighs twenty pounds exceed those of a ton of rack-mounted gear from thirty years ago. This writer is not so foolish as to say that "all useful discoveries have now been made." Good grief, NO! The best is surely yet to come.

These advances in capability have made our ham gear more accessible, not less so. Throughout society, Amateur Radio circles included, we've moved past our fear and awe of technology. We've lost the "gee whiz factor" and maybe it's for the best. Now we're comfortable with our gear, which is very easy to use and extremely reliable. This frees us to turn to other facets of our hobby, particularly as it serves the need of our communities or our own personal satisfaction and education.

Radio amateurs, by virtue of their licenses, get to lease a number of radio frequency bands. We don't own those frequencies — we are allowed to occupy the space because our government thinks it is useful for us to be there. We possess a very valuable commodity — convenient, portable, and reliable communications. What are we going to do to make sure our lease gets renewed on this valuable property?

What Raw Material is Available?

Take a moment to glance at the graphs. One is a bar graph showing the age patterns of the United States citizens, based on data derived from the 1980 Federal Census figures. The other graph is also an age pattern bar graph, a "snapshot" of those who became new radio amateurs during April 1985 (a tip of the hat to the FCC for providing the data).

Do you notice anything? The two graphs follow similar patterns, taking into account that the ham radio population graph is based on five years more-recent data. In other words, we draw radio amateurs fairly evenly from all age segments of the population. Social statisticians tell us that the U.S. population as a whole is growing older. Currently, the big bulge is among the young adult age groups. We're rather lacking in the teenage brackets right now, and the real growth is occurring in those over age 60 — we're living longer.

The "second harmonic" of the Baby Boom of the 50s and 60s is just now starting to show up. The birth rate has stopped dropping. The number of children born each year during the next decade can be expected to rise, peak and begin to drop again. Barring some major social change or an unthinkable global calamity, we can assume that the "teenager shortage" will abate, and we'll see an influx of kids into Amateur Radio again, simply because more kids will be available.

Social statisticians tell us, however, that the over-65 age group is well worth looking at for growth in Amateur Radio. This is a fast-growing segment of the population, and these people have the maturity and expertise to recognize the benefits of ham radio.

What Can Clubs Do?

You've heard a lot of talk about growth being essential to the preservation of the Amateur Radio Service. Indeed, there is a lot of pressure from commercial, public service and governmental interests to take over our bands, and the under-occupied bands are the most vulnerable.

Growth in the numbers of licensed hams is occurring, slowly. Surely, the much-improved availability of test sites is partially responsible for helping hams come into the Amateur Radio Service. But we can't just make our wares more available and hope somebody notices! How can we make real strides in adding to the body of radio amateurs while preserving and enhancing the quality of the Amateur Radio Service?

(1) Plug the Leaks

When someone says, "Hey, what is ham radio anyway?" don't just go into a tirade about how its not like CB. Find out what your friend is interested in, and sell that aspect of ham radio. Line up a visit to a hamshack that demonstrates those aspects of our hobby that most interest your friend.

We can all think of the one that got away — the person in our past who expressed an interest in becoming a ham, but we didn't do anything to get them on the way to getting started. The first thing we can do is make sure folks like this get connected with an Elmer, someone who will help them along, answer their questions, and alleviate their fears.

Likewise, we can stop the erosion of licensed hams who let their tickets lapse. Encourage them to keep their tickets renewed, even if they're not currently active. If possible, help inactive hams find a new lease on life by encouraging reentry into some facet of ham radio.

Look around at your club meeting and take an inventory of the talents, skills and interests of the various members. What is going to waste here? Isn't there some way to bring the wall flowers into the mainstream, for the benefit of all? Can't you at least make sure that visitors and newcomers get a warm greeting, a proper introduction, and the offer to answer questions?

(2) Recruit Some New Hams

If you want to have some fun, arrange to give a ham radio talk to a group of kids, or an adult computer or astronomy club. Check with ARRL HQ for a good videotape and back that up with some of your own ham gear, QSL cards and the most interesting of your log pages. Show off your collection of League publications, explaining that plenty of resources are available to help people learn about ham radio.

If you can arrange an on-air demonstration, so much the better.

President Paul Pape called the meeting to order at 9:05 AM on February 14, 1987. About 100 members and guests attended.

Old Business

1. The Red Cross will be moving to its new building on June 15, 1987, but they'll allow us to use the facilities at 10th and Hudson for the rest of the year.

2. The CoCoFest '87 steering committee met on Tuesday, February 10, 1987, at Paul Pape's house. The committee recommended holding the event on one of the first two Saturdays in August. They didn't select a site, but agreed the rental should be less than what the Myriad charged us last year. They decided to end the event earlier in the day than last year (between 1 and 3 PM). The membership discussed the committee's findings for several minutes. The following motions came out of this discussion (each passed):

a. Hold CoCoFest '87 on Saturday, August 8, 1987.

b. End the event at 3PM.

c. Turn the site selection and the other minutiae over to the committee to decide.

New Business

1. Chuck West mentioned a BBS called "Welcome to MacIntosh", which will soon be carrying CoCo III files. The BBS has an 80 megabyte hard drive and uses the XMODEM protocol for file transfer.

2. I moved that we establish an official club library to serve as a repository for public domain software. Such a library would serve a two-fold purpose. First, it would permit COCO, Inc. members to obtain needed software. Second, it would allow us to share our public domain software with other Color Computer users groups around the country. Since the January meeting, several users groups have inquired about trading software. My motion passed, and Lee Lash and Howard Wilson volunteered to serve as librarians.

3. Hollis Holcomb moved that we offer to first time attendees free diskettes and cassettes explaining the benefits of joining COCO, Inc. The motion carried.

4. President Paul Pape initiated a heated and lengthy debate concerning the special interest group (SIG) concept. Paul proposed that we alter our meeting format on a trial basis so that we might appeal to the widest possible audience. In short, we would begin with a business meeting as usual. But, after the break, we would split into various SIGs. Just what SIGs we should offer is still up in the air. However, we all agreed that a beginner's SIG would be very beneficial. Other SIGs could be BASIC (chaired by Sam Murr), OS9 (chaired by Lewis Sample?), etc. Think about this concept and offer some suggestions at the next meeting, when we begin our trial.

5. Raylon Rogers moved that we publish in the C & E a list of experts on various subjects and the times which are convenient to call them. Unfortunately, we neglected to ask for volunteers. All experts should contact me between 7PM and 9PM weeknights, and I will publish the list in the next C & E.

6. Chuck West moved that we should establish an account on Delphi and CompuServe for downloading CoCo files. The motion passed. The task will probably fall into the librarians' jurisdiction. However, to paraphrase Chekhov, how many programs does a man need?

7. Let's welcome new members David Graham, Tony Parker (of Edmond), and Tommy Morris.

8. Because we were running short of time, the membership voted to dispense with hardware and software problems this month.

Doorprize Winners

Interbank Incident - Tommy Morris
RS-232 switch - George Roberts
used diskette - Paul Gates
CoCo 2 dust cover - Steve Moore
CoCo 2 dust cover - Bob Lutz
diskette box - Huy Nguyen
diskette box - Howard Wilson
diskette box - Judy Holcomb
diskette box -Robert Browning
diskette box - John Rudnicki
diskette box - Chuck West
diskettes - Yvonne Washington
diskettes - James Seals, Jr.
diskettes - Greg Marzec
diskettes - Rick Tobiason
diskettes - Tom Brewer
diskettes - Louise Burrell
Assembly Language Programming book - Kary Meadows

Okay, some of you people didn't bring back the circulating doorprizes that you won in January. The OS9 package, Flight Simulator (missing for months), and the bag full of Hot CoCo cassettes need to return next month.

Program

Mr. Loyd Dorsett of Dorsett Educational Software (Goldsby, OK) presented an entertaining program featuring his proprietary software. His company began in audio-visual educational programs, but switched to computer aided instruction in 1976. Their first computer market was the Atari, but they added the CoCo shortly thereafter.

The offerings are varied: reading, writing, arithmetic, spelling, phonics, algebra, geometry, trigonmtry, physics, history, electronics, foreign languages, financial planning. etc.

Only 36 of the 512 CoCo oriented programs are available on diskettes because they lack sound. The remainder use a mixture of voice and data on the same medium. Hence, the logical choice was cassette. The other alternatives would have been to synthesize voice on diskette or to use diskette for instructions and cassette tape for voice. Neither option made as much sense as using straight cassette tape. Synthetic voices are crude at best, and using both tape and disk concurrently would pose a synchronization problem.

The 832 programs written for the Atari will run on the Radio Shack Models I, II, and IV with a modification package that Dorsett sells for $99.95. It would be less expensive to buy a CoCo II than to buy the mod, however.

Many of the programs will run in 16K. Most cost $59.95,

Continued NEXT PAGE

Q. R. Zedd

HONER STARTS THE NORRIS CODE

"I am here!" cried the nardly voice out of the darkness that surrounded Honor Roll Ranch. "Are you in there, good buddy, come on back?"

Q. R. Zedd, A5A, world's greatest DXer and all-around genius and athlete, winced visibly.

"Don't anybody leave," he told the four members of the South Canadian Amateur Radio Society who had dropped by the hamshack for an eyeball and a brew. "I don't think I can face this alone."

It was a shocking admission from the man who opened most of Africa and Asia to the DX world, and only recently put the lost continent of Atlantis on the DXCC list with a fnur-day underwater operation. But Zedd's legendary courage and intelligence -- as well as his patience -- are being tested to the ultimate these days, as faithful readers will recall.

It was just before Christmas when Zedd boasted that he could make any nerd a crack amateur radio operator by becoming said nerd's elmer. As a result, the great man was accosted immediately by one Homer Klott, an erstwhile CB enthusiast whose enthusiasm is not -- to put it kindly -- matched by his IQ.

Deep winter lay around Honor Roll Ranch, just a hoot and a holler south of town, where Zedd hangs out. It had been a pleasant late February night, everything considered, until Homer appeared, as we have described, for his weekly visit for tutoring by Zedd, his chosen elmer.

Now, as we lucky ones watched, Zedd clomped into the hamshack with Klott close behind him. Zedd was wearing his wine-red DX knickers, knee boots, and a handsome red flannel shirt from Lands End. His 40-meter antenna was loaded into a coil strapped to his Big Mac belt buckle, and the homebrew transceiver stuck to his chest with velcro tape was hammering out [illegible] for him from a station in Afghanistan.

Ignoring all that routine stuff, Zedd sat Homer down at an extra chair he pulled up to his No. 1 operating position, the one with computer control and full breakin capability into the 1,200-square foot walkin linear next door in the concrete bunker. Homer looked ready: He had a bunch of ARRL books under one arm and a moon pie under the other. LEDs on his baseball cap spelled out the exciting legend: What's Your Handle Good Buddy?.

Zedd steeled himself and flipped on a code practice unit he had whomped up a few minutes earlier out of parts not really needed in his wrist alarm. He connected a Bencher paddle and sat facing Homer.

"Tonight," Zedd told his student, "we start on Morse code. That's --"

"Morris code!" Homer shouted. "Oh wow! Zowee! Oh joy, oh rapture! I always wanted to learn the Morris code!"

Zedd's face began to get red, but he controlled himself. "You learn the Morse code with sound. Not sight."

"Right! Right!" Homer agreed excitedly. "Dots and dashes!"

"Dits and dahs," Zedd corrected.

Homer's eyes glazed. "Huh?"

"Dits and dahs."

"I gotta learn them plus dots and dashes? FOUR things I got to learn? Shazam!"

A facial tic began leaping under Zedd's eye. "We'll start slowly." He touched the Bencher. The amplifier went

dit!

Homer stared at Zedd.

"That's an e," Zedd said.

"What?" Homer said.

"An e. That was an e."

"WHAT was an e?"

"That dit."

"What dit was that?"

Zedd touched the Bencher again.

dit!

Homer blinked.

"An e," said Zedd.

"I didn't hardly hear it. Could you slow it down?"

"How the hell," Zedd asked in a strangled tone, "can I slow down one dit?"

"Dit? Or dot?"

"A dit is a dot."

"Huh?"

"If I slowed it down, it would be a dah, you blamed fool!"

Homer leaned forward, concentration wrinkling his pimpled visage. He scowled, working hard. "Send 'er again, good buddy. I'm ready this time!"

dit!

"I heard it! I heard it! I heard them dot! I did!" Homer jumped up, spilling Zedd's Colorado KoolAid. He danced around the room, knocking over lamps and souvenirs of the Sooners' 1985 national championship. "I heard it! I did! I heard them dot! I am hearing the Morris code! Oh, this is wonderful!"

"It's a dit," Zedd told him through gritted teeth. "Not a dot. And it stands for the letter e. Have you go that, you (deleted) imbecile?"

Homer threw himself back into the chair. "Send 'er again!"

"Write down what you hear. What you copy."

"Roger dodger! Send 'er!"

dit!

"Dot! You flang me a dot!"

"What does a dit represent?"

"A real short time! Go ahead on! Send me some more! I can handle it!"

Tiny droplets of blood stood out on Zedd's forehead as he studied his notes. "A dah," he said through tight teeth, "represents the letter t. So." He touched the Bencher again.

dah

"Oh, thank you!" Homer chortled. "But you don't need to slow up them dots that much for me! I ain't exactly a nerd, you know."

"That was a dah," Zedd grated.

"Dot, you mean? I know!"

"Dah. Dah, you moron!"

"Dot! Yeah! You don't haf to shout! I hear you wall-to-wall, man!"

"Dah is long! Dit is short! Dit is e! Dah is t!"

"It rhymes, it rhymes!" Homer yelled back. "I got it! A dot is a long and a dash is a short! A dit is an e and a t is a -- what is a t again, kimosabe?"

Zedd's chair went over backward as he sprang toward the corner gun cabinet. Two members of SCARS grabbed Homer and rushed him out of there. Zedd calmed down after a

[illegible] INSIDE BACK PAGE

COCO COCO COCO

which I believe is the cost for all the cassettes in a particular set. Call Dorsett toll-free from OKC at 321-0000.

Mr. Dorsett briefly demonstrated several of his products. I'll give you my first impressions.

On the whole, the packages aimed at little kids seemed better than those geared for older people. The reading and phonics programs possessed the patience necessary to teach a child how to read and how to sound out unfamiliar words. The narrator's voice was soothing and supportive. The graphics were appealing and attractive. The packages should hold a child's attention for a long time.

The physics, Spanish, and financial management packages were designed for an older user community. Personally, I feel a textbook, a human native-speaker (in the flesh), and other classmates with whom to interact are essential to learn any foreign language.

The smattering of physics that Mr. Dorsett presented seemed disjointed. The financial management course was simplistic. More detailed information is available free of charge from a variety of sources. In short, I wasn't overwhelmed with these more advanced subjects. The courses, in their entirety, may have been more impressive, but I only saw a few minutes of each.

On the other hand, let me repeat that the elementary school subjects looked outstanding. If I had any preschoolers running around the house, I would seriously consider buying some software for them.

Thank you, Mr. Dorsett, for your presentation.

- Martin Schiel, 670-6891

*SCHOLARSHIPS

The Dayton Amateur Radio Association is now accepting applications for its annual $1,000 scholarships. Liscened amateurs graduating from high school in 1987 are elgible. Please make this known to any amateurs in your area who may qualify.

For further information and application forms write: DARA SCHOLARSHIPS, 317 Ernst Ave, Dayton Ohio 45405.

OIDAR Radio

The Feburary *OIDAR* meeting was called to order at 7:30 PM on the 11th. The meeting quickly lost order and became a free for all after 5 minutes. The topic of excitement was the repeater report given by Bruce KA5ZKI. The receiver site for the .31 machine was moved to the south of town by McChord School. Everyone came out and help put up the both the VHF and UHF link antennas. Everyone had a great time working together getting 'em up there. Why even Glen WN5J came down from Oklahoma city to help out! That's the good news. The bad news is that 2 days later, the first thunderstorm of the season hit the south part of town and took the pre-amp with it! The reciever is currently working without a pre-amp but a new one with a three cell helical filter has been order and will probably be installed by the time you read this. At the transmitter side, plans are being readied to extend the 40' tower to 90'. The main problem being the cost for 3/16th guy wire and hardware. Anyone out there know where I can pick some of this stuff up cheap? It was also brought to my attention that the transmitter can use a new 4CX250 and a set of driver tubes as these are starting to get soft. I reminded club members that this is not a real priority issue as the transmitter will work until every last electron has been sucked out of the cathode! And when that happens you simply raise the plate voltage to 10 or 15KV and start all over again..Hi Hi. Some members have complained about the audio from the autopatch and the fact that the voice ID was too loud. Hopefully this will change when we install the new SuperComshack board this Sunday. It will have alot more features than the current 5.57 version we are now using. What else is going on with *OIDAR* ? Lynn Jackson KA5ZJM reported that 1987 Spring Novice classes have just started. Seven people have signed up to take the classes and this season it looks like most of them are under 18 years old! Lynn and Dave WN5LUI will be teaching the code again this year. Bruce KA5ZKI will be teaching FCC Rules and Reg's and I (the "Bizzer" - WDØHCO) will be teaching how electrons dance. We have a great group of students and if the first class is going to be like the rest of the classes, each student should get their novice ticket in not time at all. I made a suggestion before the club that since the ARRL Novice enhancement passed maybe we should look at putting up a 220 "Novice Repeater" so our new novices can use their new voice priviledges. At least it will get them excited enough to try for the general ticket and possibly keep commercial interests from looking too closely at 220 since most of us has failed to use it at all. Well everyone is still discussing this so next month I will let you know how it turns out. Taco KA5FFL mentioned that the first Hot Dog Roast of the new year will be held out at Fishermens bend by KAW DAM the 8th of March at 3 PM and invited all area hams to come down and have some fun and discuss DX and antennas. Phil KA2QIP reminded everyone that club dues are due April 1st. With that the meeting was closed until next month. See you all then!

Biz WDØHCO

TRADE TRADE TRADE TRADE TRADE

Will trade these new tubes:

10	811A	10	6146
2	4X150A	1	813
3	4X250B and sockets		

for 2 572B tubes.

Joe W5PNO 321-2099

ZEDD & HOMER

while, and broke out the hard stuff.

Homer thought he had done real fine, and promised the boys he would be back next week to learn a whole bunch more.

"I love this Morris code!" he told your reporter.

— KU5B

(Editors Note: When preparing news for the C & E it is requested that it be set 3 inches wide, We then reduce it by 33 percent and print it. If you can't meet the above specifications write it out in long hand and get it to me a week before paste up time. TNX Joe, WA5ZNF)

SUN	MON	TUE	WED	THU	FRI	SAT
1	2	GREAT PLAINS MORI 3	4	AERONAUTICAL 5 TRI-CITY	6	7
WHEATSTRAW 8	EDMOND CLUB 9 SCARS NOVICE CLASS STARTS	OIDAR OU 10 76'ers	11	ALTUS AREA OKC/PM 12	13	ARDMORE SCARS COCO 14
15	VE EXAMS Red Cross 6:00 pm 16 SCARS NOVICE	AUTOPATCH 17	18	CIMARRON KAY COUNTY 19	EARS HAMPOUT 20 AT Red Rock	VHF CLUB 21
22	SCARS NOVICE CLASS 23	CORA 24	25	26	EDIT NIGHT FOR C & E 27	28
29	SCARS NOVICE CLASS 30	31	The managing editor assumes no responsibility for the data contained herein.			

MARCH

WHEATBTRAW CONTINUED

ired professor from Southwestern College at Weatherford. He raises watermelons in the spring, but the crows give him fits. I'd like to see Perry fighting the crows for the watermelons, but he always manages to find plenty of them for us when we have our meeting in Weatherford.

I asked Perry how he got interested in magic and this is what he had to say. In 1923 he ordered his first magic book form Montgomery Wards catalog. Later in 1964 he became a member of the International Brotherhood of Magicians and the Society of American Magicians. He has performed for many school children and other organizations.

Perry recently received his Extra Class ticket and is now a licensed examiner.

Thanks for the magic show, Perry.

After this the meeting was adjourned and refreshments served.

See you in Canton,
Take care, 73.
Jan, N5JUT