

Central Oklahoma Radio Amateurs

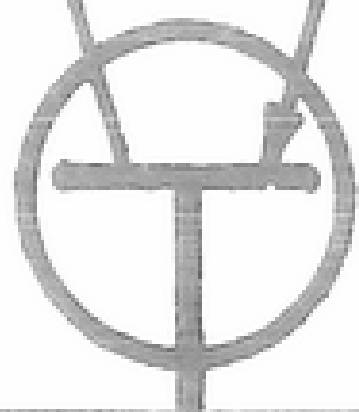
COLLECTOR

AND

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AN INFORMATIVE MAGAZINE
PUBLISHED MONTHLY BY AND
FOR OKLAHOMA RADIO
AMATEURS

AND ANYONE INTERESTED IN
LEARNING ABOUT IT

Volume 6

JULY 1980

Number 66

OKLAHOMA HAM HOLIDAY LINCOLN PLAZA FORUM 4345 NORTH LINCOLN BLVD OKLAHOMA CITY

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in a package this small. The "WAYFARER" comes equipped with 16 poles of IF filtering, variable bandwidth, and optional crystal filters for 600 Hz or 350 Hz.

Impressive as the "WAYFARER" is, its versatility can be greatly increased by the addition of the FV-707DM (optional). The FV-707DM, though only one inch high, allows the storage of 13 discrete frequencies, and with the use of "DMS" (Digital Memory Shift), each memory can be band-spread 500 KHz. These 500 KHz bands may be remotely scanned from the microphone at the very smooth rate of 10Hz steps.

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- ☐ Includes new WARC bands
- ☐ Unique multi-color bar metering - monitors signal strength, power output, and ALC voltage

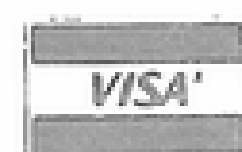
FT 707 with Optional FV 707DM and Scanning Microphone

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Central Oklahoma Radio Amateurs

COLLECTOR AND EMITTER



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Managing Editor Joe Harding, WA5ZNF 737-1044

Central Oklahoma Radio Amateurs, Inc. (CORA) is a not-for profit association of radio amateurs, founded for the promotion of interest in amateur radio communication and experimentation, for the advancement of the radio art and of the public welfare and operates to enhance the cooperation of member clubs in sponsoring activities of mutual interest to the clubs and all radio amateurs.

President	Chuck Wilhite	K5NK	721-4926
Vice President	Bob Graham	WB5NSV	677-8685
Secretary	Kay Northcutt	WD5DYJ	842-1086
Treasurer	Ron Recer	KE5M	751-5378

CLUBS PARTICIPATING IN CORA

1 AERONAUTICAL CENTER ARC MEETS: 8:00 PM First Friday each month Flight Standards Bldg. FAA Aero Center Pr WASCJG Bob Pace 376-3569 VP KSKDR Bill Oliver 329-6333 Se WASHSV Bob Graham 677-8685 Tr WBSAAY Larry Bugg 789-4180 Ed WB5NSV Bob Graham 677-8685	2 OKLAHOMA CENTRAL VHF CLUB MEETS: 8:00 PM Third Friday each month American Red Cross, 10th & Hudson OKC Pr K5VRL Jim Williams 789-0769 VP K5YAO Clarence Sittel 947-4015 Se K5JB Joe Buswell 732-0676 Tr K5KE Ellard Foster 789-6702 Ed K5JB Joe Buswell 732-0676	3 MID-OKLAHOMA REPEATER, Inc. MEETS: 8:00 PM First Tuesday of month Okla City EOC, 4600 N Eastern Pr KASCMX Fred Taylor 528-1537 VP WB6PMZ Bob White 681-2222 Se W5BEQ Jim Buswell 236-0308 Tr K5PER Jim Jones 634-5235 Ed W5NPK George Lee 946-2754 Dues: Sid Gerber, 829 Rouse HWC 73110
4 OKLA CITY AUTOPATCH ASSOCIATION MEETS: 7:30 PM 3rd Tuesday of month Okla Military Academy, 36th & Grand Pr WASCZN Doc Goodhead 721-8592 VP W5NK Chuck Wilhite 721-4926 Se WD5HXB Karen Recer 751-5378 Tr " " " " Ed K5NK Chuck Wilhite 721-4926	5 OKLAHOMA UNIVERSITY ARC MEETS: 8:00 PM (Sep-May) 2nd Tuesday Room 499, Carson Engineering Center Pr KASDHF James Gardner 321-8779 VP WB5QLF Alan Wormser 325-2194 Se KASCOI Peter Richeson 325-3015 DUES: KB5BF Nathan Kirby 364-7979 Ed KB5BF Nathan Kirby 364-7979	6 ALTUS AREA AMATEUR RADIO ASSOC. MEETS: 7:30 PM 2nd Thursday each month North Main Fire Station (CD) Altus Pr WASCBF Loren Simms 477-0921 VP " " " " S/T W5VXU Mike Schenkle 482-1797 Ed W5VXU Mike Schenkle 482-1797
7 BICENTENIAL ARC (THE 76'ERS) MEETS: 7:00 PM 2nd Tuesday each month Air National Guard, Hill Rogers Apt. Pr WD5BMP Joe Couch (Guthrie) 282-4353 VP WD5DYJ Kay Northcutt 842-1086 Se W5BEQ Jim Buswell 236-0308 Tr KP5E Tom Cassidy 751-1194 Ed KASFE Susie Atkinson	9 WHEATSTRAW AMATEUR RADIO CLUB MEETS: 2:30 PM First Sunday of month Location Varies. See club section Pr WB5JNT Ted Vanlangham 262-1675 VP AB5Z Ray Barnes S/T W5PFX Ralph Wilder 623-5421 Ed WB5NTH Virginia Beneda 825-3302	10 CHOCTAW AMATEUR RADIO CLUB MEETS: 7:00 PM 2nd Monday. Choctaw City Hall. Pr AB5H Frank Carter 391-3394 VP WD5EVP Bob Allen Se NSARV June Allen Tr KASALO R. G. Edwards 390-8297 Ed NSARV June Allen
11 EDMOND AMATEUR RADIO SOCIETY MEETS: 2:00 PM 3rd Sunday. Room 205 Science Bldg. Central State Univ. Pr WD5HXK Ken Stepp VP KB5RR Clarence Dollmeyer S/T W5ERY Allen Watson Ad WD5FHR Dee Hize Ed WD5IOB Howard Wise 341-2510	12 SHANNEE AMATEUR RADIO CLUB MEETS: 8:00 PM 2nd & 4th Tuesday Shawnee City Hall - EOC Pr WB5ONL John Owens 273-0848 VP WD5FUG Les Stewart 567-3895 S/T WB5TQZ Bill Warren 275-0119 Ed WD5BUQ Jay Tingle 273-3033	13 KAY COUNTY AMATEUR RADIO CLUB MEETS: 7:30 PM 3rd Thursday of month Security Bank Basement, Ponca City Pr WB5DOT Chuck Willis 765-5366 Pr W5ZMH C. L. Hallmark 762-8620 S/T W5TXF Jay Williams 765-9440 Ed WB5DOT Chuck Willis 765-5366
14 AMATEUR TV EXPERIMENTAL SOCIETY MEETS: 7:30 PM 2nd Thursday each month Central State Univ. Edmond Pr W5JGC James Buchanan 495-2777 VP WASHTL Paul Asplin (Bus) 521-2861 S/T NSANG Mike Woods 528-3699 Ed W5JGC James Buchanan 495-2777	15 SOUTH CANADIAN AMATEUR RADIO SOCIETY MEETS: 9:30 AM 3rd Saturday each month Red Cross Bldg. North Campus Norman Pr KB5DK Laverne Hoag 329-7625 VP NSABC John Stehr 364-8761 Se KASPM Linda Brandt 321-5081 Ed WB5TXZ Jack Dickham 329-1311	16 EDMOND AMATEUR RADIO CLUB MEETS: 7:45 PM First Monday of month General Electric, 3228 N Santa Fe OKC Pr K5GBF Harold Plunk VP W5BQX Bob Shaw S/T WB5UIY Stan Van Nort Ed WB5UIY Stan Van Nort
17 TRI-CITY AMATEUR RADIO CLUB MEETS: 7:30 PM First Monday of month. Location varies, see club section. Pr WB5TFX Ben Gard 379-3112 VP WB5VPM Carl Cash 257-2243 S/T KASFD Nancy Haydon 379-6448 Ed WB5TFY Pat Gard 379-3112	18 GREAT PLAINS AMATEUR RADIO CLUB MEETS: 7:30 PM 1st Tuesday each month Woodward Court House basement. Pr WB5OYT Rod Ford VP WD5DFH Bill Reid Se WD5DFG Donna Reid Tr KASFKV Gerald Bowman	19 NOTE: CORA meets the fourth Tuesday each month at American Red Cross 10th & Hudson (Back door) 7:30 PM ALL CLUBS should send 3 representatives to every meeting.



Red Cross. The Good Neighbor.

WHAT ABOUT HAM HOLIDAY?

"WHERE DOES THE MONEY GO?" During the hamfest, a committee meeting is held in which CORA pays all its bills, sets aside a pre-determined amount to get the ball rolling again next year, then takes the remainder of funds and purchases equipment for the drawing on Sunday afternoon. The Ham Holiday Committee is even amazed at the amount, value of, and quality of the equipment given away on Sunday. Ask anyone who's been to Ham Holiday before, and they will tell you there are more top-notch awards given per capita than anywhere around. There are continual surprises--it's phenomenal!

"HOW DO I REGISTER FOR HAM HOLIDAY?" The easiest and most advantageous way is to pre-register. You'll save a dollar on each registration and not have the long line to wait in. You'll get into the exhibit areas and programs earlier. And, perhaps the best advantage: each registrant will receive a separate entry for the special pre-registration award.

"WHERE ARE MY TICKETS WHEN I PRE-REGISTER?" They are held at the registration desk. During peak registration times, look for a separate "pre-registration" line. Pre-registrations are filed by individual callsigns, so be sure to give callsigns of every ham in your group. Unlicensed ladies' pre-registration materials will be in the packet with the OM. If you're waiting on your first callsign or just interested in amateur radio, give us the name you registered under.

Pre-registration packets include the personalized badge and your special pre-registration ticket, which is to be placed by you in a pre-registration ticket drum. This way, you know you're entered. Then, you're finished--at about one-half to one-fourth the time it would take you in the regular registration line!

"WHAT IS THE PURPOSE OF MY REGISTRATION BADGE, AND DO I HAVE TO WEAR IT?" The reasons for registration badges are various. Mainly, they indicate your participation as our guests at HAM HOLIDAY. Each badge has name and call to help in your many eyeball QSO's. You must wear your badge in plain sight in order to be admitted to the commercial and flea market exhibit areas, as well as into all the programs. Most important of all, your badge is your entry for the Sunday drawing. We will draw the actual badge from the drum to determine winners.

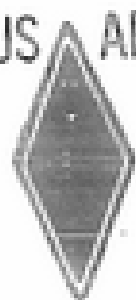
"DOES MY YL NEED TO REGISTER?" Yes, for admission to Ladies' programs and all other areas. Of course, the YL's registration doubles a chance of doing well Sunday at the drawing, and there will be special ladies' drawings as in the past. Great programs are in store for the ladies, too.

"I DON'T NEED TO REGISTER. I'M JUST INTERESTED IN THE FLEA MARKET AND THE DEALERS. I'LL DROP BY FOR A FEW MINUTES AND GO ON HOME." Wrong. Registration will be required to enter these areas. Use of Lindoln Plaza, particularly these areas, costs big bucks. CORA cannot feasibly provide a free meeting place at its own expense. Our facilities costs have DOUBLED since last year, and an even larger percentage of your registration fee goes toward these expenses. It is not fair for a majority to pay for even a few who wish to take advantage of what has been worked so hard for. Badges will be checked at the door.

"HOW DO I GET A FREE FLEA MARKET TABLE?" Pre-registration forms include a reservation box to check for one table per registration. If this is done, there will be a table with your callsign (or name) on it, waiting for you Saturday morning at 7 a.m., when the doors open for the flea market set-up period. Doors open to registered guests at 8 a.m., so avoid the pandemonium and arrive early for set-up if you've reserved a table. Where humanly possible, (but not guaranteed) we will locate your reserved table near a buddy's, if you make a note on the pre-registration form. If you and a friend have only a few items and can share a table, please try to do so. This gives more people chances for tables. Also, remember, if you don't claim your table by 10 a.m., it will be given away to one of those folks who invariably doesn't reserve a table, bringing a semi-trailer full of widgets, expecting a table out of the blue when he arrives. PLEASE, PLEASE RESERVE TABLES!!

"IS THE FLEA MARKET HELD ON SATURDAY ONLY?" Yes, but it will be held from 8 a.m. 'til 8 p.m. giving everybody plenty of time to grab the goodies and stalk that tremendous deal you saw earlier. On Sunday, the flea market area will be the site of the Sunday banquet, followed by the tremendous Sunday drawing. We're getting double duty on the room this way, saving more money to put toward the drawing.

continued next page



The June meeting of the Altus Area Amateur Radio Association was held on the 12th at 7:30PM at the North Main Fire Station meeting room.

In attendance were WB5CBF, WB5MJF, WB5KRH, N5AIP, WA5OGC and Ruth, WB5LTU, WA5ZFI, WA5WIC, KB5LS, W5KI, WB5NRQ, WD5ISO, ED5DTX, W5TQR, WA5MCR, WA5MCS, WA4RCS and harmonic, W3TDV, XYL and harmonic and W5VXU.

The financial report was given by Mike, W5VXU, showing the Club has something over \$273.00 in the bank. We took in \$10.00 and spent \$17.00 for CORA C&E dues.

Don, WB5NRQ, spoke on the importance of the initial wind-shield survey conducted immediately after a disaster takes place. He strongly emphasized that amateurs can be extremely useful in conducting this survey of damages which is usually the first indication of just how massive a disaster may have been.

Dwight, WB5KRH, gave a brief description on the damages around the Altus area after our most recent troubles and showed a copy of the KWTN Ch-9 news film where one of their news crews filmed as many as three funnels just off the ground as they crossed over the City of Altus. This film was provided through the courtesy of the Channel 9 News Department who made it available for our group to be able to see it almost first hand.

Bob, N5AIP, then explained to the group that Field Day, as it had been planned would not work since commercial power is a NO-NO. He indicated that several of the amateurs would hold FD at Jerry's place near Tipton, just like last year and all comers were welcome to participate. The original plans called for this event to be played in the Altus City Park this year, but due to the power problems, it was decided to change that, almost at the last moment.

The floor was then turned over to Tom, WA4RCS, who outlined plans now being formulated to reactivate the Altus Air Force Base MARS Station. He indicated that the Base MARS Director was in favor of this action and that in the near future a meeting would be solicited with higher base authorities. For the time being, he indicated, it would be necessary to determine just how much support could be expected from local area amateurs. Tom mentioned that the station would most likely operate a couple of hours each of 2 or 3 days per week depending on the number of trained communicators available and that with additional manning being trained, it might be possible to expand that operation in the future. There appeared to be only limited enthusiasm among the amateurs present.

The main show for the evening was an ARRL film entitled "The New World of Amateur Radio". After the showing most of the members present indicated this was probably the best amateur film they had seen.

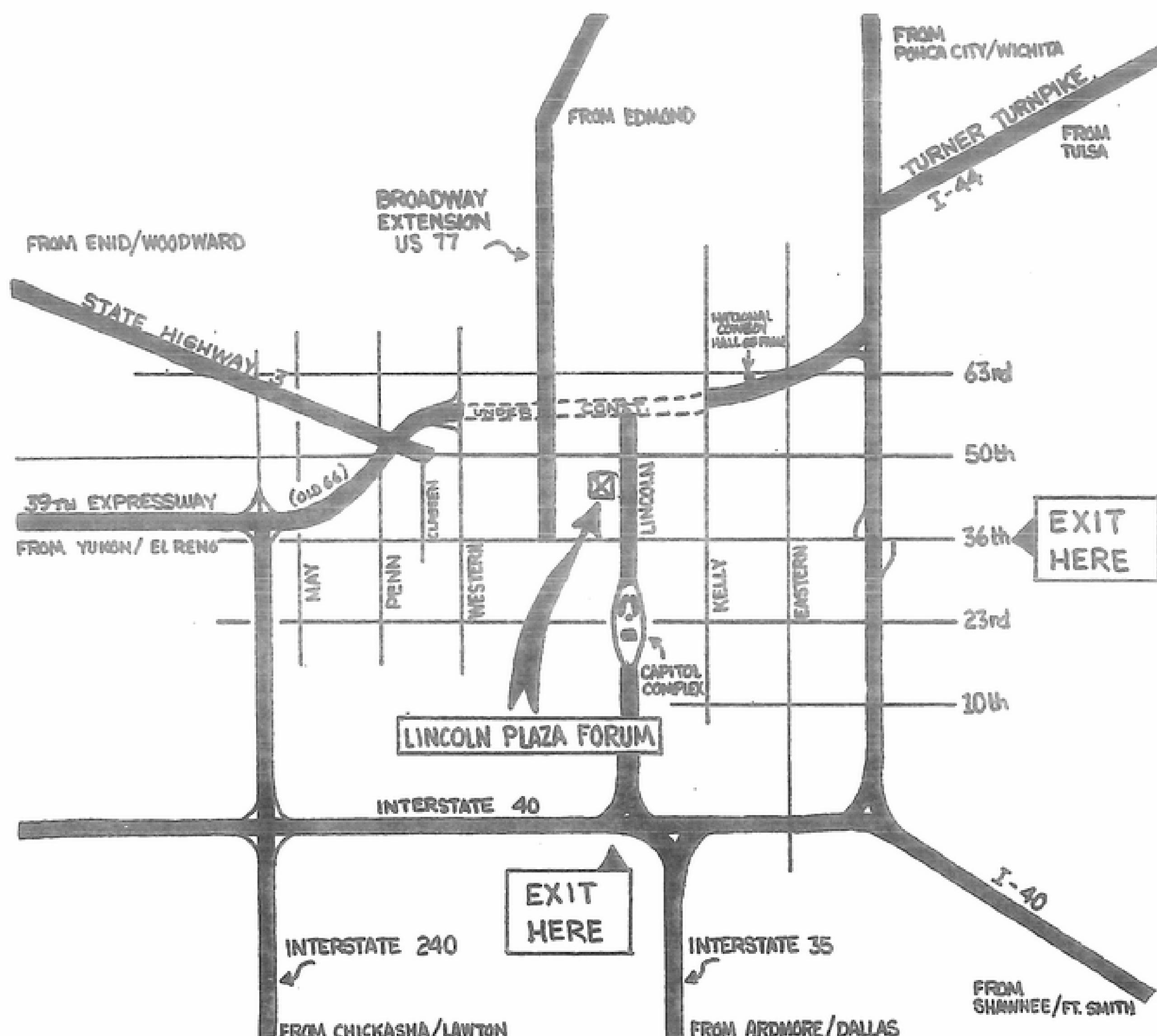
The meeting adjourned around 9:30PM with a call from our President for the next meeting to be held July 10th at the same place and time and encouraging everyone to be there and bring someone else.

Ham Holiday, continued

"WHAT IF I CAN'T BE THERE SUNDAY FOR THE DRAWING?" Don't worry. If you must leave the fun early, make sure to drop your badge in the drawing drum (located at the registration table during open hours) as the last thing you do before leaving. If the registration desk is closed, leave your badge with a friend to drop in the drum. In any case, you will be eligible for all the Sunday drawing items as if you were there.

"OK, IF I DO WIN SOMETHING, HOW DO I KNOW?" Hopefully, you'll tell one of your friends to "stand in" for you Sunday for the drawing. We'll ask your "proxy" to sign for your award for your protection, thereby assuring the item will go to the real winner. If you can't locate someone to do this for you, CORA will notify you direct to make arrangements for delivery of the award to you (at your expense).

Central Oklahoma Radio Amateurs is comprised of people just like you. We know times have been better, gas has been cheaper, and more and more trips have to be carefully weighed against the pocketbook. But we think Ham Holiday may be one of the most fulfilling weekends of the year. We want you to come, enjoy, and be a real part of Oklahoma's growing amateur population.



HOW DO YOU GET TO HAM HOLIDAY?

The two best ways in.

wd5dyi

GOODIES FROM "AMATEUR RADIO"

When you're in the ACARC clubroom, take a look at the February issue. There're articles on the Kenwood R1000 receiver, an easily-made antenna-matcher, and an 80-meter vertical that can be used on other bands too. The March issue shows how to add slow-range tuning to the FRG-7 by using a varactor. Also, it has info on an unusual five-band VXO.

W5JJ

ESTATE SALE: From WB5WLS, Fred Miller (Silent Key). Signal Generator EICO 330, Heath VTVM, Rotors (3), Swan SWR-1, Heath HA-202 amp., Knight transmitter T-175, Yaesu FT-620B, ICOM IC-230, coaxial switches, 50 ft. tower. Lots more. Call Mrs. Miller, 737-5387.

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P.O. Box 7222 / Okla. City, Ok. 73147

Editor: Stan Van Nort WB5UIY

MINUTES

The last meeting was another social dinner held at Crockett's Barbeque, S.E. 15th & Air Depot, on June 2. The secretary here was unable to attend, but I understand that 30 or more people showed up and the food was great. I can say that the barbeque sandwiches are real good as Dennis, WB5ISN, picked one up for me and delivered it to my place of employment. The BBQ arrangements were made by Larry Dillard, WB5CWB, who definitely has good taste. A mix-up occurred and the pool party that was announced at the May meeting was canceled. We would like to give a big THANKS to Larry for making the arrangements on a short notice.

FOURTH OF JULY PARADE

The secretary here will be needing volunteers again to help in the staging area in downtown OKC to assemble the Fourth of July Parade. The Parade will be Friday, July 4, at 10:00AM. Helpers will be needed at 8:00AM at Colcord & Walker next to the Civic Center Park. Please bring your Walkie-Talkie and some good Tennis Shoes. Cold water will be provided. The Parade should be over by 11:30AM. Contact Stan, WB5UIY, if you can be of assistance, however, most everyone will have been called by the time the paper is mailed.

NEXT MEETING

The next meeting will be a business meeting on July 7, 1980 at 7:30PM. It will be at the T.G.&Y. main office at 3815 N. Sante Fe. Come in through the door on the N.E. corner of the main building and into the cafeteria. The next meeting will be important, as we will probably have a vote on whether to go ahead and put up the new repeater or scrap it. Please mark it down on your calendar.

HAM HOLIDAY

Ham Holiday will be July 25-27. Your yearly dues helps in part to fund CORA which in turn puts on the annual event. Be sure and pre-register, you might get a chance to win an ICOM 260.

REPEATER UPDATE

The 63-03 machine is now being operated thru a UHF link. In the past we used a special phone line from the receiver site to the transmitter located on Channel Five's TV tower. Thanks to Dennis, WB5ISN, a UHF link is now being used. This will save the club \$8.94 a month in phone bills. The equipment being used belongs to Dennis so the club may have to make arrangements with him to purchase or lease. This will be discussed also at the next meeting. Also because of the new link, the repeater has a very short squelch tail and sometimes you can't hear it, but believe me it is working. The club treasury is in real good standing at this time and if any members have a suggestion for improving either repeater, now would be a choice time to spend the money for improvements.

OTHER BS

Your sec/treas. here is in the process of moving again. Seems like he is a walking hard luck story when it comes to buying houses. The current house deal fell through and he is moving into an apartment. Some paperwork may get behind again, so be sure and check on your own if your club dues is owed. (Always available to accept money)

Mike Salem, N5MS, will probably have a report on the Dallas HamCom on another page, so for all the members that missed it, you might check out his article.

Howard Thompson, W5UVI, might note that he is the only one left that has not gotten his Love Country Store Hat. There is most likely a good reason for this Howard... but ask Larry Dillard. STAN WB5UIY

Submitted by STAN WB5UIY (alias 141)

July 1980

HAM HOLIDAY PROGRAM 1980

<u>WHEN</u>	<u>WHAT</u>	<u>WHERE</u>
<u>FRIDAY</u>		
7:00 P.M.	Q.L.F. Contest, K5NK 1st Prize 2nd Prize	Congress Room
8:00 P.M.	Intermod Party, WD5JNT & WA5FLT 1st Prize 2nd Prize	Congress Room
<u>SATURDAY</u>		
9:00 A.M.	Air Force Mars S.M.I.R.K., W5NZS	Congress Room Cherokee Room
10:00 A.M.	State-Wide A.R.E.S., WA5MLT & KB5BS	Congress Room
11:00 A.M.	C.O.R.A. Meeting, K5NK	Congress Room
12:00 NOON	LUNCH	
1:00 P.M.	Oklahoma Repeater Society, K5FVL	Congress Room
2:00 P.M.	Biological Effects of Non-Ionizing Radiation Ray Wangler, W5EDZ Dale Clift, WA3NLO	Congress Room
3:00 P.M.	Computerized Police Radio Dispatch Systems A Tour of the U.S., SGT. Lucien Jones O.C.P.D.	Congress Room
4:00 P.M.	ARRL Forum: Your League in Action Ray Wangler, W5EDZ, West Gult Director Tom Comstock, N5TC, Vice Director Dale Clift, WA3NLO, Membership Services	Congress Room
5:00 P.M.	Dinner	
7:30 P.M.	Fast Scan Television: How to Get Started W5JGC	Congress Room
8:30 P.M.	Tektronix Spectrum Analyzer Mike Riley, FDI Specialist	Congress Room
9:30 P.M.	Night Owl Net	Congress Room
12:00 P.M.	Wouff Hong Initiation, WA5HTL	Senate Room
<u>SUNDAY</u>		
7:30 A.M.	Q.C.W.A. Breakfast, W5HXL	Cherokee Room
9:30 A.M.	Transmitter Hunt, K2GKK 1st Prize 2nd Prize 10 Days at PJ8, WB5TZZ & W5NUT W5 QSL Bureau, W5IO	Outside Congress Room
NOON	Banquet & Prize Drawing	Exhibition Hall
CORA Collector & Imitter		

HAM HOLIDAY 1980

LADIES PROGRAM

Saturday, July 26, 1980

7:30 a.m. until 8:45 a.m. - Ladies coffee

9:15 a.m. until 10:15 a.m. - Fashion Show. This program will be presented by Stretch & Sew Fabrics, 4722 S. E. 29th Street.

11:00 a.m. until Noon - Microwave Cooking. This program will be presented by Shingleton's Appliance Company, 1217 S. E. 44th.

Noon until 1:15 p.m. - Open Lunch

1:30 p.m. until 2:30 p.m. - Growing Houseplants. This program will be presented by Ms Mary Ann Haliburton, Assistant Professor of Horticulture at OSU Technical Institute.

3:00 p.m. until 5:30 p.m. - Ladies Bingo. Our caller will be Holly Holcomb.

COME ON OUT FOR A GOOD TIME!!

After supper, the Ladies Hospitality Room will be open for your enjoyment.

Sunday, July 27, 1980

9:00 a.m. until 11:00 a.m. - Ladies Bingo

HOPPING AT HAMCOM (OR DOWNHOME IN DALLAS)

How many of you went down to Dallas for HamCom this month? Let's see, um, wow, that many! Well, I thought that I saw a lot of you there. This Dallas weekend (ham style) has become a regular event for this part of the country. The facilities are nice and the flea market has a certain mark of quality. I talked to Joe K5JB about making a trip to Big D and we planned to zap down Saturday morning and come back before dark. We lined up a couple of people to see, like Jim WB5YWO, who had cleverly disguised HamCom as a wedding anniversary trip for his unsuspecting wife. Hoo boy, now that's a neat trick. Actually, I understand from Jim that she enjoyed the trip and wouldn't leave on Sunday until she had made one more trip through the flea market and even has designs on traveling to Dayton next year! I tell you folks, we may have a budding enthusiast!

The plan was, weather permitting, K5JB would meet me at the Norman Westheimer World International Airport (uncontrolled) at the bright (him) and early (for me) time of 6:30 a.m. For many years, I thought that 6:30 only came once a day. It had been awhile since I realized that convention dictated two of these events daily. I hauled out of bed at 5:30 a.m. and organized sufficiently to make it on time. JB was running late due to unforeseen circumstances (mud in the hanger). The weather was fine and the flight was a milk run. I've had several people ask me why I choose to fly since it is so expensive. Actually, the cost is a little less than a motel room for two nights plus meals and incidental expense, plus you can make the sights in just one day and be back home in slightly over an hour. The trip is entertaining at 6,000 feet.

JB and I took a cab from Love Field (I wanted to hang around and see if we could catch a glimpse of some of the Southwest Airlines Hot Panted stewardesses. JB wanted to get out to the hamfest. Hurrump!) The cab driver put down the mike of his CB radio and "high power leanyer" to ask us where we were going with radios sticking out of every pocket. "Hey, baby, I was interested in that once." Another lost soul. We disembarked, looked up WB5YWO, and hit the flea market.

Not bad. Actually, a little better than the usual Saturday sidewalk sale. But that's still pretty good. The presence of Collins and TI, plus some other semi-exotic electronics manufacturers generally means that the quality of the surplus is pretty good and pretty exotic. However, I am suspicious of anyone who sells brand new microprocessors and other LSI chips out of a black suitcase. I spent a few dollars and then wandered over to visit with Ellard, W5KE, at his booth, then took a spin through the commercial exhibits. JB called with a Bulletin that Bullet Electronics had a host of nifty electronic goodies and a saleslady with a very low cut dress. I definitely wanted to check out these claims. Strange, looks like the same stuff as they had a Dayton, but I don't remember this selection. Definitely lots of goodies. I made my selections very carefully.

Around Three O'Clock or so, JB, Jim and I wandered over to the North Park Mall to eat. If I had only known that "Empire Strikes Back" was playing at one of the theatres, I would have saved myself a week and a half of fret and worry before it finally opened in Oklahoma (Saw it first day, second show, absolutely great!!) We went back for the last hour of Saturday's hamfest, then rendezvoused with W5UVI, WB5DUC and all the appropriate YL's and navigated to Southern Kitchen for a great dinner. Between the El Feenix at North Park and the Southern Kitchen affair, this could be the first hamfest I spent more on food than on electronics. I refused dessert and Jim took us back to Love Field and JB and I got back with just a slight tail wind a little after 10:30 p.m., just in time to watch Saturday Night Live. Ham Holiday is next!! Bring it on!! Hey, you guys, why don't you invite Bullet Electronics up here!

Micheal Salem N5MS

QUICK, INEXPENSIVE, (BUT NOT DIRTY) RF AMPLIFIERS
MOTOROLA GAIN BLOCK (CHIP OFF THE OLD. . .) DEPARTMENT

I have always wanted to build a pair of boots for my UHF HT, but never really got the time or guts to sit down with a data sheet for one of those RF amplifiers and a Smith Chart. Actually, now, Motorola has my number. RF Power Amps for the HT have never been easier and it doesn't take a Smith Chart.

I first found out about the Motorola Gain Block series a couple of years ago while looking through a Mocom 35 Service Manual. I had acquired a couple of these nifty Motorola radios at an auction. The output power was 10 watts and I peaked inside. I saw a single blue monolithic device that appeared to be the output stage. I eventually got a data sheet for the device and found out that Motorola sold them for about \$45.00. At Dayton, one year, I found out that they also made a VHF version and I bought one of the UHF 10 watt output versions from Science Workshop. This past year, I bought three more for about \$20.00 apiece from some guy in the flea market. K5JB was with me and also expressed interest and bought a couple. These goodies are really nice. For example, the UHF version takes about 70 - 150 milliwatts and puts out between 5 to 15 watts. One very popular version of the amplifier is used for ATV to punch out a 10 watt signal. The amplifier is not very linear, but if you throttle it back to about 10 watts, It doesn't do badly. It cannot be fully modulated since the output goes away below 70 milliwatts output. This is probably intended to prevent oscillation under no signal input conditions. Necessary when dealing with power gains in a single blue block of 20 db or so minimum.

The Motorola RF Gain Block family included amplifiers for VHF and UHF and this past year, they added various amplifiers for the 806-870 Mhz band. The family includes, but is not limited to the following models:

<u>MODEL</u>	<u>BANDWIDTH</u>	<u>INPUT POWER</u>	<u>OUTPUT POWER</u>
MHW602	146-174 Mhz.	10-150 Mw.	2.5 - 23 Watts
MHW252	146-148 Mhz.	300 Mw.	25 Watts
MHW710-1	400-440 Mhz.	65-160 Mw.	5.0 - 20 Watts
MHW710-2	440-470 Mhz.	70-160 Mw.	5.0 - 15 Watts
MHW720-1	400-440 Mhz.	40-105 Mw.	5.0 - 20 Watts
MHW720-2	440-470 Mhz.	50-125 Mw.	5.0 - 20 Watts
MHW820	806-870 Mhz.	100-250 Mw.	0.0 - 23 Watts

These amplifiers sport various gains in the 19-21 db range with typical efficiencies of 30 to 35%. Harmonic content is generally -30 to -40 db. I have not had the opportunity to experiment with the difference between the MHW710-1 and MHW710-2, but I have been told that they are interchangeable for all practical purposes on the 440-450 Mhz amateur band. All of the gain blocks that I bought are of the high split version.

The first ones out of the chute were the 602 and 710. Motorola added the MHW252 especially for the amateur service. You might check your favorite 25 watt synthesized two meter rig and you'll probably find a MHW252 guarding the output. The MHW720 is also new. I suspect that many of the ATVers' will slap one into service to provide a new 20 watt output for ATV. Just eyeballing the input power versus power output curves indicates that they may be a little more linear than the 710. Of course, they are ideal for FM.

In Figure 1, I detail the UHF version of the amplifier. The circuit is really quite simple. Z1 and Z2 are nothing more than 50 ohm microstrip line. I detail two versions of printed circuit card. Unfortunately, I can't give you any real information regarding the enlargement necessary to shoot the board

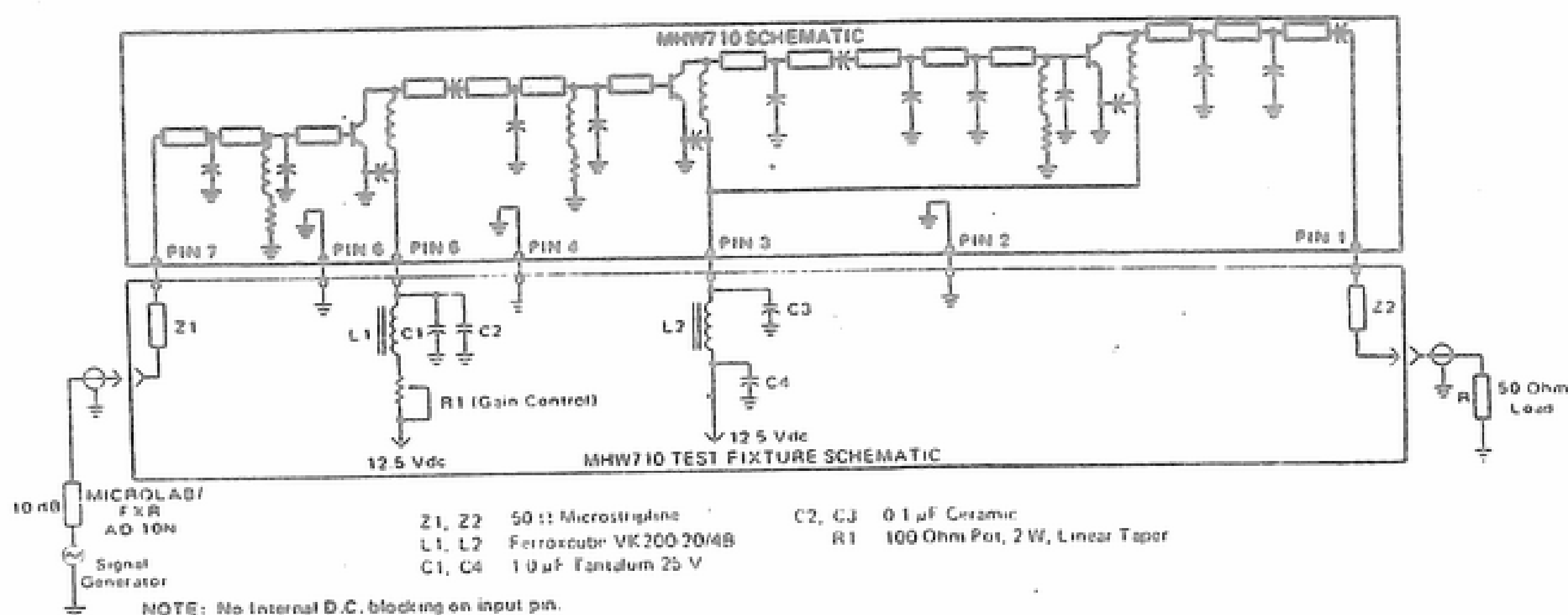


Figure 1. UHF Power Module Test Setup.

to proper size other than to say that the distance between pin 1 and pin 7 is 1.8 inches. You may want to relay the PC card. The smaller version of the card is designed to fit on a standard type heat sink, so that is why the layout is just a little tight. The inductors L1 and L2 are Ferroxcube VK200-20/48 ferrite beads with 2 1/2 turns through them to suppress spurious outputs below 5 Mhz at certain operating frequencies and certain phase angles of input and output VSWR less than 3:1. I bought a couple of them from Communications Concept, Inc., 2648 North Aragon Avenue, Kettering, Ohio 45420, but apparently, they were very proud of the time and difficulty it took to wind 2 1/2 turns. The cost was \$1.25 per coil. There has been some indication in the Motorola literature that if you use 4 or 5 ferrite beads, with a couple of turns of wire through them that you can be home free.

Notice the R1 Gain Control. This means that power output can be adjusted compared to the Bird wattmeter. Motorola says that this is not the preferred method of power control. They apparently would rather that you put 12 volts on pin 5 and remove the volume control. Then it will look as if the output is controlled by the input power.

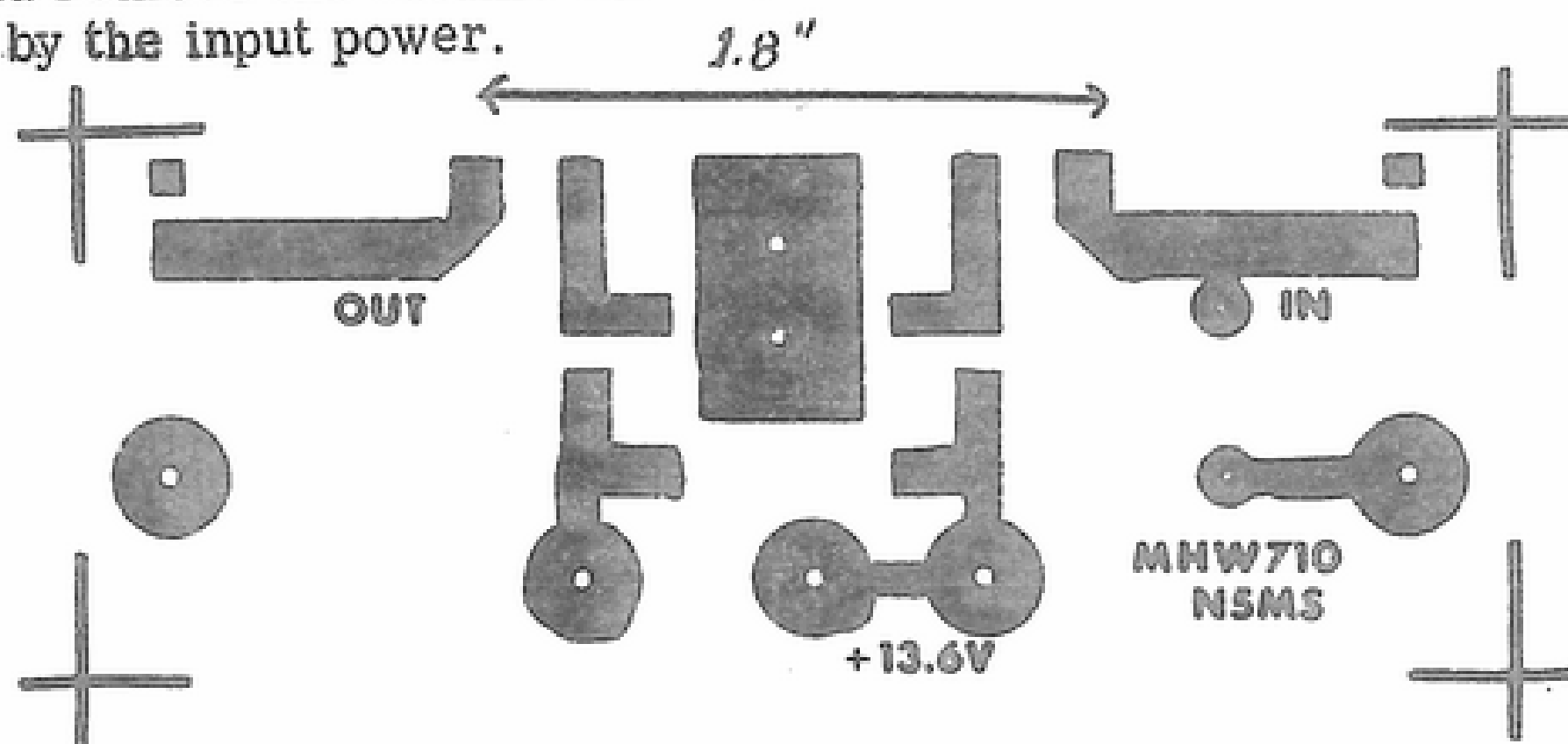


Figure 2. PC Card layout for MHW 710. This layout will also fit the MHW602 VHF module. It doesn't fit the others because the package is different. I have not laid out a card for the 800 Mhz gain blocks. This module PC card will also work for the MHW720 gain block.

I have seen some versions of this amplifier circuit that uses a 270 ohm, 1/4 watt resistor across the input (pin 7) that contributes to stability. You may want to use larger capacitors for some of the bypassing depending upon the length of your power leads. Don't use extremely large values of aluminum electrolytics for the bypassing. The lead inductance might be substantial. Use ceramics and tantalum. For about 10 watts output, or so, use a 10 ohm 1/2 watt resistor for R1.

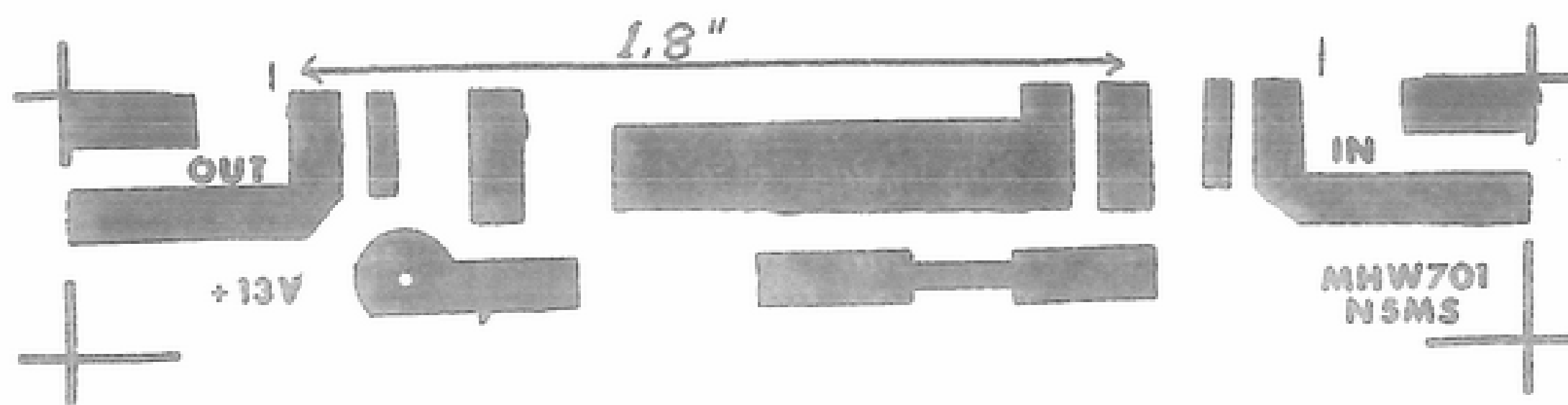


Figure 3. PC Layout for "Channel" type heat sink. Parts will be pretty tight for space, with a little judicious work, you should be able to fit them in.

The VHF version contains a couple more bypass capacitors. The following is the basic circuit for the MHW602 and MHW252 VHF modules:

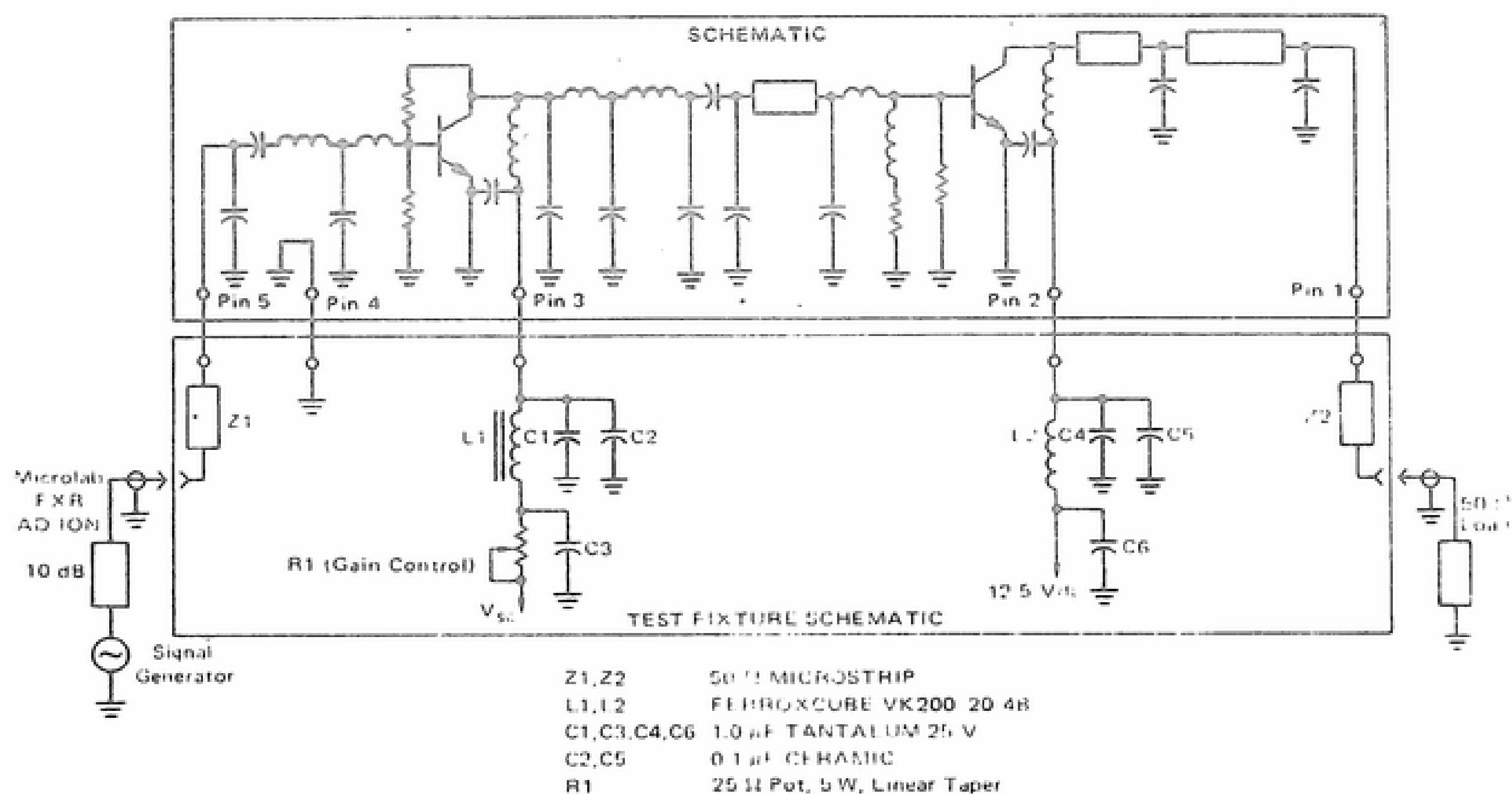


Figure 4. VHF Module Test setup. Gain Blocks MHW602 and MHW252. Please notice that the pins are numbered differently for the VHF version.

If you plan on using some type of relay to switch between transmit and receive, you may need a stub or particular length of cable to stabilize the amplifier, although this is generally not a problem. It wouldn't hurt to put a diode reverse the DC power lead to blow any fuses that might stand between you and destruction of your \$2.50 module.

Don't forget to adequately heat sink the amplifier. These babies can get pretty warm under normal conditions and if you intend to use one in some type of continuous commercial type service such as a repeater, remember to invest heavily in a large enough heat sink. Incidentally, you may notice that the power drops slightly as the module heats up. This is very normal. All the modules are very rugged and tested with V_S and V_{SC} equal to 15.5 volts, VSWR of infinite, and output power at maximum. However, there is a limit to even what one of these devices can take and I have heard stories that an amplifier self-destructed in 2 minutes under conditions of 3/4 watts drive and no output on the amplifier.

If you have a desire to put one of these modules into a VHF amplifier for the handheld, follow this schematic from a Motorola Ap Note and you can't go wrong:

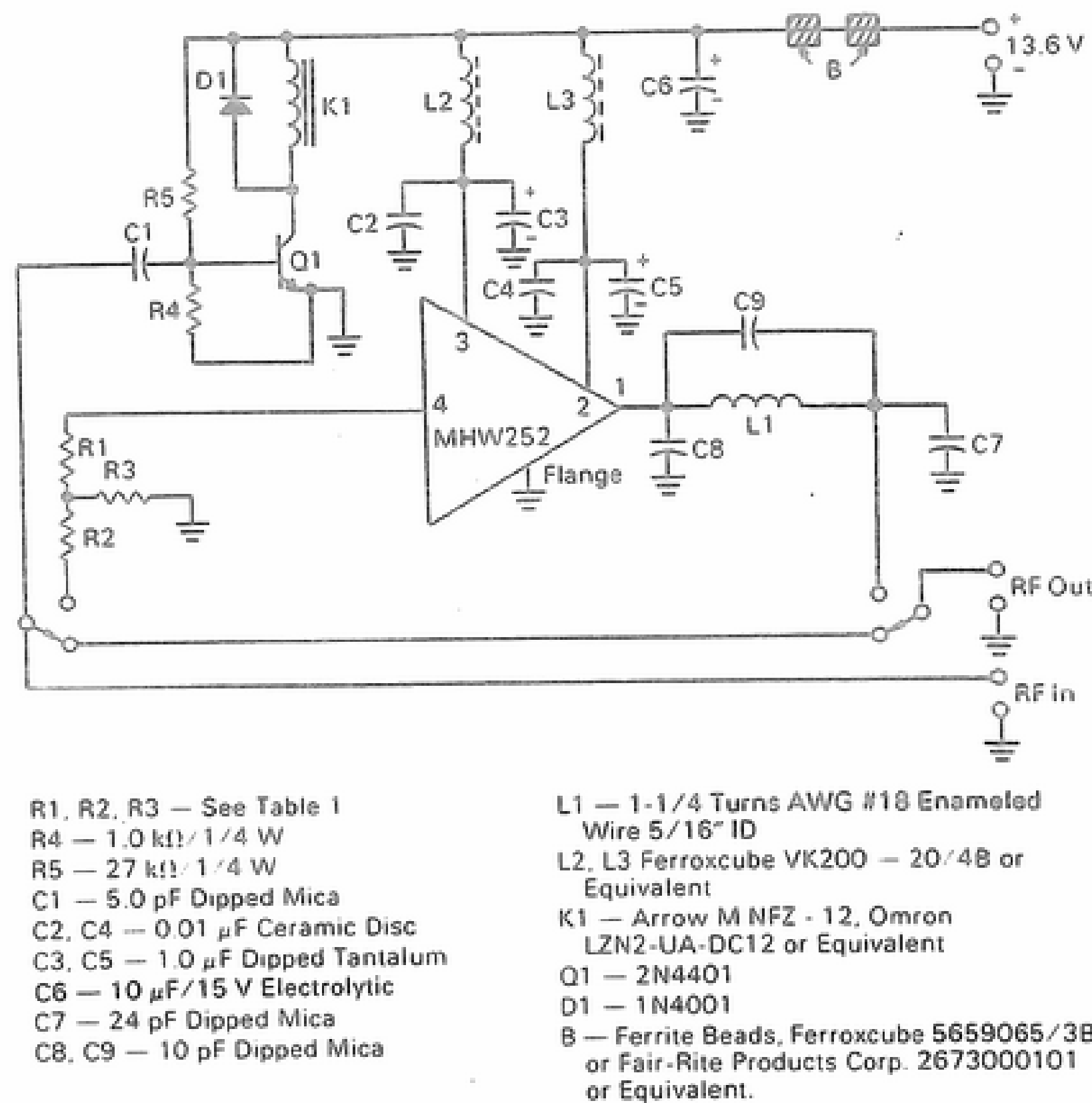


Figure 5. PTT circuitry for MHW252 gain block. Takes your HT signal and pours out 25 watts of goo. The carrier operated relay is just a simple transistor amplifier and detector driving a relay. R1 through R3 is a simple attenuator which must be selected on the basis of the power input. Consult Figure 6 for the proper value.

TABLE 1				
Power Input (Watts)	Power Ratio	Attenuation dB	R1, R2 (Ohms)	R3 (Ohms)
0.20	1.0	0	Short	Open
0.50	2.5	4	11	100
0.80	4.0	6	16	68
1.00	5.0	7	20	56
1.50	7.5	9	24	39
2.00	10.0	10	27	36
2.50	12.5	11	30	30
3.00	15.0	12	30	27
4.00	20.0	13	33	24
5.00	25.0	14	36	22

Attenuator resistor values are rounded to the nearest standard value.
(R1 -R2 = 1 to 2 W Carbon, R3 = 1/2 W Carbon.)

PCB, Hybrid Modules, other components including ferrite beads are available from: COMMUNICATIONS CONCEPTS, 2648 N. Aragon Ave., Kettering, Ohio 45420. Telephone: (513) 294-8425.

Figure 6. Table of resistors for R1, R2, and R3 based upon the amplifier input and the necessary attenuation to knock down the power of the incoming signal before applying it to the amplifier.

You can use single sided glass epoxy board. There is always a possibility that the fact that there is no continuous ground plane will knock the power down a little, but there should be plenty of gain.

OK, OK! So you might be sold already. Still would like to have a PC card layout, right? Right. So here it is. The figure on the right is a complete PC layout. you may need to relay it out. The parts placement is shown at the right:

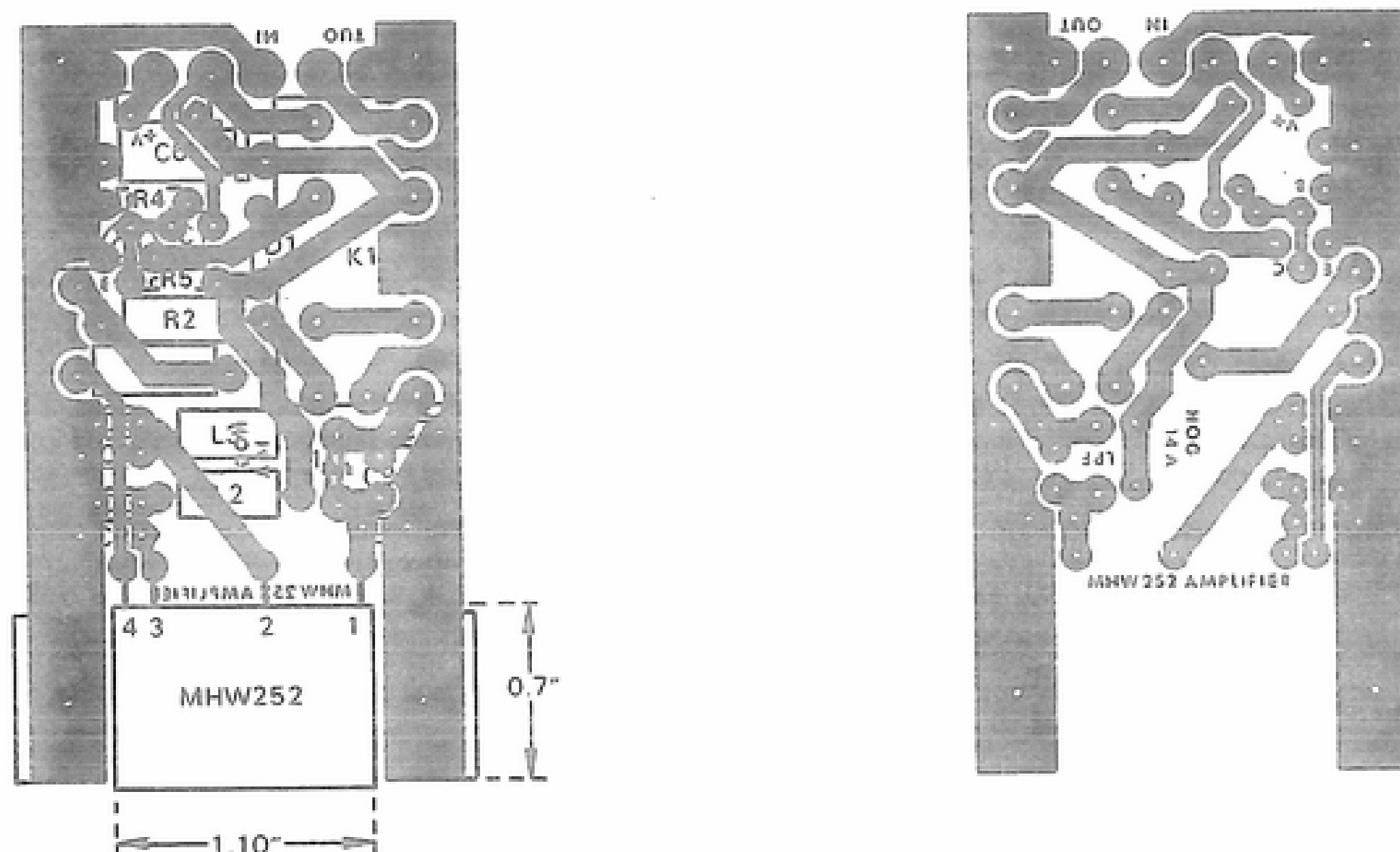


Figure 7. PC layout and parts placement for MHW252 amplifier for HT use.

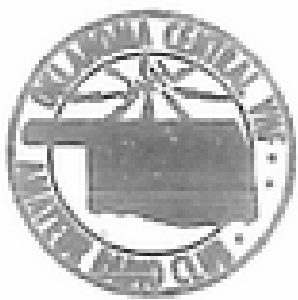
If you are really serious about building any of the circuits mentioned herein, I suggest that you write Motorola Semiconductors, P. O. Box 20912, Phoenix, Arizona 85036 for all the necessary and pertinent data sheets.

How do you connect up to the amplifier boards to bring the power out and run the goo in? Each of the gain blocks are constructed with a metal substrate (also at ground potential) with two mounting holes on either side. This also makes contact with the heat sink. K5JB devised a nifty method of mounting a BNC connector off each end of the PC card for the MHW710 by bringing a stiff piece of brass off of the hole on the heat tab and over to the connector. It might be easier to visualize the circuit by putting a BNC connector on the PC layout. Joe cut input and output microstripline and soldered the ground of the connector to the piece of stripline nearest the edge. It is also possible to just solder the ends of a coaxial cable to the microstripline if you need to use a relay for switching.

Remember that the input and output lines are microstripline and that it will be necessary to use double sided board and leave the bottom or opposite side of the PC board unetched. If there is any interest, we can get up a couple of pictures to show the installation.

What do you drive the amplifiers with? Well, the 252 can be driven by your HT provided that you use the input attenuator shown. I am using a General Electric UHF Exciter made for the Master II Radio series. These are capable of about 250 milliwatts output at the UHF frequency and work extremely well. The output also appears to be fairly clean. It is also possible to use HT-200 transmitters, but it then become necessary to build two separate power supplies because the HT-200 is a positive ground radio and the MHW is negative ground. The suggestion for using the GE Master Exciter came from Dwight Dennis WB5KRH from Altus. I found a couple of the Master Exec Exciters at Dayton this year (these are almost identical to the Master II, I also found some Master II's and bought one of those) and brought them home. These devices make excellent links. You could also use VHF Engineering's UHF transmitter, but I have my doubts as to spectral purity. Hamtronics also has a UHF transmitter that could work.

Micheal Salem N5MS



Club
NEWS

US109
The Silver State Ham Club
Reno, NV

EDITOR: Joe Buswell, K5JB 732-0676

MINUTES FOR THE JUNE MEETING

...WILL APPEAR IN THE JULY MEETING, IF AT ALL. REGARDLESS OF WHAT WAS ON LAST MONTH'S C&E CALENDAR, THE CLUB MEETING WAS SLIPPED ONE WEEK TO COOPERATE WITH FIELD DAY. THIS WILL BE ALL PASTED UP AND PRINTED BEFORE THE MEETING. IT IS DOUBTFUL THAT A BUSINESS MEETING WILL BE CONDUCTED, BUT, WHATEVER HAPPENS WILL BE DUTIFULLY REPORTED IN NEXT MONTH'S C&E. JOE, K5JB, SEC'Y

GARAGE SALE/ESTATE SALE

NORMA HOGAN, WAYNE, WASA0B'S YL, HAS REQUESTED SOME HELP IN DISTRIBUTING WAYNE'S COLLECTION OF HOME BREW RAW MATERIALS AND TEST EQUIPMENT. THERE IS STILL QUITE A COLLECTION OF PARTS AND THINGS THAT NEED TO GO INTO SOME OTHER AMATEUR'S "JUNQUE BOX". ALSO, THERE IS A FOLD OVER, CRANK UP TOWER, AND ANTENNAS TO BE SOLD. THE PLAN IS FOR N5MS, MYSELF AND SOME OTHER SCROUNGERS TO DRAG THE STUFF OUT OF THE GARAGE AND SELL IT. THERE WILL BE BARGAINS GALORE, PARTICULARLY RF STUFF AND VACUUM TUBE RELATED PARTS. THE SALE WILL BE ON SATURDAY, JULY 19, BETWEEN 9:30 AM AND NOON. WE WILL ATTEMPT TO SELL EVERYTHING AND IT WILL BE IN TIME TO STOCK SEVERAL FLEA MARKET TABLES AT HAM HOLIDAY.

NORMA LIVES AT 113 E MORNINGSIDE DRIVE IN MIDWEST CITY. TO GET THERE PRETEND MORNINGSIDE DRIVE IS EAST RENO. NORMA'S HOUSE IS JUST A LITTLE BIT EAST OF BELLA VISTA WHICH IS A HALF MILE EAST OF AIR DEPOT. IT IS LOCATED ON THE NORTH SIDE OF RENO. CALL ME IF THERE ARE ANY QUESTIONS. JOE, K5JB

SOME THOUGHTS ON REGULATED POWER SUPPLIES

POWER SUPPLIES ARE PROBABLY ABOUT THE MOST OFTEN HOME CONSTRUCTED GADGET IN THE AMATEUR'S SHACK. WITH THE PREPONDERANCE OF SOLID STATE RIGS TODAY, THE TWELVE VOLT POWER SUPPLY IS BECOMING THE MOST COMMON, REPLACING THE MULTI-VOLTAGE SUPPLIES USED FOR VACUUM TUBE RIGS. SINCE MY MOST RECENT HOME BREW EXPERIENCE WAS WORKING UP A SUPPLY FOR A FM RIG, I THOUGHT IT MIGHT BE OF SOME INTEREST IF I RAN THROUGH SOME OF THE DESIGN CONSIDERATIONS FOR A REGULATED SUPPLY AND EXPLAINED HOW IT WAS DONE WITHOUT GOING INTO THE HEAVY ENGINEERING BACKGROUND. MUCH OF THE ACTUAL WORK IS CUT AND TRY.

I ALREADY HAD SUPPLIES WHICH WOULD HANDLE CURRENTS UP TO ABOUT 1 1/2 AMPS, TEN AMPS AND HUNDREDS OF AMPS...AHM, THE CAR BATTERY...BUT I NEEDED A SOMEWHAT COMPACT SUPPLY THAT WOULD YIELD ABOUT 3 1/2 CLEAN AMPS AT 12.6 TO 13.8 VOLTS, OR SO. PAUL, WASHTL, PRODUCED THE RAW MATERIALS AT THE LAST FLEA MARKET IN THE FORM OF A "4 AMP" POWER SUPPLY CALLED A "MR CB", WHICH HE ADVISED HAD A PROBLEM. HE SAID THAT THE EXTERNALLY MOUNTED TRANSISTOR WAS SHORTED TO THE CASE. AFTER THE TRANSACTION AND THE PERILOUS TRIP HOME TIED TO THE SEAT OF THE MOTORCYCLE, THE SUPPLY WAS OPENED FOR INSPECTION. AT THIS TIME I WAS UNAWARE THAT BOB, WA5CJG, HAD THE INSIDE DOPE ON THESE POWER SUPPLIES. THE CIRCUIT LOOKED LIKE FIGURE ONE.

THE CASE OF THE SERIES PASS TRANSISTOR, Q3, WAS INDEED SHORTED TO THE SUPPLY CASE. THERE HAD BEEN NO ATTEMPT TO INSULATE IT. THE CASE OF Q3 IS THE COLLECTOR SO THE CASE OF THE SUPPLY MEASURED ABOUT 22.7 VOLTS POSITIVE WITH RESPECT TO THE MINUS TERMINAL. NOT TOO COOL BUT IT DID NOT PREVENT THE THING FROM WORKING. ALL THE TRANSISTORS SEEMED TO BE WORKING, Q3 SEEMED TO BE OK, SO I TRIED SOME LOADS ON IT TO SEE HOW WELL IT REGULATED. WHAT A DISAPPOINTMENT! OPEN CIRCUIT VOLTAGE WAS 13.2 VOLTS. WITH 2.8 AMPS, IT DROPPED TO 11.6 VOLTS AND WITH 3.2 AMPS, IT DROPPED TO 9 VOLTS AND THE RIPPLE WAS

AWFUL. COMBINATIONS OF AUTOMOBILE HEADLIGHT BULBS WERE USED TO LOAD THE SUPPLY...EVER WONDER WHAT TO USE THAT OLD BULB WITH THE BURNED OUT LOW BEAM FOR? RIPPLE WAS MEASURED BY USING THE "OUTPUT" TERMINALS OF THE SIMPSON VOM. ANY VOM WOULD WORK BY PUTTING IT ON THE LOWEST VOLTAGE SCALE, SWITCHING TO AC AND USING A $0.1 \mu\text{F}$ CAPACITOR IN SERIES WITH ONE OF THE LEADS. OF COURSE, A SCOPE WILL WORK TOO, BUT WE ARE TRYING TO KEEP THIS SIMPLE, REMEMBER?

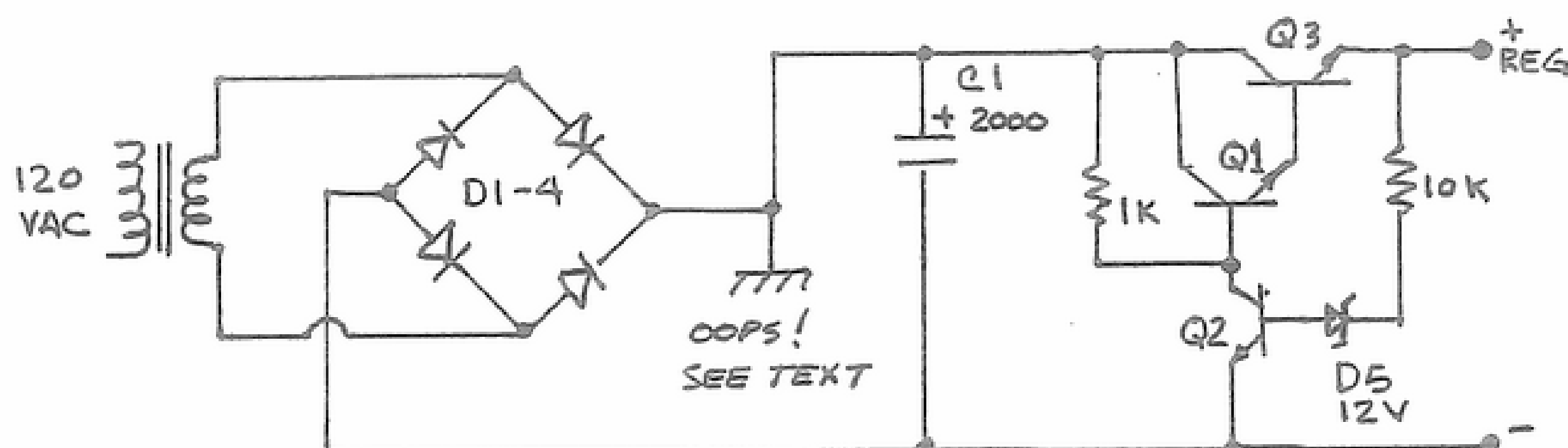


FIGURE 1. ORIGINAL REGULATOR

WELL, OBVIOUSLY, I WAS GOING TO HAVE TO DO SOMETHING DRASTIC TO PURGE THE "CB" CHARACTERISTICS OF THIS SUPPLY. SEVERAL PROBLEMS WERE EVIDENT, ASIDE FROM THE OBVIOUS PROBLEM THAT IT WASN'T ANY GOOD TO USE ON A RADIO.

FIRST OF ALL, THE HOT CASE PROBLEM WOULD BE A REAL THRILL IF THE TRANSCEIVER CASE TOUCHED THE SUPPLY CASE. THERE WAS BOUND TO BE A FEW HEART STOPPING SPARKS BEFORE THE FUSE LET GO. SECOND, RIPPLE OF ANY AMOUNT, IS INEXCUSABLE WITH A REGULATED SUPPLY. THIRD, THE "REGULATED" SUPPLY VOLTAGE WOULD CLIMB IF THE BOX WAS SQUIRTED WITH RF FROM A HT. THIS IS NO GOOD. FOURTH, THE REGULATOR CONFIGURATION WAS UNSTABLE. NOTICE HOW IT WORKS. IF THE PLUS OUTPUT TERMINAL VOLTAGE GOES UP, D5, THE ZENER, WILL CONDUCT MORE CURRENT, TURNING Q2 ON. THIS TAKES SOME CURRENT AWAY FROM Q1, TURNING IT, AND Q3 OFF. EVERYTHING WAS OK UNTIL I TRIED TO ADD SOME SMALL CAPACITORS TO "RF PROOF" IT. THE REGULATOR STARTED TO ACT LIKE AN OSCILLATOR AND I DIDN'T EVEN BOTHER TO MEASURE THE MESSY OUTPUT IT WAS DEVELOPING. THE AVERAGE VOLTAGE WAS JUMPING UP SO THIS WAS ENOUGH TO CONVINCE ME TO GIVE UP AND START THE REGULATOR ALMOST OVER FROM SCRATCH.

THE SERIES PASS TRANSISTOR LOOKED LIKE A 2N3055, THOUGH IT HAD NO NUMBERS ON IT. AT 4 AMPS COLLECTOR CURRENT, AND 4 VOLTS DROP, THE BOOK SAYS THAT A 2N3055 WILL HAVE A GAIN, OR BETA, OF FROM 20 TO 70, MEANING IT WILL TAKE AS MUCH AS 200 MA OF BASE CURRENT TO GET 4 AMPS OF COLLECTOR CURRENT. IF IT IS PRETTY GOOD, IT CAN SUPPLY THIS CURRENT WITH ABOUT 5 MA OF BASE DRIVE, MAYBE LESS, IF IT IS REALLY GOOD TRANSISTOR. TO GET 5 MA OF BASE DRIVE, THE 1K RESISTOR HAS TO HAVE 5 VOLTS DROP ACROSS IT. MEASURING THIS SUPPLY WHILE IT IS PRODUCING 3.2 AMPS OUTPUT SHOWS ONLY 16.8 VOLTS AVAILABLE AT C1. FIVE VOLTS DROP FROM THIS POINT WOULD ONLY PUT 11.8 VOLTS ON THE BASE OF Q1. IT'S EMITTER WOULD HAVE ABOUT 11.1 VOLTS AND THE EMITTER OF Q3 WOULD HAVE ONLY 10.4 VOLTS. THE OUTPUT WAS MEASURED AT 9 VOLTS AT 3.2 AMPS, SO IT DIDN'T EVEN COME UP TO MINIMUM EXPECTATIONS. IT APPEARED THAT ONE OR MORE OF THE TRANSISTORS DIDN'T HAVE MINIMUM ASSUMED GAIN.

BY THAT TIME IT WAS CLEAR THAT SOMETHING DRASTIC HAD TO BE DONE, BUT WHAT? THE SIMPLEST THING WAS TO REPLACE Q3 WITH A KNOWN GOOD TRANSISTOR. A 2N3055, SELECTED FOR HIGH GAIN WOULD BE FINE. A MOTOROLA MJE 2801 USUALLY HAS HIGHER GAIN AT HIGH CURRENT AND WOULD MAKE ANOTHER GOOD SUBSTITUTION. I DECIDED TO PULL OUT ALL THE STOPS AND PUT IN THE OLD STAND-BY FLEA MARKET SPECIAL TEXAS INSTRUMENTS TIP 140. THE TIP 140 DARLINGTON CAN BE DEPENDED ON TO YIELD A GAIN

OF 1000 AT 5 AMPS, AND I HAD ALL THE NECESSARY INSULATING HARDWARE. WITH THIS LITTLE JEWEL, I WOULD NEED LESS THAN 4 MA OF DRIVE AT 4 AMPS OUTPUT. THIS COULD BE SUPPLIED BY THE SLEAZIEST OF TRANSISTORS AT Q1

AFTER GRAFTING THE TIP 140 INTO THE CIRCUIT, THINGS BEGAN LOOKING UP. THE REGULATED VOLTAGE WAS NOW UP TO 12.2 VOLTS AT 3.7 AMPS BUT IT HAD 1 VOLT RMS OF RIPPLE, AND WAS STILL RF SENSITIVE. A 22 UF TANTALUM WAS ADDED BETWEEN THE BASE OF Q3 AND GROUND AND THE RIPPLE DROPPED SOME BUT NOT ENOUGH. THIS IS A GOOD TRICK BECAUSE A SMALL CAPACITOR HERE LOOKS LIKE A BIG ONE ON THE EMITTER. Q2 WAS REMOVED AND REPLACED WITH A 15 VOLT ZENER DIODE. THE CIRCUIT BEGAN TO LOOK LIKE SOMETHING I WAS COMFORTABLE WITH. FIGURE 2 SHOWS THE FINAL CONFIGURATION.

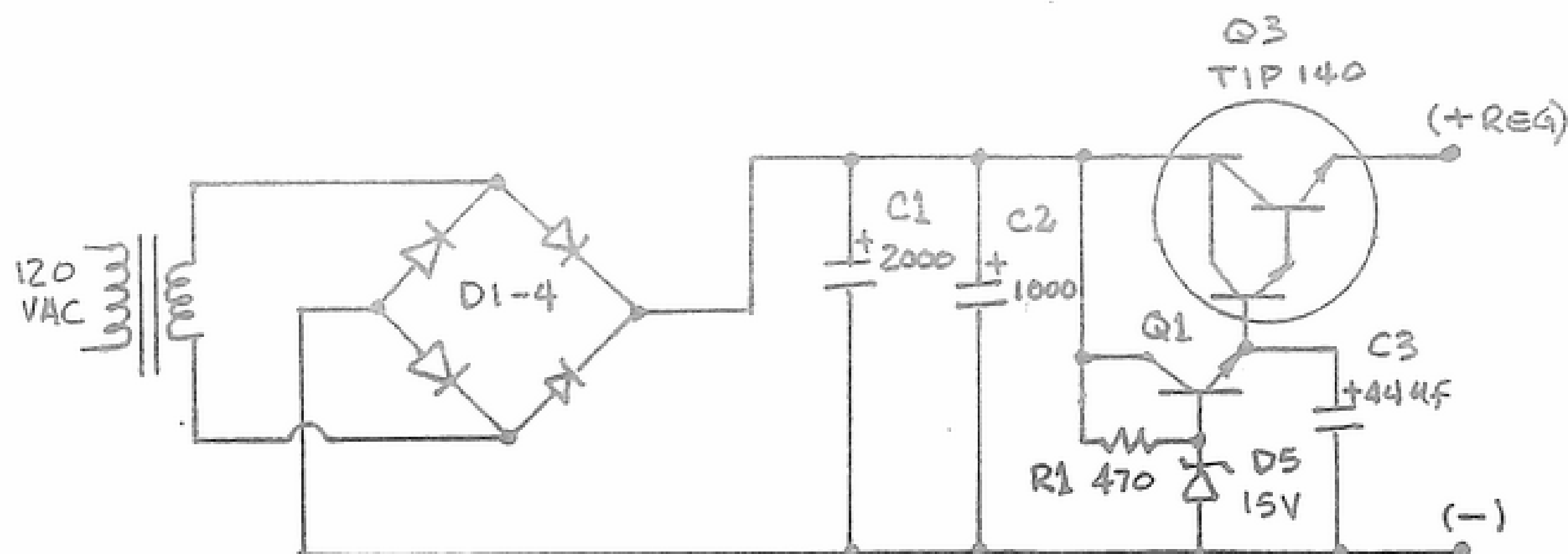


FIGURE 2 REVAMPED REGULATOR

THE 2000 uF CAPACITOR, C1, WAS INSUFFICIENT BECAUSE UNDER HEAVY LOAD, THE 15 VOLT ZENER WAS DROPPING OUT OF CONDUCTION DURING THE VALLEYS OF THE RECTIFIED AND FILTERED DC. THIS COULD BE SEEN BY MEASURING THE RIPPLE ON THE ZENER. ANOTHER 1000 uF WAS SUFFICIENT TO KEEP THE ZENER SUPPLIED WITH CURRENT AND REDUCE OUTPUT RIPPLE TO NEARLY ZERO AT 3.8 AMPS OUTPUT. TOO MUCH CAPACITANCE SHOULD NOT BE USED HERE BECAUSE IT PUTS UNNECESSARY STRESS ON THE RECTIFIER DIODES AND TRANSFORMER. THE REGULATOR WILL TAKE CARE OF THE SCRUFFY WAVEFORM IF THE UNREGULATED VOLTAGE DOES NOT DIP TOO LOW.

R1 WAS DROPPED TO 470 OHMS TO KEEP SUFFICIENT CURRENT FLOWING THROUGH THE ZENER AT MAXIMUM SUPPLY LOADING. AT MINIMUM SUPPLY LOADING, THE ZENER HAD TO HANDLE 16 MA WHICH WAS JUST A SHADE UNDER THE 250 MW OF DISSIPATION IT COULD HANDLE. THE DISTRIBUTED VOLTAGE ACROSS THE EMITTER OF Q1 AND THE TWO EMITTERS OF Q3 WAS ONLY 1.3 VOLTS WHICH MEANS ALL OF THE TRANSISTORS WERE LIGHTLY LOADED. I MIGHT BE ABLE TO REMOVE Q1 AND CONNECT THE ZENER DIRECTLY TO THE BASE OF Q3, RAISING THE ZERO LOAD VOLTAGE TO ABOUT 14.2 VOLTS, OR SO, BUT I DON'T THINK IT WOULD REDUCE THE SWING ON THE ZENER AND IMPROVE REGULATION. I PROBABLY WON'T BOTHER.

THE FINAL NUMBERS ARE 13.8 VOLTS AT 0 AMPS, 13.5 VOLTS AT .5 AMPS, 13.0 VOLTS AT 3 AMPS, 12.8 VOLTS AT 3.8 AMPS AND 12.4 VOLTS AT 4.6 AMPS. THE LATTER IS NO GOOD BECAUSE RIPPLE IS UP TO .4 VOLTS AT THAT LOADING. DISSIPATION AT 3.8 AMPS IS ABOUT 12.5 WATTS WHICH IS WELL WITHIN THE CAPACITY OF THE DEVICE WHEN IT IS HEAT SINKED.

THIS EXERCISE SHOULD ILLUSTRATE THAT BY FAIRLY SIMPLE EXAMINATION, AND A MINIMUM OF TEST EQUIPMENT, A VERY GOOD REGULATED SUPPLY CAN BE BUILT USING THE CUT-AND-TRY METHOD. I MAY NOT BE THROUGH WITH THIS ONE YET, BUT IT WORKS PRETTY GOOD SO FAR. JOE, K5JB

EDMOND AMATEUR

RADIO SOCIETY

147.72/147.12

JUNE MEETING: Ben Allen, K5IRO, provided our program by presenting an excellent discussion of antennas which developed into a lively discussion all around. Thanks Ben! We all enjoyed it. Dee can book you for a return engagement anytime.

The meeting was attended by 20 members and one guest. Dee, WD5FHR, briefed us on plans for Field Day and solicited information on equipment which members wish to contribute to the activities. The membership appropriated the sum of \$30.00 (approx. \$1.00 per member) for purchase of incentive prizes to be used in the teaching format for the Novice Class. The students are expected to learn the code from the ARRL teaching tape. During class the student plays BINGO by achieving 100% copy on the code test sessions. The prizes will be Log Books, ARRL Operating Guides, Map Packets and similar items. Bill McMullin briefed the members on EARS commitments to Ham Holiday (see separate piece herin). Bob Janda brought a large map of Edmond mounted behind acetate film with flags attached to show the locations of member stations. The objective is to produce a reduced size (8 1/2 x 11) map for distribution to members of Edmond City government, showing location of emergency communication services.



NOVICE CLASS: The response from Edmond and its suburbs to our novice class has exceeded our fondest expectations. As late as a week before the class we were worrying whether we would have enough students to make it worthwhile. Now, after three weeks of operation we have twenty (20) students. Central State University is providing an excellent classroom, complete with overhead projector and screen (thanks to Bill DeMand, Chief Engineer for the University Media Center). The class is responding with enthusiasm and we have enjoyed wonderful support from the membership. With any kind of luck we will turn out 15 to 20 new novices by Labor Day. If you haven't been out to meet the class yet, please save us one Monday evening in July and pay us a visit (7:00 PM, Room 103G, Communications Building, Central State University).

REPEATER NEWS: By the time this goes to press Martin will have been through the first attempts at dehydrating the gift heliax and we may even have a higher receive antenna. More about that later. For now please note that we have a new voice I.D. on the 430MHZ link for the auto-patch. So after you bring the repeater down, remain keyed-up until the link I.D. is completed, then sign clear. Bob's wife has a beautiful telephone voice and it will brighten up your day.

EARS

Dee has been too busy with Field Day preparations to get deeply involved in the July program so we don't have an announcement for you in this issue. Stay in touch on 2 meters. We will pass the word as soon as it is available.

HAM RADIO'S FINEST HOUR: During a recent storm in the northeast quadrant of the city our local subsidiary of Ma Bell lost the roof of one of their exchange buildings and the resultant over exposure to the elements knocked the 478 exchange off the air for several days. This left the Wilshire Nursing Home without communication. Our local ARES operation filled the gap by placing at least one amateur operator, with portable 2 meter capability, on duty at the nursing home around the clock for 4 days. Did it pay off? You bet it did! An emergency arose which required the timely summoning of an ambulance and the notification of a doctor to meet the ambulance at the hospital. EARS own Bill McMullin was the ham on duty at the time. The entire group of hams involved deserve a warm round of applause and this columnist is happy to have the opportunity to tell the story.

But here comes the kicker. As a result of the above incident, the Director of Nursing and one of her staff nurses have joined our novice class determined to make their way at least thru to Technician. There is a civic club motto which goes -- HE PROFITS MOST WHO SERVES BEST. Here is a shining example of that truth.

WALKIE-TALKIE WOES & JOYS: As indicated last month several members are sporting new talkies but it has not been without occasional moments of dismay and consternation. First the good news: Dee has a new ICOM Talkie and it has proven to be an absolute jewel to date; and your scribe is most pleased with the performance of his TR2400. But for Ken, WD5HXX and Bill, WA5ZLW it has been a different story. Ken wound up having the dealer deliver him 2 replacement units, both of which exhibited the same defect, before giving up and buying a new FT207R, which then arrived sans charger and manual. Bill experienced a frequency shift defect which was promptly rectified by delivery of a new unit; only to have the replacement unit experience a ground fault type of power failure, complete with smoking components. As of now this unit has also been replaced. We must say this for the dealer, he stood up and took his licks like a man.

HAM HOLIDAY:

As this material goes to press we are in the throgs of getting ready for Field Day, only a week away. As soon as we have that behind us it will be time to turn our attention to Ham Holiday where EARS will man the ARRL Table. Bill McMullin is in charge and will be contacting you to lend a hand on that Saturday plus Sunday morning. Lets turn out for this one and show our support for this terrific show put on by CORA each year.

SK EARS DE K5SRR CL

 * 1980 HAM HOLIDAY INFORMATION *

REGISTRATION

Registration is required, and registration badges must be worn in plain sight to enter all sessions, ladies' programs, flea market, and dealer exhibits. Multiple registration under the same name is allowed.

Children under Age 12 will be admitted free and must be accompanied by a registered parent or guardian. Ages 12 and over require registration.

Pre-Registration.....\$5.00/person
 Registration at the Door.....\$6.00/person
 Children Under Age 12.....Free Admission
 Children Ages 12 and Over.....Regular Admission
 Q.C.W.A. Breakfast.....\$6.00/person
 Sunday Banquet.....\$8.25/person

REGISTRATION DESK HOURS

Friday.....6 p.m. - 9 p.m.
 Saturday.....7 a.m. - 6 p.m.
 Sunday.....7 a.m. - 11:30 a.m. approx.

DEALER EXHIBIT HOURS

Saturday.....8 a.m. - 8 p.m.
 Sunday.....8 a.m. - mid-afternoon

FLEA MARKET - SATURDAY ONLY - 8 A.M. - 8 P.M.

A flea market table must be reserved with an accompanying pre-registration. No other reservations will be made. Set-up time will be available from 7 a.m. - 8 a.m. Tables must be claimed by 10 a.m.; otherwise, they will be given away, first come, first served.

AWARD DRAWINGS

Registration or Pre-Registration to Ham Holiday qualifies the participant to a registration badge. The registration badges themselves are used for the Final Award Drawing on Sunday. These badges must be placed into the drawing drum and will be drawn to determine winners. The drawing drum will be available throughout registration desk hours if the registrant must leave prior to the Sunday Drawing. Pre-registered persons who cannot attend will have their badges entered into the drum by the Registration Staff. Also, all pre-registered guests will be eligible for a separate pre-registration drawing, held on Sunday, in conjunction with the other drawings.

Entrants need not be present at the final drawings on Sunday. In the event a winner is not present, awards may be signed for by friends or relatives. Proper identification may be asked for, and these records may be maintained for the benefit of the winner. If the awards are not claimed by the winner or a representative, CORA, INC. will assume the responsibility of notifying the winner for delivery arrangements, at no cost to CORA.

Immediately following the drawing of all miscellaneous prizes, all winning badges will be placed back in the drum for the Grand Award Drawing. All registrants will be eligible for the Grand Award. CORA Board Members, HAM HOLIDAY chairpersons, and volunteers in all respects of CORA HAM HOLIDAY are eligible for all drawings and awards.

Help CORA Plan Ahead

PRE-REGISTER NOW



TURN THIS PAGE OVER NOW
AND PRE-REGISTER FOR
THE TIME OF YOUR LIFE

- * AVOID THE LONG REGISTRATION LINE!
- * GET TO SEE THE "GOODIES" SOONER!
- * HAVE MORE "GREEN" IN YOUR POCKET FOR THAT GREAT DEAL!
- * EYEBALL EARLIER--SEE ALL THE PROGRAMS

PROPOSED CONSTITUTION

OKLAHOMA CITY AUTOPATCH ASSOCIATION, INC.

ARTICLE I

NAME

Sec. 1 - The name of this organization shall be the Oklahoma City Autopatch Association Inc., hereinafter called OCAPA.

ARTICLE II

PURPOSE

Sec. 1 - The purpose of OCAPA is to promote interest in the fields of communications, electronics and the Amateur Radio Service.

ARTICLE III

MEMBERSHIP

Sec. 1 - All persons interested in Amateur Radio and electronics are eligible for membership in OCAPA.

Sec. 2 - Application for membership shall be payment of membership dues accompanied by application form to the Treasurer.

Sec. 3 - A member's spouse and/or dependents under the age of 18, residing in the same household, having a valid Amateur license will automatically become a member of OCAPA with full membership privileges upon registration with the Treasurer.

Sec. 4 - Membership will be renewed on an annual basis by payment of dues to the Treasurer on or before the last day of the month of expiration.

Sec. 5 - A member of OCAPA is one who is a holder of a valid F.C.C. issued Amateur Radio license and has met requirements previously set forth in this article.

Sec. 6 - A member may be expelled from OCAPA after:

- a. An investigation and hearing by the Executive Committee.
- b. Presentation of the Executive Committee's findings at a subsequent duly constituted meeting.
- c. A majority vote of the members present at said duly constituted meeting in favor of the expulsion.

Sec. 7 - A member, once expelled from OCAPA, shall not be eligible for readmission.

ARTICLE IV

BY-LAWS

Sec. 1 - OCAPA shall adopt by-laws which will include provisions for the government of the membership, organization, and officers of OCAPA. Such by-laws may be amended from time to time as therein provided.

ARTICLE V

AMENDMENTS

Sec. 1 - This constitution may be amended when approved by two-thirds (2/3) of the members present at a regular duly constituted meeting, provided that mem-



bers receive twenty-eight (28) days prior notice of said amendment.

ARTICLE VI

ADOPTION

Sec. 1 - This constitution shall be adopted and become effective as the Constitution of OCAPA when it shall have received a two-thirds (2/3) acceptance of the members present at a regular duly constituted meeting, provided that members have received prior notice.

PROPOSED BY-LAWS

OKLAHOMA CITY AUTOPATCH ASSOCIATION INC.

SECTION I

AUTHORITY

The administration of the affairs of OCAPA shall be vested in an Executive Committee. The Executive Committee shall consist of: The elected officers of OCAPA, the most recent Past-President, the Trustee, and the Technical Committee's Coordinator.

SECTION II

OFFICERS

A. The officers of OCAPA shall be:

1. President
2. Vice-President
3. Secretary
4. Treasurer

B. TERM OF OFFICE

The term of office of the officers shall begin at the regular meeting in September and shall be for one (1) year. No officer may serve for more than two (2) consecutive terms in any one office.

C. ELIGIBILITY

Any member of OCAPA shall be eligible to hold office.

D. NOMINATIONS AND ELECTIONS

1. The elected offices shall be filled by ballot during the month of August.
2. A nominating committee shall be appointed by the President. Nominations will be presented to OCAPA at the July meeting, however, nominations from the floor must be acknowledged.
3. Voting shall be by secret ballot of members present at the announced election meeting. Nominees receiving the majority of votes shall be the elected officers.

E. VACANCIES

Any officer vacancy occurring after the regular election shall be filled by an appointment by the President and approved by the Executive Committee.



F. ORDER OF SUCCESSION

In the event of the inability of the President to properly discharge his duties, the order of succession shall be: Vice-President, Secretary and then Treasurer.

SECTION III

DUTIES OF OFFICERS

- A. PRESIDENT - It shall be the duty of the President to preside at all meetings of OCAPA. He shall appoint any officers pro-tempore or committees that may be necessary. The President shall act as chairman of the Executive Committee and shall be an ex-officio member of all committees. The President's responsibilities include stimulating overall functioning of OCAPA's officers and committees as he deems necessary to assure club activity preparations are completed as scheduled. The President shall be one of OCAPA's representatives to C.O.R.A.
- B. VICE-PRESIDENT - The Vice-President shall take over the duties of the President in the President's absence. He shall have all the authority of the President when acting in the Presidential capacity. He shall be responsible for public relations, news and input to C & E.
- C. SECRETARY - The Secretary shall keep a permanent file of all OCAPA correspondence and minutes of all meetings. He shall handle all official OCAPA correspondence.
- D. TREASURER - The Treasurer shall receive and disburse all funds and keep an accurate record of such, shall be personally responsible for all funds and shall give an accounting of all funds at each meeting of OCAPA. He shall keep the membership list current, issue membership cards and provide current membership information to the Secretary and membership committee chairman.

SECTION IV

DUTIES OF THE EXECUTIVE COMMITTEE

The Executive Committee shall appoint the Technical Committee's Coordinator, appoint the Trustee and be responsible for the general management of OCAPA.

SECTION V

REMOVAL FROM OFFICE

Any officer or Executive Committee member may be removed from office by a majority vote of members present at a duly constituted meeting, provided that members receive twenty-eight (28) days prior notice of said proposed action.

SECTION VI

TRUSTEE

The Trustee, appointed by the Executive Committee and serving at their pleasure, shall be a member of OCAPA, and shall provide necessary licensing for OCAPA's repeaters.

SECTION VII

TECHNICAL COMMITTEE COORDINATOR

The Technical Committee Coordinator, appointed by the Executive Committee and serving at their pleasure, shall coordinate all routine maintenance and operation of the repeaters. He shall, when so directed by OCAPA and approved by the



Trustee, coordinate any changes, revisions or additions to the repeater equipment. He shall be responsible for maintaining an inventory of all of OCAPA's equipment.

SECTION VIII

MEETINGS

A. DULY CONSTITUTED MEETINGS

1. Meetings shall be held once per calendar month.
2. Special meetings shall be called by the President or by a majority of the Executive Committee. Appropriate notice of the special meeting shall be given to OCAPA's membership.

B. EXECUTIVE COMMITTEE MEETINGS

These shall be held at the request of the President or at the request of a majority of the Executive Committee members. A majority of the Executive Committee must be present to constitute a proper meeting. All Executive Committee meetings will be open to all members of OCAPA.

SECTION IX

DUES

Dues are \$25.00 per year.

SECTION X

AMENDMENTS

These by-laws may be amended when approved by a majority of the members present at a regular meeting, provided that members receive twenty-eight (28) days prior notice of said amendment.

SECTION XI

ADOPTION

These By-laws shall be adopted and become effective as the By-laws of OCAPA when they have received a two-thirds (2/3) acceptance of the members present at a regular duly constituted meeting, provided that the members received prior notice.

CLUB NEWS

CONSTITUTION AND BY-LAWS: The proposed constitution which was printed in the June issue of C&E was presented at the regular June meeting. This proposal was turned down by the members and sent back to the committee for revision. The above proposed Constitution and By-Laws was re-drawn by the committee and will be voted on at the regular July meeting. Please bring your copy of the C&E to this meeting.

ELECTIONS: A nominating committee composed of Sully, WB5YLZ, Jim, N5BEQ, Buddy, KA5AQY and Chet, W5GDL was appointed to present a list of nominees at the July meeting. New officers will be elected at the August meeting and assume duties at the September meeting.

WEATHER NET: The weather net has been very active during the past few weeks and we have heard many good words about this net. A special thanks to all who are out in the area spotting the storms. Henry, N5IH, net control and the boys in the radar room have been doing an excellent job. The information coming back from the radar room to the field has been good. In case of severe weather, check in on 22/82. K5NK

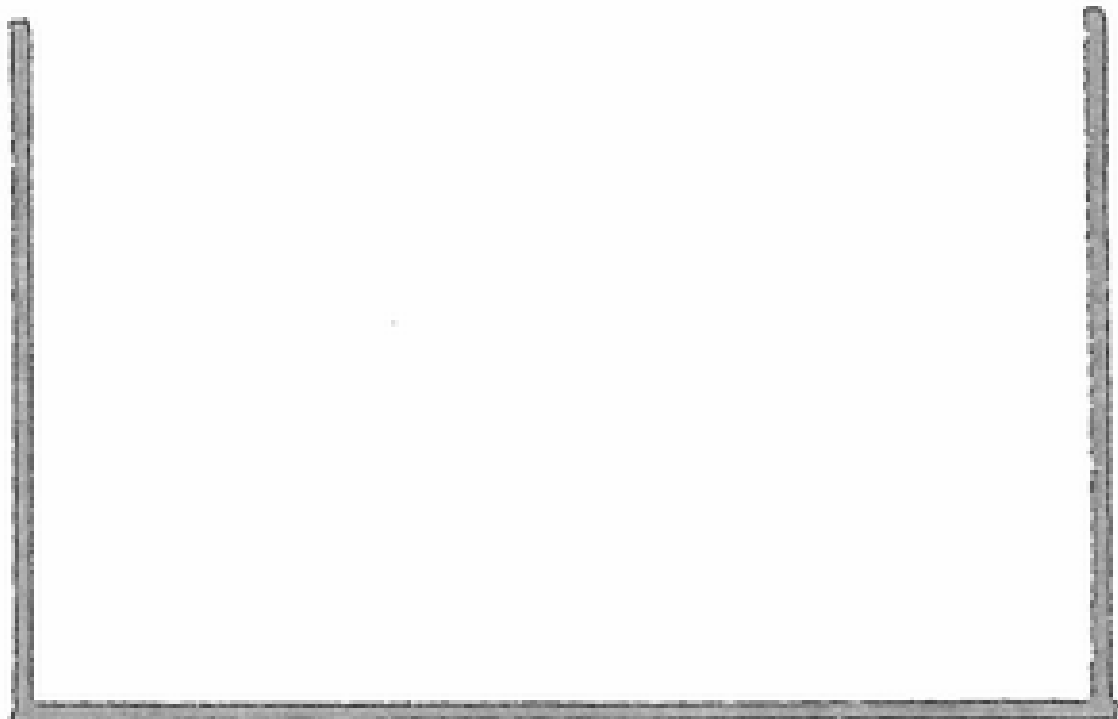


MONKEY CLUB MEETING: All Monkey Club members are reminded of our first annual meeting to be held at Ham Holiday, 1980. President Ron, KE5M, has set the meeting time as 3:00 a.m. on Sunday morning in the swimming pool of Lincoln Plaza Inn, at the 8 foot water level. All members are requested to wear their Monkey Suits with their Monkey Wrench at their side. We plan to do a lot of Monkeying around, carry on a little Monkey Business, cut a Monkey Shine or two and have a whole lot of Monkey Chatter. Our beloved program chairman, AI5Y has worked out the following very impressive program for us:

- 3:00 a.m. Meeting called to order, KE5M, President.
- 3:02 a.m. Short Prayer, AAØO, Vice President.
- 3:04 a.m. Monkey Net opens, K5NK, Secretary.
- 3:07 a.m. Flea Picking Contest, KF5E, Treasurer.
- 3:09 a.m. Prehensile Appendage Contest, AI5Y, Program Chairman. (Biggest)
- 3:14 a.m. Banana Eating Contest, ADIS, Reporter.
- 3:15 a.m. Repeater Input Frequency Discussion, KE5M.
- 3:16 a.m. Monkey Hong, AAØO.
- 3:18 a.m. Honoring the Great Monkey Ceremony, K5NK.
- 3:20 a.m. Breakfast - Monkey Bread, KF5E.
- 3:25 a.m. Closing Ceremony, AI5Y.
- 3:30 a.m. Closing Prayer, ADIS.

K5NK

I HEARD: DDI passing traffic to Minninapolis.....M's neighbors are complain-
ing about his grass making so much noise as it grows.....KFT's brain doesn't
function as well since she has grown taller.....AWI can't count poles while
she is mobiling.....FLO uses a 5 wave length mobil antenna.....GKK
likes the shaft.....GEP considers glasses a necessity.....DMX is fast
on the trigger.....FXP would shoot himself if he had to work at Tinker Field
WM testing on the weather net again.....OZE and everything like that.....
CZN got a nice gift certificate for Father's Day and can't use it yet.....FXP
is getting a solar powered windmill.....DAU had her grubbies on.....FXP
describing the nationality, ancestry, etc. of one certain driver.....JYT
observing the pretty gals.....and very little else worth reporting.....K5NK



---Super Glue

Double Sided Printed Circuit Board

Double Sided Printed Circuit Board material makes excellent enclosures for building projects. It is easy to solder the components to. One problem can be experienced when one solders the sides to the bottom in keeping the sides straight and true as they are soldered together. I have found an easy way to do this and would like to pass it along. After the material is cut to size, take some Super Glue or some type of fast drying glue, and glue the sides in place. After the glue has dried, it is very easy to solder the pieces together without worrying about them moving out of position.

Buddy, KA5AQY

DID YOU KNOW - Custer's Last Stand cost a telegraph company about \$100. He was being dunned in that amount for messages he'd charged but never paid on the day he left for the Little Big Horn.



Well, it finally happened! Being the cynical grouch that I am, I finally got angry enough about something to write about it!

As some of you know, I drive to work and home from work at hours when most amateurs are either at work, or asleep. Now - one would assume that at those hours the activity on OKC's repeaters would be reduced somewhat. Well - you're partially correct. There is not much verbal activity, but the Ker-chunk worms (A long slimy worm with a long thumb and no mouth) thrive at these times of the day. Why! they will even compete with each other to win the coveted ker-chunks per hour award, although it's very difficult to determine who the winner is. You see, the kerchunk worm never gives his call sign, so in order to receive the award, the award's committee must first determine the kerchunker's identity.

Now, if you would care to become a kerchunk work yourself, you must meet the following qualifications:

A. You must own a two-meter rig. (Preferably a walkie-talkie) although if you are interested in dx ker-chunking, you should have at least 100 watts of "GOO" (Local slang expression of the elite meaning r.f. power) and a vertically polarized beam with five elements or more.

B. You must swear an oath to the Supreme Ker-chunk Worm that you will never hold the mic button longer than 500 milliseconds (unless tuning up your "Goo Machine", which entitles you to hold the mic button down as long as your finals will stand it) and never, but never, utter a sound while doing so.

C. You must also swear that when Ker-chunking, you will under no circumstances I.D. your station.

Most amateurs can meet these qualifications effortlessly!

Now! Let me explain some of the reasons for Ker-chunking.

I. Suppose you are walking around in Sheppard Mall, Cross-Roads Mall, or, for a real thrill, the one in Norman (Sorry, I don't recall the name of it), you can actually hold your talkie over your head, press the mic button and you will receive an instant signal report without even so much as asking for one. If you hear the repeater, you can say, "WOW!, I can hit the 82 machine from here with 500 milliwatt". The mere holding up of your talkie will make you the center of attention in your immediate area, and you will probably get to tell an inquirer that you are a ham and explain how the repeater works (Ker-chunking it a few times to demonstrate how it works). By the way, don't forget to tell the person inquiring that what you are doing is illegal according to regulations.

II. In Reason I, I explained how you can get attention from the crowd and a signal report, both without opening your mouth. Reason II deals with you guys with high power and beams. The reward is the same, except that DX Ker-chunking is done in the privacy of your shack. Just imagine the extreme satisfaction of knowing that you can "hit" the Dallas Machine! without uttering a sound.

All of the above is intended as a satire. Now let's be serious. If you want to know if you can hit this machine or that machine, why not hold the mic key a little longer and say "N5XXX" and release the mic button. You will still be able to hear the squelch tail of the repeater, and who knows, maybe someone will answer you and actually talk to you. If you don't want to talk, you can always say "Sorry old Man, I don't want to talk. I was just checking to see if I could hit this machine."

Simple when you think about it and not much trouble, is it? Tom Childers N5GE

P.S. Stay tuned for my discussion on the "Noise Bug"

FOR SALE: Swan 260 Sygnet transceiver, 10 thro 80 meters. Built in a.c. and d.c. power supplies. Good condition. \$225.00. Call Tom, W5PZW, 354-3790, after 6 p.m.

Mic-Oklahoma Repeater Inc.

A NON-PROFIT ORGANIZATION
OF RADIO AMATEURS DEDICATED TO PUBLIC SERVICE

EDITOR: We Need One

NOTES.....

HERE IT IS! HAM HOLIDAY time again, it will be good to see the fine folk I've been talking to all year, and meet a bunch besides.... This has been an 'eventful' for MORI as our new repeater gets "burned in". Many thanks to Merwin K5ELL our trustee and his trusty crew including K5VVZ Ken, KB5KT Dave, and WA5HTL Paul. Despite a short interruption this past weekend, the 146,07/67 machine has worked magnificently... I don't realize how so many folk depend on our repeaters until one has a pause in service. Understand our fine technician (and the trustee of WA5YTI) Ron KA5EAI has just returned from vacation to find the 146.34/94 purring away as usual. Thanks! Ron. I hope to see you all at HAM HOLIDAY! I hope to meet all of you.....

FRED KA5CXW

Many new HAMS are being heard on the MORI repeaters and we welcome them. We can not speak too highly of the benefits of membership at the low-low rate of \$2.00 per year. For autopatch, for use of 146.07/67 and 146.34/94. If you like to use our machines regularly, join us please? With our new repeater installed now, the package is even more attractive. Send your check to: Sid Gerber 829 Bouse-Midwest City Okla. 73110

1

KA5CXW

ATTENTION REPEATER OPERATORS DEPARTMENT-MICOR RECEIVERS AVAILABLE

I got all the way to the C & E pasteup before I remembered that I forgot to mention that I was going to have access to six RF portions of the Motorola Micro receivers. These goodies feature discriminator audio output and VHF RF go in. Selectivity and Sensitivity are typical Motorola and nothing short of excellent. I do not have audio squelch boards, but may have a version laid out on a PC soon. I have one already, but will redo it by popular demand. Call me at (405) 321-5453 or 360-1302 during the day. First Come, First serve.

Micheal Salem N5MS

ATTENTION ALL CORA-MEMBER CLUBS AND VOTING CLUB REPRESENTATIVES

At the May 26 meeting of the CORA Board, Ron Recer, KE5M, treasurer, proposed the addition of the following by-law to the CORA constitution. This by-law is on recommendation from CORA's legal counsel with regards to CORA's application for tax-exempt status:

"In the event of dissolution of CORA all wind-up expense, payment of outstanding obligations, and distribution of excess assets shall be made as provided by law. In no event shall distributions be made to individuals."

This by-law will be voted on the August meeting of CORA. All voting representatives from member-clubs are urged to attend.

Kay Northcutt, WD5DYJ
CORA Secretary

MORI MINUTES

MORI

Well, what can be said? The June meeting-dinner was brought to a semblance of order (the QRM level lessened) at approximately 7:41 pm with some sort of silly announcement or other that got people's attention at the French Market Furr's with varying accounts of numbers of members and guests in attendance, 47 of them signing the roster. The date was 3 Jun 80.

After everyone was well-stuffed with the usual good food we have come to expect, the club launched into an abbreviated business session in deference to the program people and the cafeteria staff.

Our thanks to Mr. Jack Stevens of Furr's for his fine service as usual and for staying so late to assist us.

Special thanks to Susie KA5FED for serving tea and coffee throughout the program and for working with Rosemary Eason YF of K5VVZ to acquire and set up such a fine and timely program in the first place.

As prize committee for Ham Holiday, MORI is responsible for having people available to distribute door prizes during programs for which we were remiss last year. If you wish to join Clarence K5YAO and Clara WD5KPT in volunteering early for this, contact Jim N5BEQ.

On-scene registration this year's HH80 is being chaired by Paul WA5HTL, he NEEDS many people, especially 9 till 2 or 3 Saturday to sit at the registration table and sign people in. So, when you find the time you can spare during HH80, tell Paul soon!...

A get-well card for George Lagaly W5NTL, Station Manager for W5PAA, the Aeronautical Center Club Station, and WR5AVM: 25/85, their repeater, was circulated throughout the membership and delivered to him after the adjournment in lieu of an aftermeeting. Many best wishes for the speediest of recoveries went along with the card.

Business concluded with a five-minute break to pay dinner checks and the like before the program.

"SOS: Water Safety," and "The Skippers' Outboard Manual" were the programs put on by local U.S. Coast Guard Auxiliary Commander John Grilley assisted by Nathan Kirby KB5BF with technical (slide) assist from Mark WD5DYI, Glenn K5LDL, Jerry M5MCJ, Fred KA5CXW and Chuck K5NK.

Door prizes were won by Cecelia N5BGG, Major KA5DMX, Mark WD5DYI, Kay WD5DYJ, Jim N5BEQ, Chuck K5NK and Connie KA5ERZ.

The group adjourned at 10 pm.

Next meeting is 8pm, 1 July at the EOC, 4600 N. Eastern.

Jim N5BEQ
Secretary

Now, come on gang, here's a well-regulated, solid 2-amp 12-volt powersupply for a measly \$125.00 and not one phone call since first listed last month ! Have you forgotten that there's a Drake TR-22 attached to it and goes with it for the same price? It has .67, .76, .82, .85, .94, and .12 at 800,000 microwatts output and built-in rechargeable NiCads. Will sell separately at \$25 and \$100 respectively.

Jim N5BEQ, 236-0368

NO! GOOD DO YOU RATE THE ELECTRONICS OF YOUR CAR?

Just so-so? Guess again. According to L. Marion, writing in the 3 Jan '80 issue of Electronics, in an article titled "Detroit wants Higher Quality," the automobile electronic systems are more reliable than military or aerospace hardware!

W5JJ

Amateur Radio Station AA00 will hold Field Day exercises in an open field on the South side of the old railroad right-of-way, Richland, Oklahoma. Operation will be QRPP (less than 5w input), battery power, single operator. The purpose of this notice is to satisfy the rules requirement for publication, for the 1980 Field Day, June 28-29, 1980.

The G.P.A.R.C. held its monthly meeting on the 3rd of June. There were 17 members and 2 guests present. WB5OVT Rod called the meeting to order and expressed the thanks from the Gage Chamber of Commerce for the communications set up by the club. Field Day was a major topic of the club meeting and most of the details were ironed out. It was also discussed that three of the club members keep their eyes peeled for a solid-state repeater to replace the G.E. tube type that we have in operation at this time. The editing duties for the C.O.R.A. will be the responsibility of W4ZSL Wes for the next few months.

The N.W.P.K. Service net report for the month of May was 196 check-ins, 6 routine pieces of routine traffic passed in 16 sessions. WB5EGZ Doug, C.D. director of this area, showed a film of the 1979 Wichita Falls tornado and storm. KA5BCO Bill volunteered to help WB5OVT as net manager this summer while Rod is in summer camp and on vacation.

The alarm clock jangled an uneathly noise at 4am Sat. morning May 24th. The G.P.A.R.C. had taken on the job of communications for the 12th annual Gage, Okla. Marathon. We had gathered up a telescoping pole and a 2mtr. beam, pots of coffee, and snacks the evening before; a couple of important phone calls were made to make sure no-one overslept and we were on our way; 35 miles to Gage.

The Marathon was to start at 6am and we all made it there with just a few minutes of preparation time to spare. WA5OUV O.C. at base net control, WA5PLW Wendle with a "T. as assistant to O.C., WB0PGD Ron at 2 mile check point, W4ZSL Wes at 4 mile check point, N5CCV Gerald at the 6 mile-plus turn around and check point, with KB5XI Gordon as roving mobile and general flunky. Also helping and standing by were WB5OVQ Jon, WB5OVT Rod, WB5MZZ Ross, and KB0HH Gary.

There were 35 contestants starting the Marathon, two of which were young ladies and the runners were from 13 to 70-years of age. The race is ran over a course that is a little over six miles out and back twice, for a distance of 26 miles and 385 yards. There were check points, aid stations water or gator aid, and communications every two miles. There were the usual number of drop-outs, leg cramps, and other minor complications taken care of without any emergencies arising to any of the contestants. The first place runner finished in 2hr 36min., just a few minutes slow to qualify for the major Marathons. The two ladies also completed in good time. Mr. Denton, 70 years old, whom has ran for the past 8 or 9 years in the Gage event, completed about on his schedual. He has also ran the 50 mile Colo. Marathon in the last year.

It only took eight weeks of waiting for two amateurs to receive their new call signs; KA5FKV Gerald is now N5CCV and WD5DFF Gordon is now KB5XI.

We have had a couple of weather alerts and not very much damage has been reported in the immediate area and have had good response from the amateurs in the area. A storm moved across southern Kan. from Coldwater into northern Okla. to Alva and on into Enid, doing a lot of damage along the way.

Several of the amateurs participated in a search of a drowning at Ft. Supply lake and were the ones that got flood lights and generators into the area for use, during the evening and night.

WB0PGD Ron has ordered a 100ft. of Rohn 20 tower, has a new I-Com 260AE, and has applied for a new 5 area call.

WB0QGW Carla has also sent in for a new 5 call, and has been busy making artifical honey from the clover blooms, that grow wild along the roads and in the fields. It tastes like honey also.

WD5DFF Bill is the proud owner of a TRS 80 level 2 computer, a new 260AE, and is enlarging his shack to make room for all of his gear.

K5OJ Guido is busy hooking up a new 2mtr. amplifier and has purchased a new computer kit, he also took in the Ham-Com at Dallas and renewed some old acquaintances.

WA5PLW Wendle has been extremely busy helping several of the "Hams" repair their rigs. It surely is nice to have that kind of help around.

G.P.A.R.C. cont.

KA5BCO Bill has a National Weather Service line into his teletype at his shack. He also has his antennas up after moving into his new home. In fact several of the amateurs had an antenna party weekend, putting up several antennas at different shacks.

W4ZSL Wes has new antennas up, has had some trouble with his H.F. rig, but has been having a ball on C.W.

N5CCV Gerald was so busy running to the Post Office looking for that new call that repair jobs were stacking up about three high around his shop-but has them all lined out now that he has more time.

WA5UTO Steve has been helping several of the Hams with their antennas and tower climbing. He has also been busy with haying and now harvesting.

WB5EGZ Doug has really been busy scampering; repairing damage from lightning to his TV equipment, out at the Radar on storm watches, and spending a tireing evering, night and morning on a drownig search.

WN5LVI David has sent in a 610 for July testing, and has already purchased a new 2mtr. mobile rig. Sounds pretty confident!!

WA3YQJ Doyle trying to get his wheat harvested and trying to get these new calls correct.

WB5MZZ Ross visiting with N5ANV Veron, whom is spending part of his summer vacation with relatives in Shattuck.

WB5ECP Doc has moved to FT. Supply lake for the summer months, doesn't like the high winds and bad weather.

WB5DGT Harry has a new 2mtr rig with ten memory scan, working DX, has had to go to the storm cave a couple of times this year: but gets weather reports to us with good consistancy.

WD5BOZ Rick has been down south with their custom cutting machines and is back home to cut their wheat befor^e moving north.

K5YZK Jim Getting moved into his new home; Ann said that everything is still in boxes that are trying to hide and using crates for furniture. We all hope you get settled in soon.

N5CCV reports that F.C.C. will start allowing non-profit organization to have amateur licenseing at ham fest again if all the expenses incurred are finembursed to F.C.C.

HOME MADE CLOVER HONEY

by WB0QGW


1. 10 cups of sugar
2. 2 & 1/2 cups of warm water
3. 1 tablespoon alum
4. 66 spikes or blooms of yellow clover
(you can leave the stems that hold-
the spikes together but take off
any leaves)

Mix the first three together thoroughly- bring to a low boil for ten minutes. Stir while heating but DO NOT STIR DURING SLOW BOIL.

Remove from heat and gently push clover blooms below the top of liquid, let the blooms set in liquid for 10 mitutes and strain into jars. TD's note this is really a mild tasting honey- more clover

blooms 15-20 will make it a little stronger.

CUL 73's KB5XI

	<p>TUBES 50% OFF Free Testing Most Electronic Engineers and Technicians buy from us</p> <p>Kelly's DISCOUNT ELECTRONICS 4221 N. MacArthur PH: 787-0022 Oklahoma City.</p>	<p>WORLD WIDE ELECTRONICS J. C. BIDDY</p> <p>(405) 525-9897 1715 N.W. 16TH</p> <p>OKLAHOMA CITY, OKLA. 73106</p>
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Commonest Metric Conversions

	When you know:	You can find:	If you multiply by:
LENGTH	inches	millimeters	25
	feet	centimeters	30
	yards	meters	0.9
	miles	kilometers	1.6
	millimeters	inches	0.04
	centimeters	inches	0.4
	meters	yards	1.1
	kilometers	miles	0.6
AREA	square inches	square centimeters	6.5
	square feet	square meters	0.09
	square yards	square meters	0.8
	square miles	square kilometers	2.6
	acres	square hectometers (hectares)	0.4
	square centimeters	square inches	0.16
	square meters	square yards	1.2
	square kilometers	square miles	0.4
	square hectometers (hectares)	acres	2.5
MASS	ounces	grams	28
	pounds	kilograms	0.45
	short tons	megagrams (metric tons)	0.9
	grams	ounces	0.035
	kilograms	pounds	2.2
	megagrams (metric tons)	short tons	1.1
LIQUID VOLUME	ounces	milliliters	30
	pints	liters	0.47
	quarts	liters	0.95
	gallons	liters	3.8
	milliliters	ounces	0.034
	liters	pints	2.1
	liters	quarts	1.06
	liters	gallons	0.26
TEM- PERA- TURE	degrees Fahrenheit	degrees Celsius	5/9 (after subtract- ing 32)
	degrees Celsius	degrees Fahrenheit	9/5 (then add 32)

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Multiples	Prefixes	Symbols
1 000 000 - 10 ⁶	mega	M
1000 - 10 ³	kilo	k
0.01 - 10 ⁻²	centi	c
0.001 - 10 ⁻³	milli	m
0.000 001 - 10 ⁻⁶	micro	μ





WHEATSTRAW ARC ®
01-61

EDITOR: Virginia Beneda, 825-3302

The first order of business I would like to attend to is to thank Ralph WA5PFFK for writing the newsletter last month, and also thank the club for being tolerant for the times I missed C&E. My capability is precarious under any circumstance, but add a little adversity and it's total disaster.

A dozen or so good eggs and a real flock of chicks met at the Watonga State Bank for the regular June meeting. Several of our usually regular members were out rushing summer with vacations and outings - I havn't heard if Ralph WB5PFW managed to miss all the hail storms with his Porsche, but I did hear it was testing his ability a little. The program for Ham Holiday is sounding fantastic, and plans are in progress for a nifty Field Day if "Good Old Mother Nature" just cooperates a little. Gets a little hairy out on the hill when she throws one of her fits. Huh, Guys!

After the president WD5JNT swung the gavel a time or two Leonard WA5FSN was asked to make a report on the CORA meeting. He gave a run-down on the program presented to and accepted by CORA for Ham Holiday. Want to be busy? Try to cram in all the programs for the week-end. He also has tickets on the Kenwood that C&E is going to raffle - Proceeds go to buy much needed equipment so be sure to purchase some. Among the door prizes is an FT707 Yeasu and an Icom 260A, Not bad, Huh? On friday night be sure to get in on the B.Y.O.B. bash, using 2 meter battery operated rigs-having a QSL in one room for an hour. If you think Mt. St. Helen's went crazy wait until you try this!

Johnny K5GBN reported on the portable power unit for Field Day. This little fellow doesn't believe in the B.Y.O.B. theory so Johnny was elected to do the honors. Everyone mark your calendars for the 28th & 29th and "Head for the Hill". In Oklahoma you never know if you will need your  or an  so just come prepared.

WD5JNT brought a piece of Helliax to Antenna and Impedence Transmission connection for "Show & Tell". K5GGL reported the stubs are broad banded enough to cover the complete 2 meter band and calculated no loss at all. I don't know about impedance but it would make a dandy looking accessory for a pole planter.

The July meeting will be another picnic outing at Canton Lake. Those who attended last year know this is one you don't want to miss. YMM! Made the "Gallop-ing Gourmet" look like and amateur. The members (Y.L.'s really, Ha!) from Canton and Longdale are hosting and furnishing the Iced Tea etc: so all you "Ham Bones" gather up your beans and get ready for another recipe swap. Tune in to net for directions to the shelter.

Johnny K5GBN is acting net control for June. Check-ins are down in number so every-one get your eye on the calendar and the clock to check in for information on coming events. Visitors are always welcome. 01-61 each Wednesday at 9 P.M.

Meeting adjourned with Goldie's good punch, a boo-coo of cookies and an enjoyable slide presentation by WA5PFFK. WB5WTN - Reporter

Remember Field Day! The July Picnic Meeting! Ham Holiday!



THE AMERICAN RADIO RELAY LEAGUE, INC.

OFFICE OF THE
SECTION COMMUNICATIONS MANAGER

LEONARD HOLLAR WA5FSN

QST—
OFFICIAL ORGAN

Welcome to 'Ham Holiday 80'. On behalf of ARRL, I wish to extend to all: a Welcome and to encourage you to attend the programs that have been arranged for your benefit.

The Program Committee has gone to great lengths to try to obtain programs of local interest, prepared and presented by local people.

We, of course, are prejudiced toward the ARES program on Saturday A.M.. The program on Radiation effects in the P.M.; and then the ARRL Forum will be of interest to all.

Again, We hope you enjoy 'Ham Holiday 80'.

Oklahoma Happenings:

Quite a bit of 'Sky Warn' activities this past month. I do not have the full story as of yet. It is hard to get some people to tell us what they did and when or where.

The Law of Averages says that Tornado Season is over. I would not bet on it. HI. We must never let our guard down.


I found out the other day that the 150ft of nylon rope, I carry as part of my Emergency Antenna Kit, Came in handy on a Search and Recovery effort for a drowning victim.

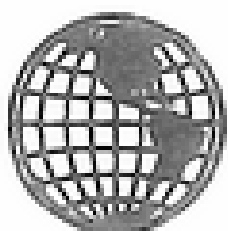
Summer Skip is hurting Net Activities. We need NCS's and other help on all Nets.

May Net Report:

Net	Sessions	QNI	QTC	WX
O.F.O.N.	22	397	87	
Sooner	27	494	165	
O.T.W.N.	27	464	316	318
O.A.N.	31	170	68	
O.L.Z.	31	198	90	
Night Owl	31	516	80	
O.P.E.N.	4	250	11	
A.T.W.N. (Ardmore)	5	100	-	
N.W.O.S.N. (WDWD)	16	205	6	
Grady/Caddo	4	50	1	

SeventyThree's and Happy Ham Holiday 80.


Leonard Hollar WA5FSN



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CHOCTAW ARC



EDITOR: June Allen, N5ARV

The Choctaw Amateur Radio Club met June 9, 1980 in the Choctaw City Hall, 2405 North Main and the meeting was called to order at 7:30 P.M. by President Carter. We all wish to thank AB5H for his tasty coffee brewing and WD5FIJ for bringing donuts. The Club expresses their thanks to all who had a part in obtaining new meeting place.

The Treasurer's Report was given by KA5ALO and WD5EVP gave the Cora Report.

WB50HK reported a problem with vandalism in Kiwanis Park and asked that Amateurs passing through area report any suspicious activities to the Choctaw Police. The Choctaw Police solicited our help in this matter.

Final plans for Field Day were discussed throughout the remainder of the meeting. Motion was made by WB50HK and seconded by KA5ALO to adjourn the meeting at 8:30 P.M. A Mini Meeting was held next door at Braum's by several Club Members.

The Club wishes to express its appreciation to W5WZM, Club EC, for his assistance to the Wilshire Nursing Home during their telephone outage. We were sorry to hear that Mack had fractured his leg and we all wish him a speedy recovery.

All local Amateurs as well as the public are invited to our Field Day Exercise which will be held in John Miskelly State Park, Choctaw, Oklahoma June 28 and 29.

CHAIN PULLING:

EGQ - Gave up on Garden, decided to grow weeds
FIJ - Little coffee maker
WZM - Cracking shins
OHK - Has combination inverted V 2 meter antenna
PDH - Gives fishing lessons to SVN, gave up on AB5H
AZP - Peels nose on storm door
IND - Has cat that modifies talkie chargers
UKP - Had tower party
KFT - Where were you?
PNH - Just goofing off
ZRU - Lost in sandburrs

See you next month.

N5ARV

THE
Amateur
Television
Experimental
Society

EDITOR: James Buchannan, W5JGC 495-2777

The ATV meetings have returned to the regular schedule of 2nd Thursday of each month. The July meeting will be on 10 July at 7:30 PM in the Communications Building at Central State University in Edmond Okla. Anyone interested in ATV is welcome to attend.

One box containing part of the ATV repeater has been received. Hopefully, the rest of the repeater is on its way.

Construction of the antenna mounting brackets has been completed. The antennas and installation items are at the tower site and should be installed in a few days.

An ATV program "Fast Scan Television Techniques And How To Get Started" will be presented at the HAM HOLIDAY. The time and date for the program has not been finalized. Anyone interested in getting on ATV should attend this program. A working ATV system composed of two stations will be in operation on Saturday, 26 July. W5JGC

Central Oklahoma Radio Amateurs

As President of C.O.R.A., I would like to take this opportunity to welcome everyone to Oklahoma Ham Holiday, 1980. The various clubs in the Oklahoma City area have worked very hard all year in making preparations for the convention. We have had a good Ham Holiday every year since we started, and we are always striving to make each year a better one.

C.O.R.A. is a great organization. We are composed of 20 clubs scattered throughout the state of Oklahoma. We work together, making it easier to provide this great meeting each year.

Included in this issue of the C. & E., which is being sent to every member of the A.R.R.L. in the state, is a program schedule for Ham Holiday. The Wheatstraw Club is to be commended for coming up with such a good program.

Please notice that a C.O.R.A. meeting is scheduled for Saturday morning at 11:00 o'clock. This is an important meeting and the first of its kind. We ask that all clubs participating in C.O.R.A. have at least three representatives at this meeting. It will be an open meeting, and we encourage anyone to attend. Should there be clubs desiring to find out more about C.O.R.A., we certainly encourage you to be in attendance.

We look forward to seeing everyone at Oklahoma Ham Holiday 1980.

Chuck Wilhite, K5NK
President, C.O.R.A.

The following is a list of the Commercial Exhibitors who plan to attend Oklahoma Ham Holiday 1980 in alphabetical order:

Broadie Electronics, Moore, Oklahoma.
Bullett Electronics, Garland, Texas.
Communication Center, Lincoln, Nebraska.
Debco Electronics, Cincinnati, Ohio.
Derrick Electronics, Broken Arrow, Oklahoma.
DSI Instruments, San Diego, California.
Ellard's Ex El, Oklahoma City, Oklahoma.
Bob Grinnell, Omaha, Nebraska.
Heathkit, Oklahoma City, Oklahoma.
Dave Horn, Coweta, Oklahoma.
Icom, Dallas, Texas.
Kryder Electronics, Oklahoma City, Oklahoma.
Opto-Electronics, Ft. Lauderdale, Florida.
Pecos Valley Amateur Radio Store, Roswell, New Mexico.
Radio Inc., Tulsa, Oklahoma.

We are working with other dealers at this time and hopefully they will be able to attend. There should be plenty of goodies for everyone. K5NK

For Sale by ATV Club: Cushcraft ARX-450 Antenna, 6db gain, \$30.00, Huel Hutchins K5SUD, 677-5272, Del City.

FOR SALE: MFJ Versa Tuner III, Model MFJ962, \$135.00. ICOM IC22s with VIP 80 channel switch, \$220.00. CDE Ham III rotor & 110' of cable, \$100.00. With lower mast support, \$120.00. Dentron Super Tuner, 160-10, \$100.00. Heath SWR & power meter, HM102, \$30.00. Art, W5PTM 732-8401.

A Kadiddlehopper Pow Wow will be held at the Lincoln Plaza Inn in Oklahoma City, OK on July 25-26-27, 1980. Registration fee \$15.00 per person. Contact E.E. (Gene) LeFan, WD5GLB, 1917 Huntington, Oklahoma City OK 73116



EDITOR: Bob Graham, WB5NSV 677-8685

MINUTES OF THE JUNE MEETING OF THE ACARC

The meeting was called to order at 8:01 PM by President Bob Pace, WA5CJG. There were 51 members and guests present. Following the usual round of self introductions, President Pace made several announcements, and asked for committee reports; a summary follows.

Bob announced that the July club meeting will be held 11 July, instead of the first Friday of the month. This is due to the 4th of July holiday.

Ham Holiday Report; Ladies programs are all confirmed, and a full schedule can be found elsewhere in this issue. Bob Pace has done an excellent job ram-rodding this project. Thanks Bob.

Field Day Report; Paul Asplin, WA5HTL, reported that field day preparations are in the works, and that much help will be needed. Come out and support our Field Day efforts.

CORA Report; Bob Graham, WB5NSV, reported that the July CORA meeting will be moved to 17 July (Thurs.). It was reported that Carl W5JJ, has obtained a Governors Proclamation for Amateur Appreciation Week. This will be the week of our annual Ham Holiday.

All CORA will be responsible for mailing the C&E this month.

Computer report; Bob Graham, WB5NSV, reported that some difficulty has been experienced in keeping the printer going, but otherwise all is well.

Repeater report; Bob Pace, WA5CJG, reported that the repeater is doing an excellent job, and asked that everyone knock on wood.

Charlie Greene, WA5JGU, reported that 3875-3980 KHz has been declared disaster band for this area of the country.

The program for the evening was a presentation of two films, "Static Electricity" and "Standing Waves on Transmission Lines." More on these in the next issue.

Next months program will be O.G.&E. on Energy Conservation. 73, Bob Graham, WB5NSV

RANDOM WORDS FROM THE PRESIDENT

This month, like the ones before it this year, has passed so fast I'm not sure where it went. Anyway, it's time to put the C&E together again, and as normal, I am not ready for it....Oh well, here goes anyway.

Our last club meeting was well attended and the program turned out to be a good one. I would like to thank all of you for coming out, and a special thanks to Bob WB5NSV for his help with the program. Remember, next month our club meeting will be on the 11th of July, and our program will be presented by OG&E on energy conservation. So come on out and join us.

Field day will be here and gone by the time you read this, so I hope you had a good time.

HAM HOLIDAY 1980 will be here before you know it, so be sure to preregister now so that you don't miss out on any goodies. As you know, our club is responsible for the ladies programs, so if I call on you for help, please help!

73, BOB PACE, WA5CJG

76ers MINUTES



The June meeting was called to order at 7:05 pm on the 10th at the Air National Guard Base by Prez Joe WD5BMP with 54 members and guests present.

The minutes of the May meeting were approved as published in the June Collector and Emitter (C&E).

The Treasury Report was given by Tom KF5E, the club Treasurer, also available for payment of dues.

The majority of the meeting was involved with details of Field Day 1980, 28 Jun, beginning with the change of location from Woodson Park which the Park Department cannot confirm to the grounds of South Oklahoma City Junior College, S.W. 74th Street and South May Ave.

Next, it was agreed to change the call sign the club will use Field Day to that of Chuck Wilhite K5NK. Chuck will require that each operator have a copy of his/her license on display while operating.

CW tent Mgr: Ken Burdick K5UAB 681-0281 needs coax;

Phone tent Mgr: Don Duck AE5N 681-0133 needs radios, batteries;

Novice tent Mgr: Dennis Musser KA5GTM 681-0937 needs coax too;

Electrical: Jim Townsend WB5VCB 632-5445 needs battery clips;

CYChandler WB5TKG 232-9005 needs spare chargers;

Tables/chairs/pencils /paper: Bill Sites KA5AFD 634-8857

advised the chairs are metal; bring your own cushions;

Logs/dupe: Clara Storm WD5KFT 495-6228 needs an original,

blank dupe sheet to make sufficient, quantity copies;

Food/drinks: Kay Northcutt WD5DYJ 842-1086 requests donations of either goods or funds to buy ice and soft drinks or advises to "bring your own;"

Publicity: Jim WB5VCB said his neighbor is making signs, and with the help of Dennis KA5GTM will ask SOCJC to aid in reaching the media;

Technical advisers this year are Bob Kelley W5VZU 632-8433 and Coy Day N5OK 691-1194.

Coordinator is Dick Baker WB5TMW 685-2867.

The club took a break for refreshments from 7:57 to 8:20.

Alternate field day site is the Air National Guard Base.

The program presented by Bob Pace WA5CJG, President of the Aeronautical Center Club was a description of the proposed Oklahoma Repeater Interconnect System (ORIS) beginning with a combined VHF-UHF link between Altus, Cement and Oklahoma City and variety of available control functions. Bob also included a description of how the system works in Texas and between there and California.

The club adjourned for the aftermeeting at 9:30.

Next meeting is 7 pm 8 July same place, CU there ?

Jim N5BEQ
Secretary

SILENT KEY: Fred Miller, WB5WLS, born Feb. 1913, died May 1980, interred at Greenwood, AR, resident of Del City; R. I. P.

Hey! I still have those crystals for sale identified in last month's C&E, page 42, whatsay ? Jim N5BEQ, 236-0368

FOR SALE: ICOM 21 containing 64, 79, 88, 82, 94 and 52, 94, and 76 simplex. If interested contact Jerry Bryan, WB5LTU, Tipton, OK, 667-5366.

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W5JJ

Archaeologist: a person whose career lies in ruins.

After explaining the meaning of the word "responsibility" to the class, the teacher asked the group's most precocious pupil to use it in a sentence beginning, "My responsibility at home . . ."

"My responsibility at home," repeated the lively youngster, "is to get out and stay out."



Teacher: "Name some of Thomas Edison's contributions to science."

Student: "If it weren't for Edison, we'd all be watching television by candlelight."

A very poor man owned a small laundry next door to a very successful restaurant. Each day at lunchtime, he took his crust of bread and sat right next to the restaurant's kitchen door so he could sniff the appetizing aromas while he ate his own meager meal.

Finally, the restaurateur sent the laundryman a bill, "For the smell of my food."

The next day, the poor man walked into the restaurant carrying a small moneybox, which he rattled in the ear of his prosperous neighbor.

"Observe, my friend," he said. "I pay you for the smell of your food with the sound of my money."

One IBM card to another: "I'm fed up with your 'holier than thou' attitude!"

A little girl sitting in church with her father suddenly felt ill. "Daddy," she whispered, "I have to throw up." Her father told her to hurry to the restroom in the parish hall.

Less than two minutes later, the child was back. "I didn't even have to leave the church," she explained brightly. "There's a little box by the door that says, 'For the sick.'"

Marriage teaches you loyalty, forbearance, self-restraint, meekness — and a great many other qualities you wouldn't need if you had stayed single.

"I've been running boats on this river so long I know where every sandbar is located," the steamboat pilot boasted.

Just then, the boat struck a submerged snag with a loud crunch.

"There!" said the pilot triumphantly. "There's one of them now!"

An artist can change the expression on a face with a single stroke of the brush. But then, so could our mothers.

When Jimmy came home from the Christmas party, his mother asked him how it was.

"Really neat," he replied. "But a funny thing happened: They must have run out of napkins, 'cause they had to use pieces of cloth."

Supermarket: where you spend 30 minutes hunting for instant coffee.

Some people blame all of today's problems on high-powered automobiles, jet planes, computerization and such. Why not take the more fundamental approach — like who was the wise guy who invented the wheel?

Snow can cause a heart attack. If you doubt it, just ask the kid next door what he'll charge to shovel your walks!

"Waiter," said a diner who had just taken a bite of his meat, "these veal chops certainly aren't very tender."

"Sir," replied the waiter, "I used to be a butcher — and I can tell you positively that less than a month ago those chops were chasing after a cow."

"That may be," the customer grumbled. "But not for milk."

Cinderella: "Godmother, do I HAVE to leave the ball at midnight?"

Fairy: "If you don't stop swearing like that, you won't even get to go!"

An enthusiastic constituent showed no sign of leaving the busy legislator's office. Finally, attempting to be tactful, he rose and said, "I think I heard a quorum call."

"Oh, is that what you call it?" the visitor said. "I've noticed all the lovely birds you have around here!"

Shin: device for finding furniture in the dark.

Emerging from the dentist's office, little Judy announced, "He's not a 'painless dentist' like you said he was."

"I'm sorry," her mother answered. "Did he hurt you much?"

"Naw," the child shrugged, "but he yelled when I bit his thumb."

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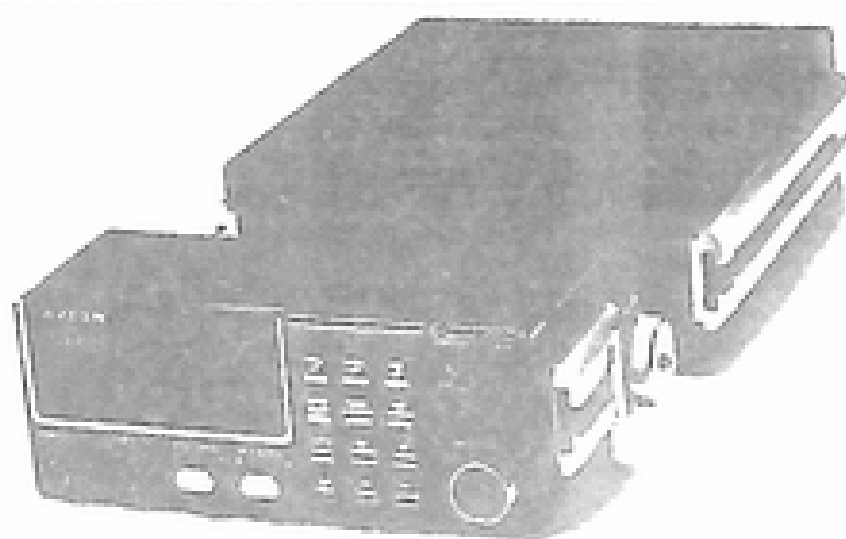
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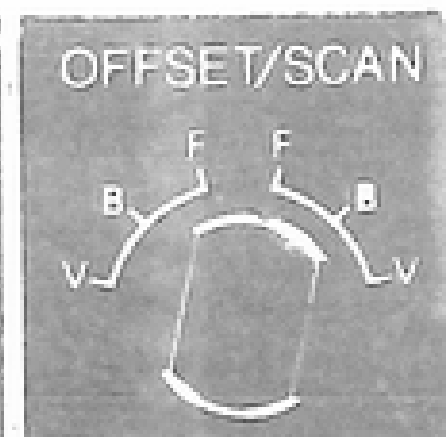
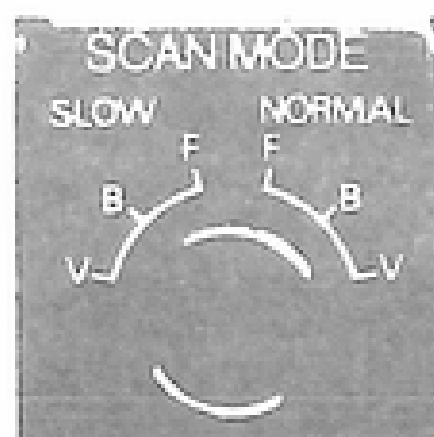
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JULY HAM HAPPENINGS 1980						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		MORI GREAT 1 PLAINS	2	3	INDEPEND MAC E (4) DAY	5
WHEATSTRAW 6	EDMOND CLUB 7 TAI- CITY	76ers SHAWNEE 8	9	ALTUS 10 ATVS	ACARC 11	12
13	CHOCTAW 14 AFMARS	AUTIPATCH 15	16	KAY 17	VHF 18	SCARS 19
EAR S 20	ARE'S 21	SHAWNEE 22	23	VEDIT C+E 24	25	26
27	28	29	30	31	AUG 1	VHF MAILS 2. C+E

NOTE: CHECK CLUBS SECTION FOR ACCURACY OF ABOVE. JOE WASENF

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(Price does not include professional services of an examining optometrist or physician)

Fee #2
Disinfection System 30.00
(Includes case and supplies)

Fee #3
Vision Exam 20.00
(If patient has no written prescription)

Result
Grand Total \$189.95
(Bring written prescription - save fee #3)

"Doc" WA5CZN
840-1234
NO APPOINTMENT NECESSARY

Dr. Robert Goodhead
Optometrist, Inc.
2821 N.W. 57th St.



AND
ARRL
STATE
CONVENTION

LINCOLN PLAZA FORUM
4345 NORTH LINCOLN BLVD OKC

JULY 25-26-27

DEALER - EQUIPMENT DISPLAY
SEE THE LATEST EQUIPMENT AND MEET THE DEALERS

TECHNICAL PROGRAMS
INTERESTING AND TIMELY TOPICS - HF, 2 METER, RTTY, COMPUTER, QRPP ????

DOOR AWARDS GALORE

QCWA BREAKFAST~EYEBALL QSO'S
COME PREPARED TO SEE YOUR OLD & NEW FRIENDS

SUNDAY BANQUET & AWARDS DRAWING
GOOD FOOD - GOOD AWARDS

10,000 SQ FT FLEA MARKET

Free table to pre-registered
Hams. (Not commercial)

You must register. Pre-register \$5.00 for each person 12 years or older.
(\$6.00 at door). You must wear issued badge for entry to any function or
area. Children under 12 must be accompanied by a parent.

PRE REGISTRATION AWARD -



ICOM

260

GRAND AWARD - YAESU



FT 707

**LADIES
FULL-TIME
PROGRAMS**

PRE-REGISTRATION FOR OKLAHOMA HAM HOLIDAY '80 & STATE ARRL CONVENTION

Must be received by July 18, 1980 to be eligible for Icom 260. Tickets
will be held at registration desk. Send s.a.s.e. if confirmation wanted.

Name _____ Call _____
Street _____ Please print
City _____ State _____ ZIP _____
Others _____
Others _____

_____ Total pre-registrations	@ \$5.00	_____
_____ Sunday Banquet tickets	@ \$8.25	_____
_____ QCWA Breakfast tickets	@ \$6.00	_____
_____ (Tax and tip included.)	Total	_____

Reserve me a free Flea Market table (Must be claimed by 10:00 am) ☐
Check or money order only TO: CORA, P.O. Box 20118, Okla City OK 73120