CENTRAL OKLAHOMA COLLECTOR AND RADIO AMATEURS EMITTER

Amateur Radio News Service

50¢

ME 10 MARCH 1984 NUMBER 110

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The South Canadian Amateur Radio Society

SCARS MEMBERS EAT IT UP.....

About twenty members of the South Canadian Amateur Radio Society and their guests enjoyed a Valentine Day dinner at Kelley's in Norman this month. The dinner was held instead of holding a formal meeting for the month of February. Everyone seemed to enjoy themselves and some entertainment was provided by some events from the Winter Olympics viewed on a big screen television. For all who missed the dinner, you missed some good food and some good fellowship. Thanks to all of those who attended for helping to make the event a success.

AF5X TO MOVE TO SEVEN LAND.....

SCARS will soon be losing one of its charter members to the wide open spaces of Utah. Jess McKenzie, AF5X (and formerly WB5UWB), will soon assume new duties at the Dugway Proving Grounds 90 miles southwest of Salt Lake City, Utah.

As previously mentioned, Jess is a charter member of SCARS as well as having served as club president. He has also served as assistant EC for Cleveland County, and is the current EC. Jess now works at the FAA center in Oklahoma City, and he has recently received his 25 year pin in recognition of twenty-five years in the Civil Service. Jess' wife Lee is an Assistant Professor of English at East Central State University in Ada, Oklahoma.

SCARS and the local amateur radio community will miss Jess, and our loss is certainly the gain of the hams of 7-Land.

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THE "I'M A LITTLE SHORT DEPT. .....

I am just a little shy of my usual C&E contribution this month due to the fact that no meeting was held and therefore not much happened. However, I would like to report that W5SQJ is still testing linears that he has built, so listen on the W5OU/R repeater for updates on his progress as he reports to W5LFK.

-wa5rpp-

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[redacted], WA5CZN, about his fantastic contacts

THESE CORA MEMBER CLUBS PROMOTE AMATEUR RADIO

1 AERONAUTICAL CENTER ARC
MEETS: 8:00pm First Friday. Flight Standards Bldg., FAA, S. Macarthur

PR	WB5SVN	Jack Iman	677-8537
VP	N5ABL	Holly Holcomb	799-2539
Sec	WD5JPW	Gloria Seignious	722-1740
Tr	WA5CJJ	Bob Pace	376-3569
EDITOR: Gloria Seignious, WD5JPW			722-1740

2 OKLAHOMA CENTRAL VHF CLUB
MEETS: 10:00am Third Saturday. Red Cross. 10th & Hudson(Back door) Okla City.

PR	WA5HTL	Paul Asplin	787-4286
PR	KD5IS	Jerry Wetmore	524-5080
VP	KA5MYY	Chris Sartorious	728-0058
TR	W5KE	Ellard Foster	789-6702
EDITOR: Joe Buswell, K5JB			732-0676

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

PR	N5EPV	Bob Allen	Unlisted
VP	WD5ISS	Don Saunders	751-0404
SE	N5BEQ	Jim Buswell	236-0368
TR	W5KOZ	Sid Gerber	737-1050
EDITOR: Susie Atkinson, KA5FED			842-8014

4 OKLAHOMA CITY AUTOPATCH ASSOCIATION
MEETS: 7:30pm Third Tuesday. Okla City Fire Training Center. 800 N Portland

PR	WB5NDO	Kathey Whited	799-1457
VP	WD5CSM	Dennis Patterson	495-0769
SE	N5DLM	Vicki Adkins	722-6195
TR	KE5M	Ron Recer	341-7030
EDITOR: Kathy Whited WB5NDO			799-1457

5 OKLAHOMA UNIVERSITY AMATEUR RADIO CLUB
MEETS: 7:30pm Second Tuesday (Sep-May) 119 Wilson Center. 1334 S Jenkins

PR	KA5BAY	Luke Noah	325-1775
VP	KE5N	John Wustenberg	325-2382
SE	KA5COI	Peter Richeson	329-3217
TR	KA5LZN	Greg Smith	366-1641
EDITOR: Greg Smith, KA5LZN			366-1641

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

PR	KA5MPK	Gary Alexander	482-0857
VP			
S/T	WA5CBF	Loren Simms	477-0921
EDITOR: Loren Simms, WA5CBF			477-0921

7 BICENTENNIAL (76ers) ARC
MEETS: 7:00pm Second Tuesday. OG&E Bldg. SE 3rd & E. K. Gaylord Blvd.

PR	AE5N	Donald Duck	681-0133
VP	WD5JNT	Ted Vanlaningham	262-1675
SE	N5AUH	Jerry Sproul	354-2061
TR	WA9AFM	Tom Webb	737-6716
EDITOR: Jim Seals, KB5XN			381-2005

9 WHEATSTRAW AMATEUR RADIO CLUB
MEETS: 2:30pm Second Sunday. Location varies. See club section.

PR	KA5DUO	Leo Peil	886-2998
VP	WA5FLT		
S/T	K5GG	George Maschino	263-7614
EDITOR:			

13 KAY COUNTY AMATEUR RADIO CLUB
MEETS: 7:00pm Third Thursday
Ponca City EOC

PR	WB5YRN	Delbert Foiles	762-4479
VP	WA5UBO	Marsh Pronneke	363-2526
S/T	KA5PUB	Glenn Bishop, Jr.	
EDITOR: Rick Long, WD4CEP			767-1871

14 CIMMARON AMATEUR RADIO ASSOCIATION
MEETS: 7:00pm Second and Fourth Mondays. Place varies. See club section.

PR	WB5ECM	Dennis Painton	764-3599
VP	N5FUP	Steve Schoonmaker	886-3274
SE	N5FMH	Nadine Painton	764-3599
TR	N5FUR	Ruth Simpson	227-2791
EDITOR: Major Bailey, KI5P			227-2061

15 SOUTH CANADIAN AMATEUR RADIO SOCIETY
MEETS: 9:30am Second Saturday. Red Cross Bldg., North OU Campus. Norman

PR	KA5MIZ	Bob Rabin	360-6996
VP	KA5EFJ	Ken Neptune	321-7789
SE	WD5GTC	Gene Johnson	321-6759
TR	N5BEW	Ken Esadoah	329-4667
EDITOR: Sam Barrett, WA5RPP			321-2601

16 EDMOND AMATEUR RADIO CLUB
MEETS: 7:00pm First Thursday. See club section for location and type.

PR	WB5UIY	Stan Van Nort	Unlisted
VP	WB5MLX	Glen Cochran	942-7148
S/T	WD5DYJ	Kay Northcutt	755-4672
EDITOR: Mark Northcutt, WD5DYI			755-4672

18 GREAT PLAINS AMATEUR RADIO CLUB
MEETS: 7:30pm First Tuesday
Civil Defense room, Woodward courthouse.

PR	WA5PLW	Windle Hatchett	766-3561
VP	W5KEK	Lewis Patterson	
SE	K5YZK	Jim Phares	254-2319
TR	KA5SDE	James Rockhold	
EDITOR: Jim Phares, K5YZK			

10 EDMOND AMATEUR RADIO SOCIETY
MEETS: Varies. See club section

PR	KBØOU	Cal Callison	751-3620
VP	WA5ZGM	John Keeling	340-1253
S/T	KC5GN	Bill Wright	341-6076
EDITOR: John Keeling, WA5ZGM			340-1253

20 ARDMORE AMATEUR RADIO CLUB
MEETS: 8:00pm First Wed. Red Cross Bldg. Informal, 8:00pm other Weds. 221 9th NW

PR	WB5VBK	Fred Innis	223-1709
VP	WD5FZD	John W Merlyn	223-9543
SE	W5JCX	Jim Chilcoat	226-6816
TR	W5BLW	Charles Dibrell	226-0589
EDITOR: Glen Hamilton KE5ES			226-4379

CENTRAL OKLAHOMA RADIO AMATEURS, Inc.
MEETS: 7:30pm Fourth Tuesday. OKC Fire Training Center. 800 N Portland

PR	WN5NWX	Reggy Whited	799-1457
VP	K2GKK	D. C. Macdnald	672-4947
SE	N5BEQ	Jim Buswell	236-0368
TR	WDOFTM	Linda Callison	751-3620

CORA Collector & Emitter (USPS 116-150) is published momthly ny CORA Inc., 1020 Arthur Dr, Midwest City OK 73110. SECOND CLASS postage paid at Oklahoma Cit, OK
SUBSCRIPTION: CORA members $3 others $6 yr.

POSTMASTER: Send Form 3579 to:
CORA C&E, P.O. Box 15013, Del City OK 73155

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Salem

WHAT'S ALL THIS RACKET ABOUT PACKET?

For several months now, K5JulietBravo has been regaling us gentle leaders with the marvelous mysteries of Packet Radio. Actually, there is really nothing surprizing here for any red blooded true blue computer hacker. There are a couple principals that crossover from that interest. The only difference between last month and this month is that I have become a packeteer also. Most of this action started back in August of last year when the Tucson Amateur Packet Radio, Inc. announced that they had completed their Beta test of a new packet controller. Changes were being made and available now was a new modern design for a TNC (Terminal Node Controller) for the general unwashed amateur public like myself. They sent out a siren call to all potential packeroos and packerettes that for a nominal sum of $247.00 plus a computer terminal, they too, could raise a racket about packet.

Now, ole JB has been fired up about this stuff for some time. He got some information at Dayton a couple of years ago and he has been anxiously awaiting his TNC and sort of chomping at the bit to get at it. When Joe gets interested in something, it really doesn't make any difference if anyone else has the hots for it. He probably would go out and buy two TNC's and talk to himself. After all, he does enjoy his own company. The general discussions did peak my interest in the subject, so I told JB that when the packet roll is called up yonder, count me in. He sent in the reservation to get my name in the queue for a TNC. Meanwhile, a couple of other packeteer potentials, WA5FLT and KB5XN had also signed up. I was fairly distracted around the middle of November when the first of the TNC's were scheduled to come in to the OKC area. I told JB to shuffle off one of the first ones to XN and I would take my turn in line down a little farther. The distractions would not have permitted me to get it assembled on JB's timetable and he was ready to go. During occasional lunches at Denco's in Norman I would get complete blow by blow descriptions from JB while he was wolfing down bites of a SuperBurrito. Finally, about the end of January, we got notice of the impending arrival of the back end of our initial TNC order. I was ready for a distraction and JB handed me the box on a Friday and I fired him back a check.

The first thing that I noticed was that these guys had put together a rather extensive manual for the TNC. It was very impressive documentation to say the least and absolutely first rate. The assembly instructions for the kit were just about the best I have ever seen in a kit of this type. Anybody who follows the instructions and procedures should have no trouble in assembling a working TNC. I let a week slip by (more distractions and just plain tired) before sitting down on a Friday night to look at the book. The next night I completed stuffing the board while listening to a Prairie Home Companion on NPR. A short break at 10:45 p.m. for a short visit and glass of tea with KA5OHU and WA5JXX over at one of the local watering holes, then back to the pack at 12:30 or so.

The assembly is straightforward. There really should be no reason for anyone to be afraid of the assembly. When you first open the box, there is a warning to the potential packeteer that this is a complicated kit and assembly should not be attempted unless the kit builder has a little bit of sophistication. Well, that may be true, but for the most part, the assembly instructions prevent most problems and head scratching. There are also test procedures to prevent major booboos in the form of smoking parts from minor flubups in the form of assembly. All parts and even the cut leads are accounted in the assembly. I figure that it took me about six hours to assemble all of the electrical parts. The mechanical details consumed some more time. I finally waited and finished most of the details the next night including the electrical tests.

I went hunting for a terminal the next night. I got KA5OHU to take one out of stock and lend it to me. I went home on monday and built up an RS-232 cable. This wasn't sc difficult because Tim even had the connectors. I did however, supply the ribbon cable. I should have been paying attention when I was in Dallas the day before during the sidewalk sale. There was a guy who had a whole boxful of D25 connectors. A little digging in my "black hole" back room collection also turned up a spare cable and a few other mechanical parts.

I started exercising the TNC with the terminal and found things working OK. The TNC has a built in 1200 baud modem and it has to be tuned up. TAPR elected to build their own modem to optimize the filters and other devices for over the air work. They also mounted the critical tuning components on headers to permit experimentation at different modem frequencies. All the tuneup is done in software with the instructions and jumper connections listed on the screen. It tells you to jump this connection and put this jumper in, then turn this pot. It is all the same for the 5 separate tuneup procedures. The last procedure gets you out of the calibration mode and all the correct jumpers back in their place.

The tuneup consists of turning the appropriate pots until you see two Leds light with about equal brilliance, this corresponds to the frequency of the modem matching a frequency generated by the microprocessor. Level adjustments plus a hybrid null adjustment allows full duplex operation.

I could not get the modem to tune up under any circumstance. From end to end, the various potentiometers would not bring the modem up on frequency. It was getting late, so I put it away until the next night. I called JB to report what I had done and we made arrangements to diddle with it on the air the next night. It rapidly became clear that a capacitor that come with the kit was mismarked. I finally got the modem to work by taking a series capacitor, then a parallel capacitor across the existing capacitor. I later pulled the modem capacitor and measured it as a .01 ufd instead of the expected .022 ufd. Yet, it was clearly marked as a .022 ufd. After modem tuneup, I took the rest of the evening to build up a cable from the TNC to the IC-230.

I had some trepidation about using the IC-230 since JB and XN had both had quite a bit of trouble making theirs work without a lot of modification to the audio circuit. FLT had better success because he had modified his IC-230 by changing a series capacitor in the microphone circuit from .002 to .047 ufd. I had made a similiar change in my radio to boost low frequency mike response. JB and Jim had not. I found a couple of cable wiring connections and after a little bit of tweaking, JB and I were playing around and then suddenly, zip, zip, zip, and I was copying packets like crazy. We packeted away for awhile while I discovered some of the packet commands in the

book. I haven't had an outside antenna on 2 meters for quite some time. I needed to put one up. I was just using a simple connection to my 4Ø meter dipole. Not too efficient. The antenna that I had been using was just a crappy Ringo ranger on a 25 foot pole. They are truly as JB describes them a"dummy load with incidental radiation." I could hear the repeater, of course, very easily, but sometime my signal was a little noisy.

We had decided to use the 147.99/39 repeater located here in Norman. I had asked trustee WA5TOO if it was OK and he said sure. The repeater wasn't getting much use anyway and Darrell threw open a welcome to all packeteers. We took the system over for that first evening. The nice thing about packet is that they are just that for normal typing speeds. We would only borrow about 3 seconds every 30 to 50 seconds for the packet. In fact, under some circumstances, we could work while a normal voice conversation was going on on the repeater. In fact, much later, JB and I did just that. We would send packets of 20 to 25 words during lapses in the conversation or during the squelch tail. Works pretty good.

I was still pretty noisy in to the system with the 4Ø meter antenna, so I decided I had to do something about it that weekend. Like JB says, "If they can't hear you, then you can't work them." We played packet over the next few days, then on that Saturday and Sunday, I assembled a 4 element beam and put a Ringo 450 Mhz on top of it (it didn't work worth a crap on getting into OKC despite using 8214 cable which is lower loss than regular RG8 and even RG213). JB had to leave town for a couple of days and I took the time to install a speaker jack on the back of the radio that allows me to plug in the TNC without killing the speaker audio. Thus the radio would remain useful for other monitoring purposes. After getting the radio back together, we would leave our radios on for the next couple of days and would drop packets on each other at wild times.

My experience with packet radio is that it is considerably more efficient than teletype. First, it is more interactive. You can transmit full duplex if you have the equipment setup. Since the packets are sent in bursts, there is a lot of blank space on the air whild the packets are being typed in by the big clumsy fingers. This means that several packet stations could carry on several different conversations at the same time. This was true on the first Friday night that I had my packet up and running when all the packeteers met up on 39 for a roundtable. FLT had just gotten his TNC assembled, but was having trouble receiving any signals. He originally thought that it was a mechanical problem with the 1933 SDLC packet protocol assembler. A slight press on the board here, a gentle tap with a hammer there and the TNC knew who was boss. Packets were flying that night on the repeater between the four packeteers with fleckless abandon. FLT later discovered that his problem stemmed from using a power supply with an unacceptable amount of ripple that was garbaging out his receiver modem. A change of the power supply and that cured that problem.

Packet's most endearing quality is its error free mode in the connect state. By this method, two stations can "connect" in a state where one machine sends a packet of data and the other station responds with an acknowledged receipt of the packet. This means that if the packet is not received properly (for example the calculated error checksum does not correspond to the transmitted error checksum) then the machine will keep sending the packet until it receives a proper acknowledge.

While sending and resending an errant packet may seem like a lot of trouble and inefficient, it actually is very efficient in comparison to requesting a repeat, missing it or only getting part of it and etc. The packet is not displayed by the TNC unless it is error free. This also means that you might be able to carry on a packet conversation even under circumstances that are less than optimum. For example, after I got the 4 element beam up, I found that we could nct make a path on a direct frequency. Voice was barely intelligible. One evening, I left the IC-230 in the simplex frequency and attempted a connect. It finally did even though it took about 5 tries. A slightly better antenna and hopefully, I might be able to improve that. It happened very early in the morning when some of the commercial stations eat up JB's receive ability were off the air.

So packet has the advantage in being more naturally conversant because of its packet nature, it is more efficient because it only is on for a short time and it is error free under certain modes. There are a couple of other advantages right now. It is also fun to play with right now. There is an excellent support group in TAPR for the mode and the list of available equipment is growing. The potential for growth is unlimited. TAPR packet machines are also capable of "leapfrog" type connections that allow you to connect to another station through a third station. This means that I can connect to K5JB and JB can connect to WA5FLT, but I can't connect directly to WA5FLT. I then ask the TNC to connect me to WA5FLT via K5JB. Acknowledgments are sent all up and down the line and the connection is essentially error free. This can be done up to 9 link stations. With usual VHF ranges, 9 stations properly spaced could get you linked up to 300 miles away. Anybody interested in traffic handling should consider packet as an efficient message handler over short distances.

At this time, I am thinking about installing my TNC at the old 146.88 Mhz transmitter site. There is a two meter antenna still up and this would expand coverage from the simple 4 element beam that is only up about 20 feet to a J pole type antenna up about 100 feet. The Kahuna will be a problem though since its 380 watts ERP is only about 1/4 mile away. I may have to find a cavity to put on 88 to suck out the simplex frequency we are thinking about using. I would still have control of the TNC by a telephone line BA loop that I can use to put packets out to the machine. A touchtone decoder with reset capability would allow me to perform simple functions to keep the machine from going crazy. The packet TNC has been buring in here at the house for several weeks now and it just might be ready to go when I can get a power supply and also get the TNC mounted up on a bracket and into the locked cabinet.

So much for this edition of Smartaleck in Packet Land. Anybody with an interest can check with JB or me about more information. There is also a wealth of information that is avaiable from TAPR through their publication Packet Status Register. I have copies of the member ship application in TAPR. It is only $12.00 a year and that includes a subscription to PSR. All you potential packeroos and packerettes might give it a try. More on this story as it develops.

Micheal Salem N5MS

BIG "D" SIDEWALK SALE SOJOURN

It had been sometime since I had been down to Dallas for the annual sidewalk sale on the first of the month. Through the winter months, this is generally a dormant activity. From September to December, there is usually a home or easily reached away football game to attend. The spring weather generally makes predicting a VFR flight to Dallas unlikely without a crystal ball. Which generally leaves only the summer months for the trip. Usually Hamcom is the first week in June and it substitutes for the sidewalk sale. I generally don't get down there in August because I usually have just attended Ham Holiday the last of July. So I usually don't go down to Big "D". unless we can find a hole in the weather in the Spring or in July.

Well, it was the necessity to just "get out of town" for a couple of days that prompted a suggestion to John Graham and Jim WD5HPU that we planned on going to Dallas for the sidewalk sale on the first of February. John usually makes the trip in the car, but he has to be back to work on Saturday afternoon and after having worked all night long the previous night, he usually doesn't get much sleep if he heads out at 6:00 a.m. or so and doesn't get back until 3 or 4 in the afternoon. John was receptive to the trip since I planned on taking the airplane which we had finally gotten signed off for the return to the blue sky. Jim always seems to enjoy a trip into the far beyond, especially if it is the sidewalk sale or Hamcom. I was ready to get away for a couple of hours. I did want to be back in time to watch an OU basketball that afternoon at 2:00 p.m. Thus the airplane became a necessity for just about everybody. Besides, John has been taking flying lessons for a couple of months and he is just getting to the point of the dual and solo cross-country flights. Hopefully, he would not criticize my technique. As an alternative, I considered if he might sit in the back seat, but I was really joking. I think that John wanted to get a little experience and that was OK.

We thought that we might have KA5OHU also, but he opted out as well as others at the last minute. Three is a good crowd in my plane, so we planned on that and I had the tanks fully fueled instead of leaving a little fuel on the ground to help out with the gross weight situation. It looked like the weather would be OK, but you can never be sure. But it was great and when I checked in with flight service, they basically predicted a hohummer.

So as not to disturb my normal saturday ritual, we decided to meet at the doughnut stop early, like maybe 6:20 a.m. Jumping Jim was there and John showed up just before leaving. Goodness, there was W5UZD who had stopped in on his first visit of the day. I didn't miss my dose of homilies from Louie who normally graces our presence at the 9:00 a.m. meeting. A couple of doughnuts and a cup of coffee was great.

The weather was definitely bluebird clear and I walked around the airplane staring at it for any strangeness. We were basically wheels off about 7:05 a.m., not too far behind schedule. When we touched down at Love, we rented a car and drove down to the site off the Northcentral Expressway on Ross. The sale is getting bigger and bigger and people are starting to set up along the interstate close to the elevated highway. This continues into the parking lot of the Electronics store. I understand that the store has begun selling their space inside the parking lot. As a result, a lot of the vendors are moving out. I can't really say that I blame the electronics store. I guess that it was one method of keeping other commercial dealers out of their own parking lot selling against them. The sale does create an additional crowd for them that would not ordinarily be there. After all, I went. And I went into the store and looked around. The only problem is that I didn't really see anything in there that I wanted. I almost bought a book, but there weren't any that appealed to me and I wasn't going to spend the money on a CQ Magazine just to read about Grenada. I did walk in and look around and fondled the IC-751, just to look at it. It was really neat.

The vendors in the market outside offered a variety of merchandise. Especially in the computer and older test equipment branches. The fact that Tandy is just a hop, skip and a surplus sale across the turnpike, means that a lot of the people have RS stuff running out there ears. I mean, I have absolutely no use for stuffed animals with AM radios in them.

Chips are popular and a couple of the commercial parts vendors were there. The most intriguing device that I saw was a complete replacement for the Big Kahuna (146.28/88 Mhz) that was in absolute mint condition. This old beautiful basestation would have been a complete set of spares for the Kahuna. It sure took some will power and quick calculation to figure that there is no way it would fit in the airplane for the trip back. And I just had to not accept the more than kind offer from W5LFK and W5NUT who were walking around and offered to carport it back up to Norman. It was PLed also although it used the gigantic banana reeds and was in absolute mint condition. Fortunately, it sold before I made my last walk out back to the car.

We made a quick stop for lunch, then back to the airport for a quick check of the weather and the trip back. It had gotten a little windy, but it only added about 10 minutes to the trip. We were back on the ground by 1:30 p.m. and I made it out to the Lloyd Noble Arena just in time to sit down before the tipoff at 2:00p.m. Now that I think about it, I didn't really buy anything down there except lunch. Oh, well, nice weather. Now march is coming up and I don't think that the weather will be that bad and maybe . . . .

Micheal Salem N5MS

THE BIG KAHUNA® - The One and Only.

I seem to see some claptrap in the last issue of the C & E about the pretender kahuna in OKC. Lest I have to explain the basic principal behind trademark law, copyright law, and the law of the jungle, I remind the readers that there is only one Kahuna® and it is located in Norman. Tsk, Tsk, you would think that grown people wouldn't engage in such plagarizing of the Kahuna® name.

Actually, the 63/03 is ok for repeaters as far as a 1400 foot tower goes, but what else would you expect from a tall stick. And the "Green Box" 300 watt amplifier is great. It really sounds good down here in Norman. The only problem is that we have a "Green Box" also, the only problem is that it would be illegal for the Kahuna® to use it. It has a cool 300 watts out and taking into the account duplexer losses and the short cable run to the antenna and the 6 db gain antenna, we would be about 800 watts ERP which is about twice what we are allowed. Besides, the 146.28/88 repeater was the second repeater in the state on that frequency by my recollection and it just wasn't a good idea to conflict with the neighbors. We suffered for many years with out of towners who couldn't hear and

apparently didn't care to hear the low power system here in Norman and as a result, there was plenty of buckshotting into the system by out of towners. The 63/03 system enjoys a considerable advantage because of its little used frequency and I like that advantage because I am a member of the EARC. It is nice to have Kahuna®s on either side of OKC to use.

This sort of leads into a larger discussion regarding repeaters in general. Everybody used to talk about the people who had the big signals on the band. Repeaters are just that type of big signals with a couple of exceptions. They are generally on the air 24 hours a day and everybody has one or wants one. Since it is a historical fact that back in the early 70's that everyone was trying to get on the same frequencies because crystal controlled radios only had a limited number of frequencies available, it is inevitable that some interference will result. I tried several methods to minimize the "buckshot" problem here in Norman, including phasing our receive antenna in a 9 db offset pattern toward the Northeast but it wasn't practical. When the band was open, they were there. Generally, the difficulty was Base stations with omnidirectional antennas up high in the air who were located outside of the normal service area for the repeater they wanted to use. An effort was also made when the problem first occurred to discuss it with various operators from the region and that result was a big fat zero, so it was just live with it and minimize the problem. The problem was then a compromise in coverage. We kept the transmitter on a low site (only about 75 foot high) and ran fairly low power (2-20 watts). Ultimately, I moved the receiver site up to the Physical Sciences Building on the University campus (200 foot) and got a commercial grade antenna. The "buckshotting" became worse. But the transmitter stayed at 75 foot. We ran out of range fast on the transmitter. There were many places in the City where the repeater could be keyed and not heard. There was an incessant amount of kerchunking from people trying to get in, but not hearing the squelch tail in return. And other out of town stations were always accessing the system while using their local system. Unfortunately, conditions being what they were, it was fairly frequent and it would usually disable the use of the autopatch during the early morning hours during the winter and fall. The FCC designed repeaters as serving intracommunity interests, that is, within the community. If you want to talk between cities, use 40 meter or 75. While it is useful to talk between cities a long distance apart on repeaters, directional antennas are a must. I eventually took down the Ringo because not only was I tired out hearing the out of town stations, I didn't need it to hit the local repeaters. I usually didn't talk on any of the OKC systems unless I was in the car. Besides with the proliferation of repeaters, I didn't want to put up an antenna again until I could make it directional. Cushcraft also did their part by basically designing the Ringo as a fairly worthless antenna. There are still a few who think that 2 meters is 4Ø meters and I can't really blame them because FM is a good mode, but I have actually heard people say that they know that they are getting into the out of town system, but that was OK since anybody in the area could capture the system away from them. That may be true, but it plays havoc with timeout timers and autopatches. It is also intentional interference. I guess that maybe everybody feels a little chauvanistic toward their local system and when they hear the "out of town interference" the knee jerk reaction is to get mad..

When I first got the Big Kahuna® I contemplated finding some way to detune the PA to bring the power down to the equivalent level it had been running. Upon the advice of N5AMV and WA5TOO that this would be detrimental to the output tube, emissionwise, I decided to run it full tilt boogie. The apparent increase in range is remarkable now. There are few holes in the coverage in the primary service area (within 30 miles of Norman). As a part of the improvements, we got a duplexer and now transmit and receive off the same antenna. Usually, anywhere the repeater can be hit, it can be heard. I have been as far away as Chandler, just about 50 miles away and could hit the system. I heard it with quite a bit of noise, but it was there. Amazingly, enough, nothing has been changed on the receive side. I could probably have hit the system at Chandler before, I just couldn't hear it. And remember what K5JB says,"if they can't hear you, then you can't work them."

The filling of the coverage area does now create a potential for problems for persons a long way out of town with high antennas. But I am not sure what can be done about it. These people still buckshot the repeater just like they alway did, just now they know that they do because they hear the squelch tail come back. I remember a meeting of the Oklahoma Repeater Society where one of the participants complained that he could hear a particular repeater just about all the time. When asked what he was using, he said he had a Ringo Ranger about 50 feet in the air. Taking into account the distance that he was from the "interfering signal" and his omnidirectional, it was no wonder that he heard it all the time. With that kind of receive capability, there is no doubt that even a modest repeater output could be heard over that distance. It is a fact of physics of the atmosphere and propagation. Someone who is 70-80 miles away from a repeater with a 50 foot antenna and an omnidirectional antenna should not be surprized that he can hear the "offending" system. In fact, there would be something wrong with his radio and antenna if he couldn't hear the repeater.

Another consideration is that when the band is open (and it frequently is), then it really doesn't make any difference how much power the repeater that is "interfereing" is running because it probably going to be heard. I am convinced that there is nothing that can be done about this and I especially believe that it is true especially when I watch W5UXR work repeaters up and down in Texas and Kansas using nothing but an IC2AT and a quarterwave antenna mounted 30 feet in the air fed by some lousy Radio Shack coax cable. When the 28/88 repeater first went on the air from Norman in 1972 and 1973, I put up an outside Ringo. I consistently heard the Tulsa repeater about 30% of the time and it frequently was about 20 db quieting. My solution was to take down the Ringo. I carry only the walkie-talkie around now and never hear them except for the most extroiDnary openings. The same is basically true for mobiles although they are a little more efficient. I can still hear Tulsa occasionally on the mobile. Did I consider Tulsa an "interfering signal?" Not really, they were just trying to improve their repeater.

Is there a solution? Yes, actually, there are several. First and foremost is frequency coordination. Unfortunately, not all repeaters are coordinated. Frequ coordination in this area is a voluntary service of the Oklahoma Repeater Society and there are no guarantees. The coordinator is not a miracle worker and he is human, but I can't think that it would not be better to talk to him. There is also a lot of interest in frequencies and people request them all the time. If you request a frequency, use it or lose it. A coordination may be lost if not activated in 6 months. Actually, I don't think that Dan K5FVL, the statewide coordinator as a practical matter assigns a new frequency until after a year. He does not assign the frequency, he merely advises on potential interference. It is still basically up to the user to determine the interference potential. The coordinator provides an indication of channel loading in a particular area and "approves" a frequency if it meets his criteria. I do happen to think that Dan knows what he is doing.

Under the Commission's Regulations, everyone is suppose to have equal access to all frequencies, but there have been some movement toward recognizing repeater operation and frequency coordination in enforcement situations. If amateurs cannot take care of their own business and cooperate to eliminate these problems, the Commission may very well step in in a big way. We actually have it pretty good in Oklahoma.

The commercial boys have the same problem and one of the methods they have used to eliminate the "interference" is with PL (Private Line). This is a subaudible tone that allows you to exclude an unwanted frequency on receive. It also allows you to key up only particular transmitters. It is an eventuality if repeater growth continues. It has already become a reality on the coasts where repeater population is already straining at the maximum. Face it, carrier operated repeaters are extremely wasteful. They occupy vast quantities of "space" and create interference potentials that are unavoidable. It is too bad that manufacturers didn't recognize this when two meters was growing. It will be awhile before all amateur radios are equipped with it. Icom has made some dumb mistakes in their time and bringing out their new IC04AT and IC02AT without PL decode is just one of them. The problem is actually just a little less critical with handheld radios than with base stations. Knowing Icom, they probably plan to ad PL decode to the handhelds in a couple of years and sell everybody new radios. It will probably be the IC002AT model. It is available as an option for the Yaseu and to me that makes the Yaseu a better buy. Icom did add PL transmit to the radio and it can be keyboard set to all PL codes now existing and that is a real plus.

Another solution is move to another band. I have a repeater on UHF and it is absolutely quiet. The same is true for 220 Mhz. There are vast expanses of frequencies which are available. Equipment is not that much more and it requires a little more care on antennas. Plenty of commercial gear is also available for both the repeaters and mobiles. I listen to the various UHF systems in the city and they are all little used.

Another factor is that there are people who want to listen to the out of town stuff. So one man's DX is another man's trash. Don't know what can be done about these people except leave them up. There will alway be somebody who will try to DX repeaters. And I am not sure that it is a bad thing. It is good to develop capability for such long distance operation for use during emergencies. Not every body has or can operate 75 meters. But these operations and capabilities should not be based on propagation anomalies. If you are going to develop such a capability, then make sure that it operates with a high degree of reliability. In an emergency, it may be desireable.

Another factor to consider is that there are still numerous frequencies under the band plan that permit high power operation on simplex. In fact, base stations should naturally congregate on simplex and leave the repeaters for the mobiles and portables. For many years, the main repeater channel in Chicago had a separate frequency input for base stations than for mobiles. By this method, a mobile had priority over base stations that could "swallow" their signals. This was a recognition that the repeater was designed for the mobiles and portables. There are a group of operators in the Norman-Moore area who have unbelievable simplex capability and that is primarily where they spend their time. You don't hear them complaining about "interference" from out of town stations. In the event of an emergency they will form an important link in the communications capability of the amateur service. Besides, sometimes when you are driving around town, slip down to the input of the repeater and see how many stations you can hear. It is amazing. I was especially amazed at how many stations I could hear during the Owen W5LFL space operations. Simplex operation is also capable.

But a lot of portable and mobile stations prefer to operate on repeaters and that is OK. There is a "waterhole" concept here. Everybody congregates on the local repeater to meet and chat. Now that we have repeaters that talk to us, even the machines themselves are friendly. They also offer a whole host of functions including autopatch, remote links, weather stations, and other things. The potential for growth with the microprocessor controlled system is limitless. More and more people are going to want to put up repeaters and more and more people are going to use them.

Oh, by the way. There is only one Big Kahuna [R] and it is Norman. Anybody who appropriates our name is generally lacking in imagination. Let them get their own name. This one is taken.

Micheal Salem N5MS

FCC PREEMPTS SATELLITE SERVICE FROM STATE CONTROL

I got a copy of a recent FCC Order that is very interesting. In it, the Commission pre-empted the State of New Jersey from controlling Satellite Master Antenna Television Systems and vested exclusive control in this service in the FCC. Apparently, the State tried to get its hands on the SMATV systems in the state claiming that there is a similiarity between these systems and cable tv systems which the local governments have some control over. Of course, the power to control is the power to tax and there is no doubt that the State had a financial motive in their actions.

As a matter of policy, the FCC has allowed regulation of cable systems by municipalities, but that was based on the fact that there were local government interests in the use of "right-of -ways" and city "franchises" that dictated the yielding of the Commission's power. There were too many local interests at stake. But what the state of New Jersey was trying to do was extend that "grace" to other services and the Commission in its Order adopted November 8, 1983 simply blew its whistle and ordered New Jersey "out of the pool." They made it very clear that they had the power to do what they were going to do and also clear what they did do:

> It is clear from the foregoing that the Commission possesses the authority to preempt state and local regulation of SMATV systems, and that in fact, we have either regulated and/or preempted the elements constituting such a system. In order to clear up any lingering doubt we do today, by this document, state our authority to and hereby do preempt state and local regulation of SMATV systems that have the effect of interfering with, delaying, or terminating interstate and federally controlled communications services.

The discussion of pre-emption is generally good and I might list a little more of it next month. There is some very good language that could by extension apply to amateur radio, and maybe in the field of tower ordinances. It is an interesting document.

Micheal Salem N5MS

Club
NEWS

Minutes of February Meeting

Meeting was called to order at 10:02 A.M. by president Paul, WA5HTL, with thirteen members present.

Ellard, W5KE, gave the Treasurer's report. Also, related to finance, it was reaffirmed that the dues would remain at $6.00 per year. Additional family member dues are $1.00 per year.

Members were reminded by Ellard, W5KE, that it is the Club's responsibility to furnish publicity for Ham Holiday.

January 11, 1985 is the expiration date of the club station's license. Near this year's end the president will appoint a trustee who will be approved by a membership vote.

It was moved by Charlie, WA5JGU, that the club rededicate itself to support of the Red Cross station and prepare plans involving more operators. He recommended a committee be established to prepare those plans. Other ways and means were discussed and the motion passed.

A motion was passed that the club station be repainted.

Elections were held with the following results:

President	Jerry Wetmore, KD5IS
Vice President	Chris Sartorius, KA5MYY
Secretary	Joe Buswell, K5JB
Treasurer	Ellard Foster, W5KE

Meeting ajourned at 10:46 P.M. and I gave a Packet radio demonstration. Joe, K5JB, Sec'y

Packet Ratts

During the last month two more joined the Packet Radio bunch, WA5FLT and N5MS. (KB5XN and I were the first two on the air.) Last weekend all four of us were on together making 'Packet Racket', as N5MS calls it. Most of the kinks are worked out except we are stretching our range to work simplex with each other, N5MS even put a four element beam up about six feet to try and improve things but it didn't. Mike is in Norman, Jim is in Tuttle and Joe is in Calumet. I can work Joe from Midwest City most of the time but occasional fading knocks us out. We are about 60 miles apart. Jim and I have had good luck except when power line noise knocks down his sensitivity. With the good natured permission of WA5TOO, we have camped out on the 147.99-/.39 repeater and made use of its excellent range and performance. Many of the other repeaters around town have fallen victim of the Packet Racket but for only short bursts. So far we have had a blast with it.

The demonstration at the Aeronautical Center ARC meeting early in the month went well. KB5XN and I set up a couple of TNC's and connected them directly and through a TNC left idling at my house. Tom, K5LDI was helpful in bringing a color TV (and a backup computer) so the group could watch the junk being transmitted. Joe, WA5FLT, brought his recently completed TNC so we could try our first connection with it.

Joe's TNC gave us some trouble coming up running. It was transmitting fine but couldn't hear anything. We traced the signals to the SDLC (Synchronous Data Link Control IC, the most expensive device on the board) and nothing was coming out. Those SDLC IC's are so smart they can tell when they are going to be jerked out of the socket and trashed. When Joe's heard him order a replacement, it straightened up and has been working ever since.

Mike's TNC gave him a little trouble in the modem department. He was unable to set the transmitter tone frequencies because of an out-of-tolerance capacitor. A quick graft of some junk box substitutes got his up and running.

What the network really needs now is someone right smack dab in the middle of Oklahoma City (well, maybe not smack dab in intermod alley) to put one of these things on the air so we won't need to have such long legged radios to connect the things. We have demonstrated how well they operate as relay stations and the equipment requirements are quite modest since they work half duplex on a single frequency.

I received new firmware for the GLB TNC that enabled it begin running AX.25 protocol. The gap is narrowing between the TAPR and GLB TNCs because with this update, several default commands I was having to enter to get the thing running have been changed to the power up values. I have had limited time to experiment with it but it seems to do everything well, considering that it is so simple a unit. There is still the handicap that since all the packet decoding, etc. is done without any special hardware, the microprocessor is pretty busy and can't handle input/output simultaneously with the terminal. Since missed packets are just repeated if the microprocessor is off doing some other chore when one arrives, this is no real handicap.

I was happy to find out that GLB wasn't going to rob me on the price of the new firmware. The new operating program, which still handles Vancouver protocol, only cost $15.00. I presume this is the firmware supplied with the TNC's currently being shipped.

N5MS advised me of an additional source for TNCs. An advertisement in March 1984 73 (Page 83) gives the whole rundown. It can be bought in various kit stages or fully completed. Prices range from $90.00 to $240.00, the latter being a completed kit that you drive off the lot. The assembled and tested unit comes with custom programmed EPROM that contains your call, I guess. The advertisement indicates that the modem circuitry is not included so that is an extra cost option (Bell 202 tones are used for Packet on UHF/VHF) For information, write to Bill Ashby and Son (K2TKN and KA2OEG), P.O. Box 332, Plukemin NJ 07978.

Speaking of being custom programmed, with the call and all, I dumped the original EPROM that came with the GLB and found that only half of the 2764 contained code. I didn't look at the replacement EPROM's code because I was in too much of a hurry to plug it in and see the TNC work. Eventually, I will modify the code to include my call and transfer it over to a new 2764. Like I said earlier, the difference between the TAPR and GLB TNC is drawing closer as I learn to work the GLB. Joe, K5JB

Talking With Fingers

The last few months I have gone into quite a bit of packet radio stuff because I was just discovering it. This latest kick started when I figured out how to retire the old Model 19 Teletype machine and get a quiet computer to act as a terminal and do radio Teletype (RTTY). I even converted a grocery sack of punched tape to floppy disk files so I could send my favorite pictures over the air. One thing led to another and I got into packet radio, skipping over AMTOR. It seems like now would be a good time to review some of the different methods of using a keyboard to communicate.

Even N5MS, the anachronistic anti-computerist, has gotten into the packet radio thing, but he did so without having to compromise his princ-

iples. He is using a video terminal and that's not a computer. The first CRT (cathode ray tube) terminals were often called TV typewriters because one typed on them like a typewriter, only they printed on a CRT screen rather than on paper.

Let's look at some of the common typewriter/-teleprinter codes.

On RTTY, a code with five binary digits, or bits is used. This five bit code is called Baudot by some, Murray, by others across the Atlantic. It is still in use in the Telex landline teleprinter networks and most radio news networks. Until the FCC recently ruled otherwise, it was the only teleprinter code permitted on the amateur bands.

A five bit code can define 32 separate characters, not quite enough to get 26 letters, 10 numbers, some punctuation, and some control characters. Two of the original 32 characters are therefore defined to shift the teleprinter machines from figures to letters and back (kind of upper and lower case shift on a typewriter). Sending a Figures character causes subsequent characters to be interpreted as figures, and so on, almost doubling the available characters that could be sent. (Remember, two characters are lost to define the figures and letters functions.)

In 1968 a standard code called ASCII was formally adopted by the American National Standards Institute (ANSI). ASCII is an abbreviation for American Standard Code for Information Interchange. With this code, 128 characters, some of them non-printing, are defined by seven binary digits, er, bits. These bits can be sent over wires in parallel form, seven at a time, or in series, one at a time. On the radio, these bits are normally sent in series, though it is possible to send them in parallel using phase modulation techniques. An eighth bit is usually sent with each character and configured so that error checking can be done on the receiving end.

Baudot code is certainly not dead because there is a lot of equipment that runs it, and for text transfer, it is faster than ASCII. 60 words per minute, a good typing speed, is 45 bits per second in Baudot. ASCII, sent at the same rate only yields 41 words per minute.

It is interesting to note that at 45 bits per second, radiotelegraph code yields about 54 words per minute, calculated by assuming the standard word "PARIS" has 50 bits in it, including character and word spacing. Keyboards for sending telegraph code are relatively common and demodulators designed for reading code are available (as well as the computers programmed to read code). However, radiotelegraph code is not generally thought of as a teleprinter code. There are advantages. If the speed is slowed to a little below a blur, it can be read without any hardware whatsoever! Also a skilled operator can send machine readable code without any special hardware. A disadvantage is that the make-break keying is easily buggered by interference which makes it error prone when read by machine. FSK (frequency shift keying) would help solve this problem but, to my knowledge, this has never been a general practice.

AMTOR is more similar to Baudot code than ASCII. It is an amateur radio adaption of commercial code used in marine teleprinter circuits where it is known by various commercial names (Sitor, Spector and Microtor). It is an international standard described in CCIR Recommendation 476. Its code set only uses certain combinations of high and low bits (also called marks and spaces or ones and zeros) so that a garbled letter can be more likely noticed and ignored. There are 35 AMTOR characters out of a possible 128 unique combinations available when seven bits per character are used. Only characters with four high bits and three low bits are used. A three character group is sent and the receiving station responds with a control character. Characters are sent at the rate of 100 bits per second and the throughput, if there are no retrys, is about 41 words per minute.

Now, if we can skip the binary coded decimal (BCD) and extended binary coded decimal interchange code (EBCDIC) we can get on with how information is sent over radio waves.

We mentioned briefly how telegraph code is sent with make and break keying and how we have the option of using frequency shift keying. On high frequency, where radio teleprinting is mostly found, frequency shift keying is inherently relative rather than absolute in terms of frequency. If we are operating at 14090 kHz with one tone, we may find the other tone at 14089.830 kHz, a difference of 170 Hertz. As long as the receiving station can receive both frequencies, their absolute values are not too important but the difference (shift) is important. When the receiver is tuned to receive these frequencies, it is the relation between its BFO and the received signal frequencies that is VERY important. The offset between the received frequency and the BFO is the tone frequency that is detected by the terminal unit (TU) at the receiving station.

There are two general frequency pairs that are found on HF radio teleprinter TU's, referred to as 'high tones' and 'low tones'. The high tone pair is 2125 and 2295 Hz. The low tone pair is 1275 and 1445 Hz. By conventon, the lower tone of a pair is the 'mark' tone and the higher is the 'space' tone. (This is the reverse of the radio frequencies involved, as will be explained later. Also, other shifts of 450 Hz and 850 Hz are sometimes found but most amateur radio operation is now 170 Hz shift.) It makes no difference whether high tone or low tone equipment is used on either end of a QSO because the person receiving the signal adjusts the receiver frequency so that the demodulated tones are proper for his TU. Of course, the receiver used must have filtering that is suitable for the tone frequencies. If the band pass filtering only accepts 500 to 1000 Hz (a CW filter) neither tone pair will work very well. If one is receiving the signals with a lower sideband receiver, the high - low relationship between the two signals becomes inverted. This is the normal mode of operation on HF and this practice has carried into VHF and UHF operation where FSK is replaced by audio frequency shift keying (AFSK). The tones that are used on VHF or UHF FM or AM are usually 1275 for mark and 1445 Hz for space. Two operators with incompatible TU's are just out of luck if they are trying to mix high and low tone pairs on AFSK because no amount of receiver tuning will slide the tones into conjunction.

The current practice of connecting a TU's output to a microphone socket on a transmitter causes quite different results on HF single sideband gear than it causes on a VHF FM rig. If the SSB equipment is properly designed and tuned, the application of a sinusoidal tone, at the proper level, to its mike circuit will result in a single frequency being transmitted. If this tone is frequency shifted, the radio frequency will shift a like amount. Standard practice is to transmit in lower sideband mode, inverting the sense of the shift. (Most TU's have provisions to reverse the sense if an upper sidband rig is used.) On an AM or FM rig, the transmitted signal will contain more than a single radio frequency but we won't get into that here except to say that it is the width of the sidebands that determines the system's upper signalling rate limit.

These tone's function is carrying electrical signals from one point to another. Naturally, since we are unable to make a direct current connection between transmitting and receiving stations, we use these tones to carry our con-

trol signals. Each character is represented by a unique pattern of marks and spaces (highs and lows, ones and zeros, etc). In the olden days, a loop of current was employed for signalling and the presence of current was a mark and absence of current, a space. This convention was self diagnostic. If a wire was broken, current stopped and a printing machine started running open in a space condition. The operator could tell something was wrong. This bit of trivia can serve as a mnemonic to establish whether a mark or a space is equivalent to a bit high or low.

The transmitting system consists of a keyboard and converter circuit to generate a serial string of marks and spaces for each key pressed. For example, in the order transmitted, the letter 'D' in Baudot is 'mark space space mark space' or in bits, '10010'. Each character is transmitted in what is called 'least significant bit (LSB) first'. A table of characters and their binary signature will usually show the bits with the most significant bits (MSB) in the leftmost column. This is rather trivial information regarding Baudot code but ASCII has the numbers and letters in ascending order and the bit table would be hard to understand if it was printed in the same orientation that they are transmitted. When nothing is being sent, the signalling tone is held in a mark state (marking time). A character is started when a space starts. Every character starts with a space and it is called the start bit. The five unique character bits follow, or in the case of ASCII, seven or eight character bits follow, and the character is ended with a stop bit which is always a mark. The length of the mark can either be the same as a character bit, one and a half times as long, or in the case of ASCII at low speed, two times as long.

Each character starts when a key is depressed and the rate of transmitting will be as slow as the typing operator. The maximum speed, of course, is limited by the time needed to get all the start bits, data bits, and stop bits sent before another character can be sent. This type of timing is called asynchronous, meaning simply non synchronous. In fact, it is character synchronous because the positions of the bits within each character are precisely timed to the start bit's beginning. It is only the beginning of each character that is not synchronized with anything. AMTOR and Packet Radio are synchronous, not having any start or stop bits in a block of characters but we aren't going to worry too much about that now.

It is the job of the receiving station's TU to receive these shifty tones and convert them into electrical signals that can be sent to a printer or a CRT screen. There are perhaps three general types of electrical circuits used for this purpose. The first is just a couple of filters made from coils and capacitors. The coils are generally 22 or 88 mH telephone toroids and the frequencies are trimmed to the mark and space frequencies by removing turns from coils or juggling capacitor values. The second common circuit is a discriminator circuit made with coils and capacitors. If the audio frequency is higher than a cross over point, the output voltage goes one way. If the frequency is lower, the voltage swings the other way. If preceeded with good band pass filtering, this is a good way to go because it is less sensitive to AM noise. The third, and most common these days, is the phase locked loop integrated circuit route using a specially designed circuit, XR-2211, manufactured by Exar Corp. If the signal is good and properly filtered, this one works very well and is certainly simple. For best performance, the transmitting TU should be sending phase coherent tones, meaning there is no sharp discontinuity in the audio waveform when tone frequencies are shifted. Here again, a special integrated circuit comes to the rescue. The XR-2206 is designed to do the job phase coherently and give a good approximation of a sine wave audio output.

A computer can be programmed to act as a terminal unit. There is a low cost program for the Apple computer (Egbert, about $30.00) that enables its cassette ports to act as input and output, connected directly to a transceiver's audio circuits. It has got to be the cheapest way to go if you happen to have an Apple lying around. Any computer with a keyboard (believe it or not, some don't have keyboards, or joysticks either) can be programmed to act as a terminal and convert keystrokes to signals for a TU and convert signals from a TU to the text display on a CRT. A simple two line BASIC program will do the job. Buffering input and output and file handling takes only a few more lines of program.

So far we have discussed tone frequencies that are used on the HF bands and sometimes used on the VHF and UHV bands. There are other frequencies that are sometimes used because equipment is commonly available that can be adapted to amateur radio use. The Bell 103 modem tones are: Originate 1270 and 1070 Hz, and Answer 2225 and 2025 Hz. Either station may use Answer or Originate tones for receiving or transmitting. This permits four possible combinations using these tones because sometimes both parties don't use the same tone pairs.

If two people have agreed on one of the four combinations, they are ready to communicate. Since they are using telephone modems, let's assume they aren't going to use Baudot but that they will be using ASCII instead. Now the fun begins as they try to agree on configuration of their code. ASCII, as we have already discussed, contains seven significant bits unless parity checking is being performed.

Normally, one should assume that the eighth bit of an ASCII characters is left in a willy nilly state. If an eight bit character is being sent, it can't be 'no parity'. It can only be 'mark parity', 'space parity', 'even parity', or 'odd parity'. It is possible to have no parity but this can only be with special arrangements between the transmitting and receiving stations that they will be using seven bit characters. But, this is unusual because equipment that is capable of transferring machine code or parity checked text must be able to send eight bit characters. To avoid problems, most text receiving equipment assumes that the parity character is present and then ignores it.

Now, let's assume both operators' receiving equipments are designed to ignore parity. Their odds are one in four that they will be able to communicate with Bell 103 modems. (If parity must be considered, the odds go up to one in eight, or worse.) Chances of a third party round table are about zilch. Is there any wonder that there isn't more teleprinter activity on VHF?

I personally think an operator's odds are much better that he will be able to talk (type?) to someone if he invests in HF RTTY equipment and adapts it to VHF AFSK. From a spectrum economy standpoint, Baudot is better for text but there are some benefits to ASCII. It is nice to be able to send upper and lower case characters, as permitted by ASCII. Most current equipment can handle either Baudot or ASCII so that's no problem. There is a large selection of terminal units available on the market and there are many good TU designs in the literature. Also, most radio connection problems have been solved and it is unnecessary to perform Humpty Dumpty lash-ups, as I have been known to do, for a one-time contact.

I think I have a fairly objective viewpoint, since I don't have equipment to do what I am recommending. I would like to hear other's opinions. One of these days I might just finish one of those AFSK TU projects and hook it up to the old IC-230. Joe, K5JB

CIMARRON A.R.A.

Things are really beginning to get off the ground in February. Just ask Fred, N5FUO. His A4 tribander is sitting pretty at 35 feet above the Fairview sky line. He says the performance is really great, it's really made his IC720 come to life.

Congratulations to Vern Brewer on his novice ticket and lots of thanks to Ray Miller for his leg work in helping find out what happened to his original novice application. Verns call is KA5SZD. Jack Day (ex KD5YB) reveived his new extra call and 10 year license term. He's now NN5Z. Jack says he likes the new call and has come up with phonetics of Nothing Nothing Five Zero. HI HI... Congratulations Jack.

The February 13 meeting brought out the entire Fairview Police Department,not for a routing, but for an excellent weather presentation including National Weather Service films and a discussion of spotting and coordination between amateurs and the Police Department. Lots of thanks to Chuck Obermiller, local Civil Defense Director for heading up the discussion on weather watching, Denny, WB5ECM for pro - curing the films, and Doug Maupin WB5EGZ for providing them. Looks like the severe weather season upcoming will be better coordinated than ever before.

Repeater news... The only time the wind blows is on weekends. That's what the crew here is beginning to think. We've been trying for the last month to do some antenna work and just can't seem to get the decent weather to do it. Hopefully things will calm down enough before storm season to get the work done. The auxillary receiver is up and running now. It's been tested under extremes of temperature and band conditions and works flawlessly. It's a Hamtronics R144 just like the 144.85 receiver only crystalled for 147.12 to provide reveive linking with the KA5CJG repeater in Woodward during severe weather conditions. This will facilitate extended weather coverage into the area and also minimize the need for relays. All the while the .85 receiver has priority and overrides the .12 receiver.

This allows local communications to take priority over the link. Lots of electronics went into the project and thanks to all for their help in making the final product a success.

Check in with us on the Thursday nite net on 145.45 at 0200%.

73 De Ki5P

For sale... KDK 2016 synthesized two meter FM. Contact Harry Watts KC5OU, call 995-4761 Vici, Ok.

For sale... Kenwood twins, R599, T599 all in good condition. $400.00, for info call 886-3274 Steve Schoonmaker, N5FUP, Canton.

For sale... Vic 20 with 8K extender, home brew interface (works great), cassette and rtty ascii cw program. Ready to go on H.F. Henry 130A01 two meter amp. Contact Major Bailey Ki5P, Call 227-2061 for info.

For sale... Atlas 350XL with manual and mobile mount excellent condition. $300 Walt Harris, WD9BIT, Box 1cccc, Lahoma, Ok. 73754

FOR SALE: Hy-Gain vertical antenna, 10-40 meters. $45.00. George, W5NTL, 789-4073

ARDMORE AMATEUR RADIO CLUB

COMMUNITY SERVICE SINCE 1948

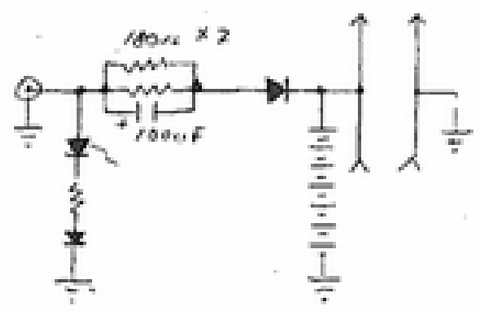
The January meeting of the Ardmore Amateur Radio club was held at the Corral Restaurant. New faces emerged, and the Ardmore club welcomes all new members to the area. The business meeting was kept short however we would like to remind all members to please check with Charles regarding the club and/or repeater dues.

The topic for the meeting centered around the growing use of personal computers for home and hobby use. Russel Anotubby (W5RFX) was the guest speaker and he put together a very interesting and thorough presentation. Russel uses a TRS-80 computer with a disk drive for both program development and CW/RTTY/SSTV operation. Also Russel has assembled a software package consisting of a variety of programs which would prove useful to the newcomer to personal computers. Anyone wishing to borrow the software can do so by contacting Russel.....

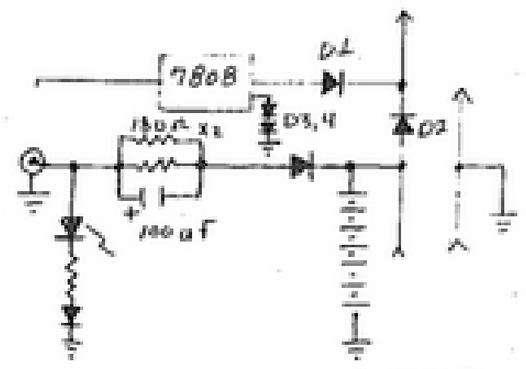
That is it from Ardmore; until next month 73.

Tim Vandagriff (WA5YOM)

CHARGE YOUR BP3 WHILE YOU TALK, HONEST



ORIGINAL BP3 CHARGING CIRCUIT



MODIFIED CHARGING CIRCUIT

What could possibly be worse than having your IC2AT on all day, then really need it just about the time the pack goes dead. Depressing isn't it? Well Icom offers the ICCP1 which charges the BP3, with the emphasis on 'charges'. This gizmo is nothing more than a cigarette lighter plug on one end and a coaxial plug on the other with no active components inside.

With the above circuit you'll always have transmit capability as long as you're near a cigarette lighter, without the added expense of the DC1 battery eliminator, all in one neat package. The circuitry is all mounted right inside the BP3 pack. As long as power is applied to the charging jack, no current is drawn from the battery while receiving or transmitting, but the battery itself continues to charge undisturbed until the power is removed from the charging jack, placing a demand on the battery once again.

73 De Ki5P

OK DX

De AD1S.

MEETING: The next meeting of OK-DX will be held on Monday, MARCH 12, 1984 at CHI-CHI's RESTAURAN 4239 N.W. Expressway, Oklahoma City. The meeting will start around 5:30 PM--- or whenever you can get there! Look for us in the "club" area where we will have a table reserved for the DX group. Everyone with an interest in HF DXing is welcome to join us.
This will be our first meeting at CHI-CHI's, and we understand the free munchies are excellent.

Last month we welcomed several new members to the group, including Burl, N5DUQ and Brad, N5CCX. Burl and Brad are avid DXers from Bethany and the Northwest side of OKC. They can often be heard exchanging DX information with Charles, W5KWK on 146.52 Mhz. Alot of good information can be heard on "52". Congratulations to Burl who just sent in for his DXCC-- not bad for a few months work! Burl just completed his Worked All Counties Award and was looking around for a challenge; we are glad that he decided to try "Worked all Countries."

ON THE BANDS

CLIPPERTON ISLAND- FOØX DXpedition should be on the air shortly after you receive this edition. The expedition, jointly sponsored by the French Polynesian DX Club and the Northern California DX Foundation, is expected on the air by March 9,1984. They had chartered a 90-foot yacht, but this vessel burned up its engine while enroute to Acapulco from Peru. The Mexican Navy offered transportation, but this was apparently rejected (for political reasons) by the Tahitian government. The latest information we have is that the expedition team will travel from Mexico to Clipperton Island by shrimp trawler. Some folks will do anything for DX!

AVES ISLAND- YVØAA should be on the air by March 1 1984 with a massive effort by the Radio Club of Venezuela. Look for them on all bands, including Oscar 10. This should be an easy one for Oklahoma.

KERMADEC ISLAND- ZL8?? is still a question mark, with the recent announcement that Jim Smith, VK9NS has dropped out of this one. Apparently the New Zealand operators, including Ron, ZL1AMO still pla to make the trip in conjunction with a scientific field trip. Maybe sometime in March...

NORTH COOK ISLANDS- ZK1XL has been heard operating from North Cook, very active on SSB and CW. Listen on 15 meters and 10 meters after 2000 UTC.

Good DX and see you on the bands...or at the next meeting of OK DX! De AD1S.

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Add iambic programmable speed and automatic message execution to your operating skills with this μMatic Memory Keyer! It will improve your code-sending ability, ease hand fatigue, multiply QSOs – and incoming QSLs. Patented "command strings" let you store text in the buffers, select the speed, weight, spacing or message repeat count for each one, and link them together in any sequence you desire.

Kit SA-5010, μMatic Memory Keyer ..... was $99.95
THIS SALE ONLY $79.95

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9:30 a.m.-5 p.m. Sat.

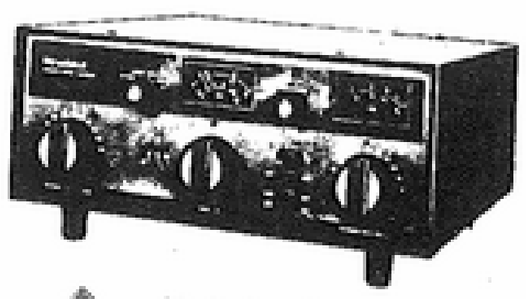
SUPER VALUE SAVINGS FOR THE HAMS

Deluxe Antenna Tuner gives you power, convenience

SAVE $40.00 NOW ONLY $239.95

The SA-2060A Deluxe Antenna Tuner combines five of the most useful and important station accessories in one compact, space-saving unit. With coverage from 1.8-30 MHz including MARS, CAP and WARC, this 2 kW Tuner exactly matches the selected antenna to any frequency in the 160 to 10 meter spectrum by clearly indicating forward and reflected average power plus SWR. Capability and convenience at a price that's hard to beat!

Kit SA-2060A, Antenna Tuner ..... was $279.95
THIS SALE ONLY $239.95



A single switch selects either one of two coaxial or balanced antennas, long-wire feed and bypass

TRS 80C Central Oklahoma Computer Organization

Bulletin Boards

I've writen several times about the FLEX net bulletin board, and in this artical I'll only repeat those things people seen to have forgotten or a new item of interest.

FLEX NET:

The thing most people seem to have trouble with is the fact that they are operating someone else's computer when on the net. If you wish it to send you a program .. just type SEND TPCHK.RSM ENTER . It will tell you to proceed. Then you do whatever your computer needs to receive. Also note that the Flex net has two drives, Drive 0 is for messages or flex users and drive 1 is for programs. If your'e interested in program then you may asign the working drive as drive 1, do this as follows.... ASN W=1 ENTER . To only list new programs and not the whole drive try-- LISTNEW 02/01/84 ENTER . This will list only those files put on the flex net since Feb. 1, 1984. Use CAT, not DIR to find what is on drives. Phone # - 722-6809

COLOROMA:

This is a new Bulletin board in midwest city, run by Ted Freeman, at least thats the name that comes up at sign on. The BB format is one from the Coloroma Co. of Elgin ,Tex., and is quite professional.

On signing on the BB you'll be given a code so you can sign on faster next time, it also checks for your messages and will display them at sign on. It even changes the charactor line length to match your computer.

Everthing is MENU driven, so its all easy to use. Call and enjoy.... 528-3175

Holly

Chit-Chat

Are you studying Basic from Radio Shack's manual that came with your Extended-Basic COCO? Jump ahead to the chapter that covers the EDIT command. Learning to use edit can sure help when entering programs. The following four functions work but are not listed in your manual.

A - cancels changes and starts over
E - ends Edit and saves changes
NKC - Kills all characters up to the Nth occurance of character 'C'
Q - Quits edit mode and cancels changes

This is from 'THE TACO SHELL', a newsletter of the Tinker area computer owners.

Written by Jack Cochran

There is an article in the March issue of RAINBOW that tells how to put the OS9 loader on a OS9 formated disk, as soon as I do it and understand how I'll make note of it here for those who do not take the Rainbow.

Poke, poke and more Pokes:

Adress, #	Results
383,158	Disables list command
383,0	inables list command
359,60	reduces the rate at which the characters are printed on the screen. Does not word with disk. Typing 'screen0,1' after this poke will turn the screen orange.
395,0	return the screen to normal
111,254:DIR	Transfers disk directory to printer
175,0	Same as TROFF command
175,79	same as TRON command
282,0	turns on lower case flag
282, 255	turns off lower case flag
65495,0	high speed (may not work)
65494,0	returns to normal speed
65497,0	hi-speed with loss of screen
65496,0	returns to normal speed
113,0:new	does a cold start when reset button is pressed
135,0	same as 'INKEY$=""'
25,peek(188):new	PCLEAR0 for disk
65313,4	motor on (cassette)
65313,52	motor off(cassette)
25,14:poke26,0:NEW	on power up does a pclear0 for disk

POKE1536,52:POKE1537,86:POKE1538,198:POKE 1539,1:POKE1540,134:POKE1541,4:POKE1542,61: POKE1543,253:POKE1544,0:POKE1545,141:POKE 1546,189:POKE1547,169:POKE1548,86:POKE1549,53: POKE1550,86:POKE1551,57:POKE360,6:POKE361,0

This will make the computer BEEP on KEY strokes

25,6:new	PCLEAR0 for cassettes
25,PEEK(27):POKE26,PEEK(28)-2:load porgram to be merged:POKE25,30:POKE26,1	Merges two programs (must be in default PCLEAR4
359,255	Turns off screen, command that do not require the screen will still work
359,126	returns screen to normal
151,MSB:POKE152,LSB	Sets line delay for printer

PEEK A BOO

PEEK	REMARKS
182	returns present pmode number
275	timer value
135	ASCII code of last key pressed in program
55 + PEEK(56)	ASCII code of last Variable used
487*256+PEEK(488)	Start address of ML program
126*256+PEEK(127)-1	End address of ML program
157*256+PEEK(158)	EXEC address of ML program
25*2565+PEEK(26)	start of basic program
31*256+PEEK(32)	End of basic program
65313	return an even number if you have version 1.0
65314	return an even number if you have version 1.1
235	returns disk drive number
236	returns track number
237	returns sector number
240	returns disk error codes
274*256+PEEK(275)	returns value of timer
CHR$(PEEK(474)+PEEK(475)+PEEK(476)+ PEEK(477)+PEEK(478)+PEEK(479)+PEEK(480) +PEEK(481))	returns cassette file name last loaded
485*256+PEEK(486)	EXEC address of cassette loaded ML program
186*256+PEEK(184)	returns end of current hi-res screen.

EXEC, EXEC who's got the EXEC.

ADDRESS	REMARKS
41175	returns version of basic you have
44539	same as A$=INKEY$:IF A$="" then 10
40999	Cold start (unless in 64K)
49152	ROM PAK starting address and will produce disk sign-on message

If you have a PEEK, POKE or EXEC address you use let me know (in writing) at the monthly meetings and I'll put it in the C&E for everyone else.

Holly

SALE SALE SALE SALE SALE SALE

MODEL I, 4K, THERMAL PRINTER
VIDEO DISPLAY --- BEST OFFER
MINT CONDITION
691-4648 JIM WRIGH (AB4R)

TROUBLES, TROUBLES AND MORE TROUBLES

First let me set the stage for you. I write these little short articles for the C&E each month and send them to Joe Harding on a disk by mail. WHY by mail and not by modem? Datalink, the only program I know of that will transfer telewriter's files directly, will not work on Joe's disk. I think it's a timing problem with his drive (it's too slow in coming up to speed).

The only other program that both Joe and I have, is Super Color Terminal. CLRTERM+ will not send telewriters files! Well, thats not quit true, it sends them just fine but will not save them back to the disk at the other end in a manner that TW64 can read in.

I tried everything, saving TW64 files in ASCII, sending it and then saving in basic, ascii and bin on the other end, nothing worked. TW64 just would not read any file CLRTERM+ outputed. Mind you, at this point I already had well over an hour tied up in tring all this! When in desperation, I called Larry Bugg, who has been working with TW64 and might be of help to me. Larry did not know how to make TW64 load CLRTERM+'s files but suggested I try the LIST program in SPELL-N-FIX.

LIST will list to the screen any ASCII file on the disk. Well, not the best solution but a possible a solution. Loading in LIST and listing it, I found it very easy to change so as to make it list to the printer (change the PRINT A$ to PRINT#-2,A$). AND wala, my original TW64 file saved in ASCII on the disk was printed over on the printer, which was where it needs to be after Joe gets it anyway --- right. I did see a problem at this point, in the fact that Joe would not have a TW64 file stored on disk in case he needed to reprint the file for some reason. But that was minor..

Now I have at least two hours in tring to work this out -- right. Oh, one other thing that happened in all this --- I lost one of my telewriter files! YES - one for this month. But at least I had this all worked out. So back to CLRTERM+.

After loading and EXEC'ing CLRTERM+ at least 10 ten times through this, transfering files back and forth from BIN. to BAS to DAT to ASCII, just to find a way for Joe to print the file when he receives it. WHAT do I find when I load CLRTERM+ for the final time to send the file to Joe ---- Right there on the screen, in the MENU, as big as an oak tree, was:

PRINT BUFFER?

NO, NO, can't be that easy. But alas, the best laid plans of mice and men ... Yes it works right from the MENU of CLRTERM+. All I needed to do was save the flies out of TW64 in ASCII, load it in CLRTERM+, send it and let Joe print it out of CLRTERM+. He could even save the file and read it back in later with CLRTERM+ if hewishesto save the file.

WHY, am I setting here showing my ignoance? To make a point to those new people, just entering into the world of conputers. I can't count the number of times I've heard someone at the meeting say, "you are so far ahead of me in computers". Don't throw up you hands and quit when you hit some problem. Look at it, think about it, ' 'y things, call someone if you need too. BU' don't quit! THE SOLUTION MAY EVEN BE IN THE 'MENU'.

Holly

CLUB OFFICERS

Chairman	= Tom Stott	324-5086
Vice Chairman	= Hollis Holcomb	799-2539
Secry/Treas	= Miles Langmacher	352-4059

Meeting held at Red Cross Building
10 & Hudson
First Sat. of the month; 9:00 A.M.
Club Dues: $5.00 per year

Meeting called to order at 9:13 A.M., Saturday, February 4, 1984 by Tom Stott. 78 were present.

NOTICE: Club dues are NOT required. They are for people who wish to help out C.O.C.O. and get the CORA C&E. As stated in our constitution, Article III:

There shall be but only one class of membership in our club and that shall be full membership. Membership in or services of our club shall not be denied to anyone on the basis of race, sex, creed, or national orgin.

Introductions were said and everybody got settled down. There are 2 issues I would like to share with you. 1) A non-legitimate vote was held concerning if we should hold our meetings on another date. MAJORITY said: DON'T CARE. 2) The club is considering buying an FM mike. This is the kind you see the people on GOOD MORNING AMERICA wear. Your views on either one of these topics is greatly valued and should be presented at the next club meeting.

There is a new club especially for the CoCo named Tinker Area Computer Owners (TACO). They meet the first Tuesday of the month at 4:30 P.M. I didn't catch the meeting place, but it might be at Tinker. They also publish an interesting newsletter entitled "THE TACO SHELL".

Now for the biggest part of the meeting, the

PROBLEMS!!!

Some problems with Telewriter-64 were discussed. It seems that it uses a ML write routine that will not work with the new Disk Rom.

The program "JSRDIR" will not work because the jump tables in Rom have changed with the new CoCo. What else is different?

Radio Shack changed the vector addresses when using the POLCAT routine. This one liner checks for all references to the old vector address and changes them to the new address in the 1.2 Rom.

```
10 PRINT "WORKING": FOR T=(PEEK (157) * 256 + PEEK (158)) TO 32766: IF PEEK (T)=161 AND PEEK (T+1)=193 THEN POKE T+1,203:NEXT:ELSE NEXT
```

In the program "TAX'83" (on FLEXNET 722-6809), to itemize change the DIM(127) in line 77 to DIM(130).

To use the program "MC10CONV" do the following steps:

1) CLOADM or LOADM"MC10CONV",&H300 (for 32k, use &H7000 for 16k)

2) CLOAD"your program filename",&H4000

3) EXEC

On the DMP-120 and DMP-200 if the left character drops, use the following poke: POKE 151,(anywhere from 1-255)

Last, but not least, CCN went bust. Hot CoCo has agreed to carry out the subscriptions.

Next, we had the drawing. Wouldn't you know it, nobody else but my dad won the power plug strip. How come I never get that kind of luck? Grumble.. grumble....

For the last part of the meeting, Bob Helms gave a lecture about using "DSKLIBRY". AU REVOIR!

Secry/Treas
Miles Langmacher

THE BIG SIGNAL
OKLAHOMA CITY AUTOPATCH ASSOCIATION, INC.
Hot NEWS

The February meeting was called to order by Kathy, WB5NDO at the studios of KWTV Channel 9. The annual weather meeting was under way with 325 in attendance. Quite a few new faces showed up and a few that havn't been seen in public for a while. We were very pleased to have Jim Williams and Randy Ollis from Channel 4 and Fred Norman from Channel 5 and Ken Crawford from the National Weather Service. We also had several members of Sheriff's, Fire, Police and Civil Defense departments from around the Metroplex. The Autopatch Association wishes to thank all who attended and sincerely hope we will work together in the future for mutual public service.

The severe storms net will be run the same as it has been in the past with very few changes. The net control operator will first ask for checkins which can go mobile. Then checkins by quadrant will be asked for and in that order only. So please don't just jump in when you feel there is a lull in the net, information may bebeing checked or a particular station might just be trying to get into the net. If you happen to be at a particular location and you check in from that location, then you need to relocate please report back in that you are doing so, in order for the net control to help you stay advised of what might be in store for you in a certain area. One other reporting procedure that happens every year that we need to work on; when the net control asks for checkins with a certain condition number or higher, please do as the net control asks and not check in when you might have blue sky or it just starting sprinkling here.

Well, we only need a little more so we can order the controller. We need approximately $700 more and we'll send the paperwork and get the controller hooked up before severe storms get to looking at us very heavy.

'73
WD5CSM

YE GADS, I NEVER SAW SO MUCH

There were chutes full, bins full, carts full, baskets full, conveyor belts carrying more, all to end up in various parts of the Post Office in Oklahoma City.

A two hour tour of the post office was arranged for mailers in the area and your C&E editor was included. We started out in groups of 10 or so and scattered out in different directions. Once we ran into another group - both stared at the other and I guess we stared them down, because we went right ahead.

I had seen all of the machines on TV but that didn't prepare me for the mass of mail that "flows" through the Okla City PO. There were machines sending the letters, magazines, junk mail and what have you all over the place.

Well I saw what was happening to the other magazines and I think I understand why sometimes the C&E gets to me the next day and one time it was a whole week. So if you have trouble getting your C&E I guess you will just have to wait - - they will get around to yours in a few days, or so.

Joe, WA5ZNF

FOR SALE: ICOM 720A HF Transceiver/ General Coverage Receiver. Includes PS-15 (20 Amp) Power Supply, 500 Hz CW filter and hand microphone. This rig recently checked thoroughly by the ICOM center in Dallas. Transmits on all amateur bands plus receives continuously from .01-30 Mhz! Transceiver, filter, power supply and mike for only $825. Call George, AD1S. 722-6195 after 4.

COMPUTER FOR SALE: Complete system previously used in a business. ZENITH Z-89 Processor with Z-19 Display, 64k RAM, plus Z-89-37 Double Density Disk Controller, 3 Serial I/O Ports, Z-47BA Dual 8" Disk Drive (2.2 Megabytes) and Z-25(150 cps) Data Printer. As is, but seems to run O.K. Will sell for best offer. Contact George Adkins for info.Days:947-0511 Evenings: 722-6195

AMATEUR RADIO AND THE LAW TO BE MARCH 8 T.R.N. TOPIC

Like it or not, you may find that hostile new laws will determine the extent to which you can configure and enjoy your amateur radio station. For example, local governments may place severe restrictions on your antennas or operations. Furthermore, malicious interference and obscenity may deprive you of the pleasure of operating your station. These are just some of the issues that relate to your future enjoyment of amateur radio that will be discussed by legal experts on the March 8, 1984, North American Teleconference Radio Net (T.R.N), presented by the Honneywell ARC.

The featured speakers will be attorneys: Chris Imlay (N3AKD), ARRL Council; Jim O'Connell (W9WU); Joe Merdler (N6AHU), and Bob Benson Q.C. (VE2VW). These amateurs represent the finest legal talent involved with amateur radio issues. And T.R.N. will bring this concentrated expertise and information together for amateurs across North America through over 180 "gateway" stations, mostly VHF repeaters, all linked together for the net. The vast majority of radio amateurs are within range of one of these gateway stations, whether at their home stations or via their mobile or hand-held radios.

Many amateurs will have the opportunity to direct questions to the speakers on the T.R.N. Thus, there will be the opportunity for amateurs to explore with legal experts such questions as cable TV leakage, proscecution for "pirate" TV antennas, the 10-meter amplifier ban, FCC backing of amateur frequency coordinators, requirements for "simpatches", etc., in addition to the issues described above.

So, to hear amateur radio's finest legal talent discuss the legal issues that will shape and define the nature and scope of amateur radio to come, tune into T.R.N. at 7:30 pm C.S.T. on Thursday March 8. Note that local nets may begin earlier.

And also mark your calendar for Thursday June 14, 1984, 7:30 pm C.D.T. when T.R.N. in cooperation with CRRL will present international antenna expert Dr. John Belrose (VE2CV).

When Oscar 10 is available for uplinking during the net, the T.R.N. is also expected to be available hemisphere-wide on downlink frequency 145.957 MHz.

Scanner radio owners may also enjoy tuning into T.R.N. to learn about the topic and the fascinating world of amateur radio.

Watch next month's C&E for more details.

N5EC: "By the way, Chuck, have you forgotten that you borrowed my 2 meter power supply?"

WA5GHT: "No, Tom, I'm a slow forgetter. Give me time and I will."

Sign on a flea market table at last Ham Holiday: "Price $150. Rebate $140."

What one 807 tube said to another: "What are you going to be when you blow up?"

The game of life is not so much sending CW but receiving it as well.

The older a ham gets, the faster he could copy it as a boy.

You don't need to talk about yourself on 20 - it will be done after you leave the air.

A poor antenna is like playing tennis with the net down.

We have found out that an ego is one thing that can grow without nourishment.

What some hams do not know about putting up antennas would fill a cemetary.

Edmond Amateur Radio Club
P.O. Box 75252 / Okla. City, Ok. 73147

Stan Van Nort - WB5UIY

****
CORRECTION
****

TELECONFERENCE SLATED FOR MARCH 8

Due to some old information dug up in my "stack" filing system, I erroneously reported the Teleconference Radio Net would be presented March 1st.

The correct date for the Teleconference Net will be March 8, exactly one week later than previously reported. Please pass the word to all your friends about this net.

Edmond Amateur Radio Club, Inc., is proud to announce its participation in our fifth Net.

The nation-wide net is presented to the amateur radio public by the Honeywell Amateur Radio Club of Minneapolis, Phoenix, and Billerica, MA. The net connects over 200 repeaters in the US and Canada for its presentation. Several of the repeater facilities are connected for "talk-back" capability. This allows amateurs from across the country to ask questions to the net.

The March 8 net topic will be "Amateur Radio and the Law," which will assemble a panel of legal authorities to discuss laws as they affect you, the amateur.

Restrictions of antennas or your operating hours by local governments may be in the future for all amateurs. The problems of obscenity and malicious interference are robbing you of your pleasure in operating. Cable TV RF leakage, the 10 Meter amplifier ban, simplex autopatches, and the FCC's relationship with the new Volunteer Examiner Program will surely be touched upon during the net.

Featured in the TRN will be:

Chris Imlay N3AKD, ARRL Counsel
Jim O'Connell W9WU
Joe Merdler N6AHU
Bob Benson, QC VE2VW

All are attorneys, and represent the finest legal talent involved in Amateur Radio issues.

The Teleconference Net will be presented Thursday evening, March 8 at 7:30 p-m. Tune-in around 7:15 to hear pre-taped interviews with panel members and the interconnect and check-in process.

Also connected on a link basis will be the KI5P Repeater in Fairview. This allows hams in Northwest Oklahoma to listen-in. Due to non-response, EARC will not present the net on 75 Meters as previously planned. If you or your friends would like to hear the net on 75, please contact Trustee Dennis Orcutt, WB5ISN. Depending on response, the HF portion of the net may be revived. - de WD5DYI

IMPORTANT CLUB MEETING MARCH 12

Edmond Amateur Radio Club, Inc., will conduct its second business meeting of the year March 12th at radio station KOFM. It is recommended that members only attend this particular meeting.

One of the activities planned will be the distribution of manuals for each member. The manuals will contain club materials such as the Constitution and Bylaws, Rosters, and an operation guide for the repeaters.

Much work has been underway in Executive Committee to rework the club Bylaws. Besides a general house-cleaning in the document, various new items are addressed and regulations provided for their implementation.

In a previous action, the membership voted to accept the final version of the Club Bylaws as presented by the Executive Committee.

Another topic will be the presentation of a Budget. The membership voted at the last meeting to request a Budget be presented at the March meeting. From the information presented, it may be determined by the Club to make some adjustments in our dues.

Members--mark your calendars NOW to attend this meeting. It is very important!

MORE CONTROLLERS POPPING UP

Since the installation of the ACC RC-850 Controller on the 147.63/.03 repeater in July of 1982, there has been much interest in the features and convenience of the machine.

One of the driving forces in the decision to purchase the '850 was Mike Salem, N5MS, one of the Charter Members of EARC. Mike's purchase of the '850 for the Norman 28/88 repeater is testimony of how he is sold on the controller.

During the month of February, the K5ELL repeater on 07/67 signed on with an ACC controller. Also, the Oklahoma City Autopatch Association's 22/82 machine will soon be controlled with an '850. Word comes from Brad, KA5MRJ of Tulsa (and student at OU) of his ordering a super-controller for his 72/12 machine in Metro Tulsa.

It seems as if the state-of-the art is in our midst when referring to repeater controllers. Oklahoma will be well-represented with these fantastic pieces of equipment. No matter what options or configuration the controllers may take, they are fantastic pieces of machinery. Congratulations to those who have put their faith in the purchase of the ACC Controller. From our experiences so far, you will not regret it.

DAYTON-BOUND

Several Edmond ARC members will be making the annual trek to Dayton for the Hamvention in April.

Reservations for the Hamfest of Hamfests should already be made by now, as hotel and motel rooms become very scarce during the monster weekend.

Let's hope the congregation from Oklahoma has a great time and still has enough money left for Ham Holiday in July!

People who know the least seems to know it the loudest.

Harry Ham is getting a lot of exercise these days. He runs down his friends, jumps at conclusions, sidesteps responsibilities and is always pushing his luck.

People differ. Some object to the fan dancer, some object to the fan.

No, honey, a broadcast isn't what you use to fix a woman's broken arm.

The way some people catch a fish is by the tale.

Fireproof: Being related to the boss.

Dieting: The penalty for exceeding the feed limit.

Did you hear about the plant in the math teacher'sroom? It grew square roots.

A space explorer is a fellow driving around town looking for a place to park.

Some minds are like concrete. All mixed up and permanently set.

Thirty days hath September, April, June and my neighbor for speeding.

Our new rig came through the mail marked, "FRAGILE - please throw it underhand."

Q. R. Zedd

THE GREAT ONE TELLS MORE OF HIS EXPLOITS

Faithful readers will recall that last month we were telling how Oklahoma's own Q. R. Zedd, the world's greatest DXer and holder of the nation's only one-by-one callsign, A5A, thrilled the Tuesday morning coffee-drinking and lie-swapping meeting in Norman recently when he unbent a bit and got to reminiscing about the good old days.

After telling how he worked Eskimos feeding blubber antennas on 75, and smoked the gold fillings out of a Munich orthopedist's mouth with a shot of well-aimed rf, Zedd got a coffee refill and allowed as how he was reminded of some other fun stuff that had happened over the years.

"It was in 1977, I reckon, that I got in a pileup shootout with ole Bill Buckeye and Bill Blast," Zedd recalled. "I think it was an A51 we were after, and it was on 20 meters, so about sixty thousand others were in there calling, and I wanted to asked my pal Pradahn what was new with him since ur QSO of the previous afternoon, so naturally I keyed up and dropped my call in there fifty times, along with everybody else.

"Naturally Pradahn came right back to me and we got a right nice QSO going, but some of the nerds as usual got jealous and started laying a lot of carriers and things on us. I had no trouble with my filters in line, but Pradahn was having a problem. So Bill Buckeye came on, being helpful, and started calling everybody lids and CBers and all, and cussing, and Bill Blast chimed in with this lecture about being polite and everything, -- I laid on his own carrier to show them crappy it sounded, and a laughing machine, too.

"Unfortunately, the band changed and A51 faded out, but about as I was going to QSY, I hear this little signal down under there, so naturally I yell a couple of QRZs, and back comes this feeble signal from somewhere in China. It was hard to make out, but I figured out that it was a Chinese scientist lost in the mountains, and he had modified his quarter-watt handi talkie to the ham bands in the hope somebody would hear him and get him out of the avalanche he had got himself stuck in.

"I got his location and all, but now the question was how to get the word to Peking authorities fast enough? What I did was swing the beam around the the right heading and crank up the big linear and hit the color TV set in the home of the Peking police chief. I had to talk fast to get him to understand the message before he ran out of the room to start kicking his dog and complaining about the local CBer to the neighborhood committee, believe me. But I managed, and later the Chinese gummint invited me over to honor me for my greatness, and they named part of the Great Wall after me.

"There was another time during the peak of one sunspot cycle when propagation was so good, I quit working the bands one night about midnight, and when I went back out there the next morning, there was this enormous pileup of JAs, working my long-delayed echos that were just going around and around the globe, picking up more contacts every trip.

"Then there was the time when I joined 10-10 International and worked the whole club in a four-hour sitting. But that was earlier, and 10-10 had only about seventeen, eighteen thcusand members at the time. I even worked the Chatanooga ChooChoo. I only knew two other people do that, WB5QNK, who is inactive now in ham radio, and WB5TZZ, who got some new weird call and is never on the bands any more.

"I like Straight Key Night. I worked all stations in that one year. Of course I can't contest much any more because people like Boris Badenov over there in Russia get upset when I show them up bad. That's why I quit working the ten-meter contest and Radiosport and some of those. Like I was telling KA5EFJ the other night, when we were out dirt-biking in some snowdrifts, you've got to give the younger boys a chance."

Zedd lapsed into silence, and the boys shot him a few questions. Here are some of the opinions he rendered:

DXing will get worse this cycle before it gets better.

George Steinbrenner will fire his manager again this year.

W2NSD/1 will be named chairman of the FCC.

The cost of sausage and vacuum tubes will go up.

N5MS will spell "obviously" as "odviously" in his C&E column at least eight more times this year.

W5OU will get a beam up for 20 meters and wipe out the world, except for W5NUT, who will then wipe out W5OU.

The Chicago Cubs will lead the league on the Fourth of July, then lose 74 straight to finish as usual.

There might have been more, but the TR7 strapped to Zedd's tee shirt came alive at this point (about 10 a.m.), and the great one had to rush away.

Tondelayo was calling. It was time for their singing lesson. They are, it has been reliably reported, giving Kenny Rogers a little tuneup.

--KU5B

BICENTENNIAL AMATEUR RADIO CLUB

"To Promote Radio Communications"

The meeting was called to order by The President Don Duck AE5N.
Introductions followed. There were 10 members and guests present.
Treasurer Report: Treasurer Tom Webb reports the club has $360.00 in bank and cash on hand It breaks down to Club Fund 119.54,Repeator funds are $184.78,and Cash on hand $33.68.
C.O.R.A Report: Ted WD5JNT reports that he and Joe Ramage represented the club at CORA. Ted reports that the lady who represented the Lincoln Plaza convention center is no longer employed by the center.. so some problems were incountered when they approached the new management on promises made to cora for HH84 but after some negotiation all points were worked out . The motion was passed that made the Editors of the C&E voting members in CORA Meetings.
Old Business: no old business was discussed.
New Business: Some new and exciting things were discussed for Field Day 1984..There will be something different this year. you will have to come out to the next few meetings to find out what it is. YOU WONT WANT TO MISS IT!!!!!!.
Secretary Report: The secretary read the old business from last meeting and submitted the minutes in the C&E for approval.. Minutes were approved.
Pre Reg. committee Report: The committee has not of yet met but a meeting is planned for This coming Sunday.
The Program feature for the meeting was a report on the Repeator control circuit. The Circuit boards have been completed and are waiting now to be stuffed.
the meeting adjourned.
Jerry Sproul N5AUH Sec.

MID-OKLAHOMA REPEATOR, INC.
WA5YTI

Hi Everyone,

It seems like a long time since I have published anything so without further delay I am going to do something right now. Just a briefing on last month's activity, and of course if you attended you know what I am talking about. MORI members and others all gathered at the GM Assembly Plant (88+ were in attendance) where we had a fantastic orientation and tour that was arranged by ND5S, Ron. It was interesting to see how all of the cars were bolted, nutted, etc. together. Some of you may possibly have one of your own. It was a 2-mile tour in a very large area, and took about 1 hour to see just what we did. That was a very big (BIG) place. At the end of the tour, we discussed different things, and then Ron passed out some key chains in commemoration of 75 years of production. Thanks to Ron for making this possible, and of course all of the employees and employers for putting on an outstanding performance.

GOOD NEWS!! I am sure that most of you have been waiting to know and hear this next feature. Our new controller has arrived and been installed. Thanks to Merwin, K5ELL (Our Trustee), Bob, N5EPV and Ken, K5VVZ who have spent (and still are) many many long, timeless hours of getting it on the air for us. Also, I want to make mention that there were a lot of contributions made, and say thanks to all that made them. Before I mention a few of the procedures, I hope that whenever you use it that you will show great consideration because---
If you give it - You will get it back !!!

TO BRING UP PATCH

Hit * (Star prefix) and the number you want dialed (Example, 1, 2, 3, 4, 5, 6, 7)
(If you let up on the mike, it will be ignored,) otherwise you will hear a male voice say- A P (autopatch) then a female voice will repeat your number back. If the number is no good - DO NOT do anything, it will cancel out by itself. If the number is good - kerchunk within 1 to 1 1/2 seconds and you will hear a BEEP!! That means that you are too late. (Then you will hear the number being dialed.)
When call is completed: Hit #, it will release and you will hear "CALL COMPLETE" "DATE AND TIME" (Example: 5:35pm 2-14).

FOR EMERGENCY NUMBERS 9114 (EOC)

This is used for police, fire, ambulance, etc. - it is a general number but in the future there will be others, so keep your ears open.
Hit # to cut off.

There will be many more new and exciting things coming up in the future so to find additional information come to a meeting. I might add that there will be a control operator on the air at least 24 hours a day (in fact there are 3 of them) to assist you if you have any problems.

REMEMBER TO SHOW YOUR CONSIDERATION-it does pay off!

In closing my article for this month, even though Valentine's Day has come and gone, think about this one....(I received this from a very special friend who is at Cedar Lake (where my love is too - HI!) it was published in one of the papers.

KA5FED

GREAT PLAINS A.R.C.

W5HGH Repeater 146.13/73

On Feb. 7th. the Great Plains ARC met at the Woodward City Maintance Building.
The minutes were read and approved.
The treasurer reported a balance of &249.37.
The Mooreland Nursing Home messages were discussed. An article on this appeared in the"Daily Oklahoman". This service was done by N5CCV & KB5XI.
The "73"repeater was discussed. Windle reported that the transmitter was tuned. We lack wiring the receiver and the Cor board. It may be on the line this coming weekend.
N5CCV espressed thanks to Gary,NC5C,for his efforts on the "Novice Roundup".
The floor was opened to amend our bylaws. We read the present by laws.
A motion from the Oct. minutes was made to amed the Constitution that the President not suceed himself. It was (19 for) passed.
KD5JR made the motion that we establish an associate membership to consist of novices, and/or spouses of amateur members belonging to the club. Dues will be set at $3.00 per year,and this would be adjustable as set forth in Article V of the Constitution. Provisions would in no way limit novices from becoming full members of the Club. Associate members willnot have voting privledges. It was seconded by N5CCV. It was passed (19 for).
The Eye Ball QSO in Mooreland was discussed. Lee made the motion that we vote on the dates of May 6th or May 20th. Gordon seconded. Passed.
May 20th was decided.
In New Business N5CCV proposed for Membership: KA5STB Mark Bowman& Ka5STC Michael Bowman.
NC5C made the motion these be members.Rod Ford seconded. Passed.
KB5XI made the suggestion that our August meeting be made with the Wheatstraw ARC at Canton on the 2nd Sunday.
Bill Wyatt spoke about the radar, windspeeeds, reporting and spotting.
He suggested several attend Gary England's weathershow on Feb. 21st. at 7401 N. Kelly.
We adjorned.

73's
K5YZK

DAILY VALENTINES

How sweet to get a valentine
Of plain or fancy art,
A rose so pink and violets too,
Or satin-covered heart.

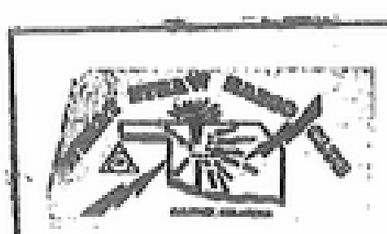
But more than beauty or design,
We prize the words that say
The sender's love comes with the gifts
In quite the warmest way.

We like to know that someone cares
That someone wants to do
The kindly deed that makes us feel
Well-loved and happy, too.

So why not give expression then,
To love for friends so dear...
Not only on one certain day
But many times a year?

Our valentines may be a smile,
A cheerful word or two,
A helping hand, a tender glance
That signals, "I Love You."

And if we often take the time
To give these friendly signs,
The world will soon be brightened by
Our daily valentines.



After a Christmas dinner enjoyed by 57 present, meeting was called to order by KA5FUU Tom president. After everyone was welcomed, N5EMD, Virginia, introduced Roberta House and waitresses. Self introductions were made by all. Minutes of the previous meeting were read and approved. Mr President called for old business with no response. Asking the technical committee if they had anything to report on our repeater, K5GGL George said very intelligently "its still working".

KA5FUU Tom asked were the next meeting was going to be held. Kingfisher accepted. The annual Crippled Childrens Christmas contributions neted $106.85. K5GGL George said said the Wheatstraw Club was not having enough representation to C.O.R.A. meetings. We need votes to help control the meetings. George invited anyone to go. Marvin WA5JHB said he thought we would have to have the same representatives each month. KA5FUU Tom entertained a motion that Venus Vanlaningham be a rep. It was moved by K5GGL and seconded by WA5JHB and the motion carried. Tom KA5FUU called on the nominating committee to report their nominees for 1984 officers. Joe WA5FLT said that there were so many good canditates, they could not come up with only one for president. For the vice-president they nominated K5LLX Ray and AB5Z Young Ray. For secretary-treasurer they nominated K5GGL George, and for reporter they nominated WA5JHB Marvin.

KA5FUU Tom read article 4 of constitution and bylaws concerning elections of officers. K5GGL George said that since the nominating committe had no candidate for president, the committee spokesman WA5FLT Joe would have to be a candidate. From the floor Mary Ann WA5VNF nominated KA5DUO. K5VRL Jim nominated W5MGZ PERRY but Perry declined. K5VRL moved nominations cease seconded by K5RMI Butch. Motion carried

New president for 1984 is KA5DUO Leo From the floor Margaret WA5RLP nominated Joe WA5FLT for vice-president. WA5JHB nominated KA5JLA Betty. AB5Z nominated WD5EGB Ed. K5GBN moved nominations cease. Seconded by Jim K5VRL. WA5FLT was elected vice-president. Since there were no nominations from the floor Tom KA5FUU declared that Marvin WA5JHB was elected for reporter. There being no other nominations from the floor for sec.-treas. Tom declared that George K5GGL was elected secretary-treasuere.

K5YVI Bill announced the opening of his computor business in Watonga. He is starting a Computor School in January, invited all hams to attend free of charge.

K5VRL moved that meeting adjourn, seconded by WD5EGB Ed. Carried.

Next meeting Kingfisher on January 8th

The January Wheatstraw Radio Club meeting was held at the Peoples National Bank on Jan 8 with around 32 present. The new officers did a good job and the program presented by WD5GLD Richard was some video tapes about the flight of STS-9 and Owen Garroit. Everyone sure enjoyed them Richard.

Refreshments were good as usual, but this reporter ate too much, Ha.

AB5Z Ray from Longdale spent about a week in the hospital in Fairview having tests and then went to O[illegible] for some more tests. Understand he's getting along fine, at least he worked this past week and boy was it cold. (Jan 16th through 19th)

Ralph WA5PFK at Watonga retired at the end of 1983, but I think Goldie is not letting him sit and rock any. Ralph has been keeping records of the Wheatstraw Net every Wednesday night. He passes on the information that;

1982 total checkin	895
1983 total checkin	1105

This is an increase of about 19%

The Wheatstraw membership checkins increased by 13% and visitors checking in increased by 30%. All this increase in activity has sure resulted in some lively nets. Lets keep up the good work. We had 17 members who checked in over 70% of the time. They are

KA5DUO	WE5EGB	WA5FFE	WA5FLT
KA5FUU	K5GBN	K5GGL	WA5JHB
KA5JLA	WD5JNT	K5LLX	WA5LZD
W5MGZ	KD5OG	WA5PFK	WA5RLP
K5RMI.			

Next meeting will be in Watonga at the bank on Feb. 12th. Hope to see you all there.

73 WA5JHB Marvin

We were met with a very nice day for a February meeting in the fine city of Watonga. We wish to thank those responsible for the meeting place and the refreshments. They were without complaint as is always the case with our fine club. Ralph (WA5PFK) gave us a short program showing slides of his vacation in Texas and Southeastern Oklahoma. It looked good to see all the green from down there in Texas as compared to the brown up here in Oklahoma. Now we know why all the rich farmers spend their leisure months of winter there.

Tne first order of business was the volunteering of Tom (KA5FUU) for the post of activities director. We are not sure what kind of behind the scenes pledges were made but it is well known that Tom does not like pain of any kind. We commend him on his asperation and will be looking ahead to many fun filled activities.

It was announced that the Great Plains Amateur Radio Club will have its third annual Eyeball QSO. In the past we have made a club activity of this event. Our regular club meeting date falls on Mother's Day and the Mooreland eyeball QSO is the next weekend so in the past we have caravaned to Mooreland with our meeting held by radio on the road. Our new activities director will have more on this later.

We were pleased to have three visitors attend. Howard (W5AS) was there soliciting an official Bulletin Manager to represent our club's weekly Wednesday night net. This manager is recognized by the ARRL. The manager has the responsibility to copy the ARRL bulletins and share them with the net. We did not have any volunteers but there are a few that can not turn down an official certificate to put on their wall. This is getting awful close to organization. We can't have much of this and still keep our reputation.

The other visitor introduced himself as Joe (WA5ZNF), and his wife Frances, the editoe of the C&E. This disturbed me because we all know that teh C&E can't have an editor. There is no editor that would allow such an illformatted paper to be printed. But why would anyone go to such trouble to disguise themselves so well just to attend our club meeting? After much research, I read the Bible 3 times, spent 2 days at the Calumet Library, attended 3 Democratic Party Conventions and I just couldn't come up with any reason why someone would want to infiltrate our club meeting. Then reading the June 83 issue of the C&E I found the mystery. We had been visited by the great DX hound Q. R. Zedd and his secretary Tondelayo. The reason for the disguise was plain, with the notorious 6 meter giant Johnny (K5GBN) and the fast becoming household word in 6 meter DXing Betty (KA5JLA) he didn't want an embarresing debate to start. This explains the reason for the disguise but, why was he there? Reading further it was rhumored that the beautiful Tandelayo was great with child, but we now know that this was not true. Could the great Q. R. Zedd have slept through his sex education class? Could he have heard on his great DX radio that Richard (WD5GLD) and his wife Lori had a healthy baby boy February 9? Could he have come to our club meeting to pick up some of our secrets from such a fertile place. We may never know for sure, but if he returns we will know why.

Our next meeting will be March 11 at 2:3[illegible] pm in the United Methodist Church in Calu[illegible]t. Tune in the weekly Wednesday night net at 8:30 on .01/.61 for details on how to get there.

BE THERE OR BE SQUARE!

Ted (WD5JNT)

AERONAUTICAL CENTER AMATEUR RADIO CLUB, INC.

W5PAA

Kay COUNTY ARC

FEBRUARY MINUTES A C A R C

The February meeting of the ACARC was called to order on Friday February 3 1984 with 45 members and guests in attendance.

Introductions were held and then we moved right into election of officers.

All the officers were anxious to assume their new posts, but I have to admit that next year's VP did the best imitation of a chair that I have ever seen!

The new club officers are:

Pres	Jack Iman	WB5SVN
V P	Holly Holcomb	N5ABL
Sec	Gloria Seignious	WD5JPW
Treas	Bob Pace	WA5CJG

Larry (K5RJR) gave the Treasurer's report and Holly (N5ABL) announced that the Novice code kits were available for checkout at club meetings by members.

Ellard (W5KE) made an announcement about some gal he knew of that went to bed with the frequency of a cheap Ham radio (I think he was bragging!).

The evening then turned to a program on packet radio presented by Joe Buswell and Jim Seals. Thanks Guys!.

After the program the meeting was adjourned for coffee and doughnuts.

John (KA5JCX)
Sec ACARC

CHECKING RF INSULATION

Here's a neat idea, culled from Amateur Radio, that excellent Australian magazine. You have some insulating material on hand. An ohmmeter shows an open circuit. So it's fine for DC, but how's it going to work with a husky hit of RF across it? The answer is easily ascertained. Just put a sample on a paper plate (after making dang sure there's no metal in the sample) and set into your microwave oven. Run the oven on high power for about three minutes. If you have a good RF insulator, it'll remain cool. If it gets hot, hunt for a better prospect!

Want to read some more on baluns? The same issue (December 1983) has an excellent article.

Want to type into your TRS-80 III a program for International Morse Code? It's there.

As usual, you'll find the magazine in the ACARC clubroom.

W5JJ

Grady Skillern brought to the club meeting some equipment that belonged to Eddie Shanks, who passed away. Several pieces were sold, and Grady will bring back what wasn't sold and probably some new items at the next meeting.

Thanks to Dave KD5FX for completing the Conoco Call Book which lists most, if not all, of the hams within Conoco around the country.

Thanks also go to Steve KA5SJK and C.L. W5ZWM for completing the installation of the new autopatch access decoder and time clock (voice synthesized!!).

One last item - Happy Birthday to Larry KD5CU, whose big day was the same as the club meeting. Did anyone bring a paddle???

That's all for now -- see you next month.

73's,
Rick WD4CEP

2

It seems as though winter means business this year, for it sure has been cold here in Kay County the last couple of weeks and I bet there will be more of it in February and March. Oh well, Spring and Field Day are just around the corner. Last month's article must have been caught up in the mail and didn't make the deadline.

The January meeting was canceled due to the bad weather and road conditions. The February meeting should be held at the usual time and place—the 3rd Thursday(Feb. 16) at 7:00pm at the Pioneer Drive-In Bank here in Ponca City. If the meeting is changed or canceled, the information will be passed along on the Monday night 2 meter Net.

Only a few noteworthy items at the time. First, the 1984 dues for the Kay County Amatuer Radio Club are now due and payable to the treasuer, Glen Bishop (KA5PUB). The regular dues are $15 and the Novice or the Associate dues are $5. Second, the new autopatch access decoder is now in operation on the 57 patch. A neat feature that it has is that when you clear the patch it will give the correct time. This feature can be accessed without using the patch. For more info, come to the February meeting or call one of the club members. Third, the 10 meter repeater is comong along fairly well and may be in operation by the end of February, depending on the weather. The input will be 29.52 Mhz and the output will be 29.62 Mhz at 100 w.

That about does it for this month, so until March....

73's
Rick, WD4CEP

How did your antenna fare during the high winds on Feb. 18? Fortunately, all I have at the present is a dipole up in the attic, so my antenna is still up. I sure don't want to be around if it blows down!

We had 16 members and 2 guests (Hank Kruckeberg & Glen Bishop, Sr.) at the Feb. 16 meeting. Sam WD5BXI was not feeling well so he couldn't attend. Items that were covered at the meeting were: Nursing Home Radio Project, Cablecom Channel E Expansion, Upgrading Course, Update on the 10-meter repeater, and sale of equipment from the estate of Eddie Shanks.

The Nursing Home Radio Project is a program whereby messages can be sent or received via Ham Radio at no charge to the residents of a nursing home. Since the increase of the cost of long distance telephone calls, many senior citizens can't afford to call relatives and also some may not be able to write. With this service available, they can keep in touch with loved ones at no expense to them. We are also looking into installing a station at one of the nursing homes here in Ponca City where Nick Arms WA5HSU is living.

Cablecom of Ponca City is going to expand the channel capacity of the system and was considering the use of Channel E (145.25 MHz). The Club sent them a letter to notify them of the possible interference to both services if their cable develops a "leak." We hope they will consider another frequency to use.

An upgrading course for license upgrades is being considered. There are several area hams that have expressed an interest in upgrading, and Bob Stark has volunteered the use of his classroom at Stark's Aviation here in Ponca City and may even help with the teaching. The number of people will be limited to 6 or 7 and will be a first-come, first-served basis. A date hasn't been set, but the classes may start within the next 2 months. For more info, contact Delbert WB5YRN or Bob Stark.

10 meters is really booming here in Kay County. All it took was a few donated FM crystal rigs and a little "leg work" to get things moving. 18 rigs have been crystaled up and given out on 29.60 and about 7 or 8 hams are now on 10 meters. The 10 meter repeater is coming along fine and should be in operation within 2 months. The operating frequency will be 29.52 MHz input and the output 29.62 MHz. The first cabinet has been checked out with the transmitter and a receiver and works OK. The second cabinet is a pole mount and will need a little work yet. A 10 meter net is being currently held on Monday nights at 9:30 p.m. (after the 2 meter net) on 29.60. Anyone with a 10 meter FM rig is welcome to check in.

ALTUS AREA AMATEUR RADIO ASSOCIATION

This month I would like to tell about the adventures of two of our members of the Altus Area Amateur Radio Association. They are Gary Alexander, KE5BS, & Delayne Randolph, NE5A.

Gary is an Advanced class licensee who by profession is a systems engineer for the local cable T.V. system. He got interested in amateur radio back in 1982. He is currently quite active on 80, 40, and 2 meters. Gary is also involved in the mysteries of the Commodore 64 computer. Lately he purchased an AEA interface to connect his computer to his two meter FM Adzen and Yaseau low band rig. The AEA interface plus software works C.W./RTTY/ ASCII modes.

A lot of Gary's time is spent on the air with a good friend by the name of Delayne Randolph, NE5A. Delayne who by profession is oneof the Hollis, OK law enforcement officials runs a simular setup. He also mixes the hobby of amateur radio with computers. Delayne also runs a 2 meter FM Adzen and AEA interface. He hold an Extra class license. He also has purchased a C-64 computer.

Far into the nite the sessions last between Altus and Hollis, a distance of 36 miles as the crow flies in this area of southwestern Oklahoma.

A new computer group with a mixture of Hams to "season" the pot is being formed here in Altus. The Altus Commodore 64 Users Group as the name implies is being formed for the above said computer.

The organizational meeting was held January 17, 1984 at the Altus Air Force Base Library at 1930 hrs. Since it was snowing rather heavily at the time- a light turn out was expected. Twenty-four computer enthusiasts showed up for the meeting. The assembled group chose Randy Pinkhan as its President and "Mac" McAfee as Secretary for 1984.

One of the attendees was Loren Simms, WA5CBF, who like Gary, KE5BS, and Delayne, NE5A, wished to mix the best of two great hobbies- Ham Radio and Computers.

The next C-64 Users Group meeting is scheduled for February 14, 1984 at the Base Education Office, Building 155, Altus Air Force Base, at 1900 Hrs.

The February meeting (9Feb84) of the Altus Area Amateur Radio Association convened at 1930 hrs in the basement of the North Main Fire Station. Three members attended this meeting. They were Mike Schenkel, W5VXU; Jim Mollendalh, KB5LS; and the Secretary-Treasurer Loren Simms, WA5CBF.

One of the reasons for such low attendance was that the "word" had been spread around the 9th. Feb. meeting was going to be combined with the local Weather Watch meeting scheduled for the 21st. of February at the City Auditorium at 1900 hrs. The information about the cancellation did not reach the three of us in time. Anyway we reminised about the old times when we were all in th service. The meeting finally broke up at 2100 hrs.

The official meeting of the AAARA is scheduled for the 21st. of February at 1900 hrs. at the Weather watch organisational meeting. CU There.

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EDMOND AMATEUR RADIO SOCIETY 147.735/147.135

Since I missed the deadline for the last CORA newsletter let me do some catching up.

In the last regular business meeting EARS held it's election of officers for the 1984 year. The results were as follows:

President John Callison (Cal) KB0OU
Vice President John Keeling WA5ZGM
Sec/Treasurer Bill Wright KC5GN

The following retain their current positions from last year:

CORA representative David Dowdy KA5AFA
CORA representative Linda Callison WD0FTM
CORA representative John Callison KB0OU
Emergency Coordinator Ken Stepp N5DBM
Repeater Trustee Bill Wright KC5GN

In other news, the Edmond Emergency Operating Center was formally dedicated on February 12. EARS members were invited to the ceremony and most would agree that it is a impressive step forward for the city and the local Civial Defense. EARS is fortunate to be given the opportunity to work with the CD. Our efforts should provide not only a public service but should bind the club together as a unit as well.

After the dedication ceremony was over, several members met in the basement to get a look at the new autodialer for the repeater. Mike Smith KA5MJT did the hardware work and he took the cover off and showed the goodies inside. The software work was done by Steve Spence KA5NRX. Bob McCoy N5BUJ hooked it up to the repeater and it will be in operation for about 3 weeks as you read this. Please understand that this is an open autopatch with special features for club members. If you are not a member you are still welcome to use the pound (#) up and pound (#) down system. Look for more instructions in a coming CORA or ask someone on the repeater.

If you are a member (or even if you are not) make plans to attend the March club meeting. It will be on Sunday March 18 in the Edmond EOC at 2:00 PM. We are most fortunate to have as guest speaker Mr. George Atkins AD1S. Mr. Atkins will bring slides of his expedition to Jarvis Island

SEE YOU THERE-- JOHN WA5ZGM

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PANORAMIC ADAPTOR, A WEEKEND PROJECT

Does that sound a bit ambitious? Not according to VK5QV, writing in the October issue of Amateur Radio magazine. He's probably right too, providing that you make the pcb first (from a layout shown) and accumulate all the needed components beforehand.

He starts out with an oscilloscope, one with a dc response and a slow time base. And, although he doesn't tell you later, you'd better have a receiver that permits negating the AGC as well as getting into the IF portion immediately after the converter stage, before running through an IF transformer or any other bandwidth limiting device. From there on, you're more or less home free.....except for routine construction work.

As you no doubt know, an oscilloscope displays time on its X axis and amplitude on its Y axis. Getting from one to the other recuires a small bit of doing. VK5QV shows how its done. I'll let you pick up the copy of Amateur Radio at the ACARC clubroom and read the detailed instructions.

You oldtimers may recall when WSPAA had a receiver, a Hammerlund Super-Pro, equipped with a commercially-made type of panoramic adaptor called a 'Panadaptor'..... an interesting device to play with. In those days of few signals on a band, you could hunt for a clear spot, tune the Collins model TDD to that frecuency, call a CQ, and watch the new pips jump up over the band as various stations (mostly crystal controlled and well scattered over the band) would reply. Too, it was entertaining to observe the frequency-shift radio-teletype stations lead back and forth between their two frecuencies.

That issue of Amateur Radio has some other eye-catching articles too. There's a Programmable Keyer, an Omni-Directional Co-Linear Antenna for 70 cm, with a 6cb gain and a Digital Inside-Outside Thermometer, just to name a few.

W5JJ

Nursing Home Residents 'Reaching Out' by Radio

DAILY OKLAHOMAN
1-16-84

By Kathryn Fraser

MOORELAND — Many residents of the Golden Age Nursing Center here are able to "reach out and touch someone" without the help of Ma Bell. Or the expense.

With the help of local amateur radio operators Gerald Bowman and Gordon Richmond, residents have been sending numerous messages to friends and relatives over the radio.

"Many of the residents can't write well because of arthritis or poor eyesight," said Faye Foltz, director of social services and activities at the center.

"It's something most people don't even think about, but when you aren't able to write letters, and you can't afford long-distance phone calls, you can lose touch with a lot of people that mean a great deal to you."

Bowman got the idea for the project from another amateur radio operator, G.L. Webb, of Amarillo. According to Bowman, Webb has been working with nursing home residents in Amarillo.

"He's an elderly man himself, and yet he's been doing this for three years," said Bowman. "So I started thinking about doing something like that here."

Richmond thought it was such a good idea he volunteered his services. "This has been good for us. It has been good practice and good fun."

According to Mrs. Foltz, the residents were excited from the very beginning. But the real excitement came when the replies to their messages began to arrive.

"They've enjoyed reading their radiograms so much that we've started taping them to the walls," said Mrs. Foltz. "A few of them have heard from relatives they hadn't heard from in years."

"I had a stroke, and I can't write too good. I guess there's a lot of drunks that can write better than I can," said resident Marie Mathis. "When Mr. Bowman came to my room and said 'Would you like to send a message on my radio?', I said, 'Well, how much will it cost me?', and he said, 'Not a thing, Marie.' So I sent several."

Elizabeth German, 68, a 10-year resident of the center, hadn't heard from her cousins in several years and was delighted when she received a return message from them. "This was just a fine idea. It saved me a lot of spending money."

The return message that 81-year-old Ruth Groendycke received from her nephew in Chugiak, Alaska, traveled the farthest of all received.

Were it an actual race, 87-year-old Myrtle Gale and 93-year-old Florence Campbell would be the front-runners.

Mrs. Gale's favorite reply came at 1 a.m. one day when she received a telephone call from a man who had been the superintendent at a school where she had taught years ago.

Bowman and Richmond, known to other radio operators by their call signs, N5CCV and KB5XI, respectively, would like to continue the service.

DEPARTMENT OF PUBLIC SAFETY
AMATEUR RADIO OPERATORS IDENTIFICATION

Phoptocopied below (a 64% reduction) is the application form for an Amateur Radio Operator's Identification card that is isued by the Oklahoma Department of Public Safety. This identification card for hams was approved by the Oklahoma Legislature several years ago. This may be something that Oklahoma Hams are interested in, but many may not be aware of the method of applying.

The application forms should be requested from: Oklahoma DPS, PO Box 11415, Okla City OK 73136.

PURPOSE OF THE LAW - To provide a special ID for individuals who hold a valid General Class or better license issued by the FCC to operate an amateur radio station in Oklahoma, to encourage such persons to assist in providing and maintaining a means of communications in emergency areas, national or local.

Reo Nicar, NM5U

STATE OF OKLAHOMA

DEPARTMENT OF PUBLIC SAFETY
AMATEUR RADIO OPERATORS IDENTIFICATION
APPLICATION

DATE _____

NAME _____ (Last) _____ (Middle) _____ (First)

ADDRESS _____ ZIP CODE _____

Social Security Number _____ Sex _____

Federal Communications Commission Amateur License Type _____ (General or Better)

Amateur License Issued Date _____

Amateur Call Letters _____

Has your amateur license ever been revoked? _____

If so for what reason? _____

_____

Do you hold any other type F.C.C. License? _____ Yes or No

If yes what type? _____

Have you ever been arrested? _____ Yes or No

If yes for what reason? _____

_____

Special Personal Identification card serial number _____

"PLEASE REMIT A COPY OF YOUR AMATEUR RADIO OPERATORS LICENSE."

AUDIO FREQUENCY INTERFERENCE

That's the title of a highly useful article appearing in the November ?? issue of Amateur Radio. In a detailed, multi-page article, just about every aspect of RF interference to devices designed primarily for reproduction of audio frequencies is given a thorough analysis.

Pick up the issue in the ACARC clubroom. It's worthy of your careful reading.

W5JJ

Since the YF is such a driving force in our family, we decided to buy her a hammer and some nails.

My YF avoids getting up with a grouch -- she rises before I do.

Give us enough rope and we'll hang up a dipole.

A commercial traveler is someone who goes to the refrigerator during the sponsors message.

Ham: "How dare you swear before my wife?"
Partner: "Whoops, sorry! I didn't know she wanted to swear first."

HAM HAPPENINGS REFER TO CLUB SECTION FOR SPECIFICS

March 84

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1	Aeronautical Center ARC 2	COCO 3
4	5	MORI Great Plains 6	ARDMORE 7	ALTUS AREA 8	9	SCARS 10
Wheatstraw 11	EDMOND Club OK-DX 12	76'ers 13	14	KAY County 15	16	VHF Club 17
EARS 18	A.R.E.S. 19	AUTOPATCH 20	21	22	23	24
25	CIMARRON EDIT 26	CORA 27	28	29	30	31

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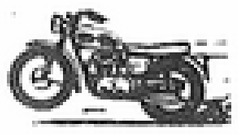

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