

AN INFORMATIVE MAGAZINE  
PUBLISHED MONTHLY BY AND  
FOR OKLAHOMA RADIO  
AMATEURS  
AND ANYONE INTERESTED IN  
LEARNING ABOUT IT

Central Oklahoma Radio Amateurs  
COLLECTOR AND EMITTER  
SINGLE COPY 25¢

Volume 4

JULY 1978

Number 42



WHEREAS, the State of Oklahoma recognizes the valuable services performed by thousands of its residents who are licensed operators in the amateur radio service, who are largely self-disciplined, and who over a period of many years repeatedly have demonstrated their capability of providing reliable and highly valuable communication services in times of natural disasters or other emergencies; and

WHEREAS, in close collaboration with the Red Cross, radio amateurs have provided both the equipment and the skilled manpower needed to transmit official communications and messages relating to health and welfare; and

WHEREAS, radio amateurs affiliated in a voluntary capacity with the Army, Navy, Air Force, and Coast Guard provide a back up to and an expansion of the communication facilities of those services, and in addition, form a valuable reservoir of pre-trained technicians and communicators; and

WHEREAS, the many intrastate and interstate communications networks operated daily by amateurs provide free message service to the public and training for enhancing operator proficiency and for maintaining equipment in operational status; and these radio amateurs have qualified for and have merited their operating privileges by demonstrating their technical qualifications to the Federal Communications Commission; and

WHEREAS, radio amateurs as dedicated experimenters have contributed appreciably to the technical development of electronic communication from the early days of "wireless" to the present day use of communications relay satellites in earth orbit;

NOW, THEREFORE, I, DAVID L. BOREN, GOVERNOR of the State of Oklahoma, in recognition of past services and in confident anticipation of continuing valuable service, do hereby proclaim July 23-29, 1978 as

AMATEUR RADIO APPRECIATION WEEK

in the State of Oklahoma.

*In Witness Whereof, I have hereunto set my hand and caused the Great Seal of the State of Oklahoma to be affixed.*



*Done at the Capitol, in the City of Oklahoma City, this 23 day of July, in the Year of Our Lord one thousand nine hundred and seventy-eight, and of the State of Oklahoma the seventieth year.*

*Jerome V. Byrd*  
SECRETARY OF STATE

*David L. Boren*  
GOVERNOR

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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	Bob Ashby	W5HXL	942-5375
Vice President	Frank Arnold	W5PDH	737-2582
Treasurer	Ken Burdick	K5UAB	681-0281
Secretary	Zack Zackery	WB5QTI	

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BIARC	Edie Day	WB5YHG	691-1194	OKCAP	Joe Hustak	WA5ZNQ	789-8587
ALTUS	Janice Simms	WB5WMN	477-0921	MORI	[Need one]		
OUARC	[Need one]						

# PARTICIPATING CLUBS FOR CORA COLLECTOR & EMITTER:

**AERONAUTICAL CENTER AMATEUR RADIO CLUB**  
 Postal station 18, Okla Coty OK 73169  
 MEETS: 8:00PM First Friday each month  
 Flight Standards Bldg, FAA Aero Center

Pres	Robert Graham	WB5NSV	677-8685
V-P	Robert Runyon	W5JES	373-1818
Sec/Tr	Bill Oliver	K5KRD	329-6333
Assist	Paul Asplin	WA5HTL	685-6590

**MID-OKLAHOMA REPEATOR**  
 MEETS: 8:00 PM Tuesday, first full week in month. Okla City EOC, 4600 N Eastern

Pres	John Huckaby	K5QDR	672-4706
V-P	Bill Rogers	WA5RAQ	632-4375
Sec/Tr	Richard Zanni	WB6FYL	691-1809
Dues:	Sid Gerber, 829 Bouse, MWC 73110		

**OKLAHOMA UNIVERSITY AMATEUR RADIO CLUB**  
 MEETS: 1st & 3rd Tuesday, 8:00 PM  
 Student Union, Room 161

Pres	Kenny Hutchison	WB5RXZ
V-P	Kirk Kirkland	WB5MJM
Sec	Nathan Kirby	WD5GWG
Treas	Mike Salem	N5MS

**BICENTENNIAL AMATEUR RADIO CLUB [76'ers]**  
 MEETS: 3rd Tuesday each month, 7:00 PM  
 Air National Guard, Will Rogers Airport

Pres	Ken Burdick	K5AUB	681-0281
V-P	Dick Baker	WB5TMW	685-2867
Sec	Mark Northcutt	WD5DYI	842-1086
Treas	Joe Ramage	WB5TDW	685-4814

**OKLAHOMA CENTRAL AMATEUR RADIO CLUB**  
 323 NW 10th, Okla City OK 73103  
 MEETS: 8:00 PM third Friday each month.  
 American Red Cross Bldg, 10th & Hudson

Pres	Ken Ford	WB5KHU	528-8770
V-P	Al Prince	WB5KCU	
Sec	Joe Buswell	K5JB	732-0676
Treas	Ellard Foster	W5KE	789-6702

**OKLAHOMA CITY AUTOPATCH ASSOCIATION**  
 MEETS: 7:30 PM 3rd Tuesday, Monthly  
 Oklahoma Military Academy 36yh & Grand

Pres	Jim Denman	WB5OEL	681-6048
V-P	Joe Hustak	WA5ZNQ	789-8587
Sec/Tr	Hobe Burgan	WB5MLN	751-1646

**CENTRAL OKLAHOMA RADIO AMATEURS**  
 MEETS: 7:30 PM, 4th Wednesday, Red Cross Bldg., 10th & Hudson. Alley entrance.

Officers are listed above.

**ALTUS AREA AMATEUR RADIO ASSOCIATION**  
 MEETS: 2nd Thursday, 7:30 PM  
 North Main Fire Station [CD]

Pres	Bob Bratton	WD5BBW	782-3073
V-P			
Sec/Tr	Janice Simms	WB5WMN	477-0921



HAM HOLIDAY PROGRAM SCHEDULE

SATURDAY

9:30 - 10:20	DXPEDITION TO ST. MARTIN - W5AT
10:30 - 11:20	VHF DIRECTION FINDING - WB5SXG
11:30 - 1:20	LUNCH BREAK
1:30 - 2:00	LT. GOVERNOR GEORGE NIGH
2:10 - 3:00	ELLEN WHITE, W1YL
3:10 - 4:00	MICROPROCESSORS -WA5LFN

SATURDAY NIGHT

6:30 - 8:00	EYEBALL QSO'S IN CONGRESS ROOM
8:00	VOCAL OKIES
8:45	ARRL FORUM

SUNDAY

7:30	QCWA BREAKFAST
9:30 - 10:20	2 METER DX BEYOND THE REPEATER - K5MB
10:30 - 11:20	OKLAHOMA REPEATER SOCIETY

ALSO (IN BLUE ROOM)

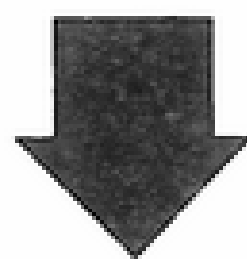
SATURDAY (ALL DAY) COFFEE

SUNDAY 9AM	START TRANSMITTER HUNT - WB5SXG
10AM	AMATEUR TV - WA5CZN

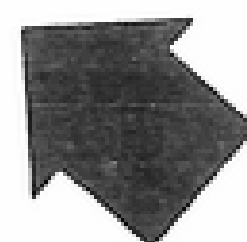
AND (IN SENATE ROOM)

SATURDAY ALL DAY AND SUNDAY MORNING - PROGRAMS FOR THE LADIES.

IT'S A STATE ARRL  
CONVENTION - TOO!



IF YOU ARE GOING TO STAY AT LINCOLN PLAZA INN, FILL OUT  
THE CARD AND MAIL IT RIGHT AWAY. NO POSTAGE REQUIRED.  
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BY THE TENTH, OR BETTER YET, MAIL IT TODAY!





ALTUS AREA  
AMATEUR RADIO  
ASSOCIATION

President - Bob Bratton, WD5BBW

Sec/Tres. - Janice Simms, WB5WMN

The ALTUS AREA AMATEUR RADIO ASSOCIATION met Thursday, June 8, 1978 at the North Main Fire Station. 19 members were present. President Bob Bratton called the meeting to order. The treasurers report was given.

Dwight Dennis, WB5KRH, (President, Southwestern Repeater Association) reported on the latest repairs to the local 19/79 repeater, WR5ANX. A new final amplifier board from GE was installed late in May which replaced the one destroyed by the lightning. On Jun 3, Don Hayes, WB5NRQ: Chuck Smith, WB5MJS and Dwight installed a new Rohn 25G tower top section to replace the one damaged by high winds. The new section has been especially modified and strengthened. A special thanks to Lloyd Gilliam, husband of WB5PMG for all his work and time. Dwight also informed the group that a new repeater on 146.25/85 with 1 watt output is located at Memphis TX.

As Jackson County Emergency Coordinator, Dwight reported that the weather watches have been working smoothly. Fortunately, there has not been any serious weather in our immediate area so far this year. (Dwight threatens practice watches for 3:00 AM just to keep in practice.)

Chuck Smith, WB5MJS reported on Field Day preparations. The location will be at Jerry Bryan's, WB5LTU: near Tipton OKLA. The call of the station will be W5KI (Steve Norris). Several people have worked to put this event together. Further information may be obtained from Dave Horn, KØJPX: Steve Norris, W5KI: Richard Spencer, WB5PUF or Chuck Smith, WB5MJS. Anyone interested in meeting with this group may do so at the Friendship Inn, 7:00 p.m. on June 19. They will make the final plans to set up a schedule of operators and loggers. Setting up the station will begin at 9:00 a.m. Saturday morning, 24 June at the Field Location. Bands expected to be in operation will be 160 - 80 - 40 - 15 - 10 - 6 - 2M FM and SSB. More CW operators are needed. [Note: LTU says to bring five gallons of insect repellent.]

Instructor Chuck Smith reported on the Novice classes held last spring & summer. Six hopefuls have taken the written exam. Best of luck to all of them.

Loren Simms, WA5CBF reported that the crystal for the Metrum II has been ordered from Sentr, however it has not arrived. It will be placed in the Metrum II at the Emergency Operations Center to provide a health & welfare station in case of an emergency situation.

Congratulations to Bob Bratton, WD5BBW & Jerry Rochelle, WB5MMM on their upgrade from Tech to General. They went to Dallas on 5 June and made a record time - they started the test at 8:30 and finished at 8:37. (There are rumors that MMM will try for Advance and Extra, soon. Good Luck...)

A presentation and discussion of Oscar 7 & 8 topped the program. Loren showed the latest information from the ARRL - "OSCAR and the HAM". This is a 30 min video tape program. (A special thanks to the Firemen for use of their color TV.)

Dave Horn, KØJPX, told his experiences in presenting an OSCAR Educational demonstration to the science classes at Northeast Junior High School. Thank you to the ANSTAT and ARRL headquarters for their help. (A note to the wise: Dave warns that a demonstration such as this is not for the inexperienced beginner to OSCAR.)

Next on the agenda was the discussion of the Oklahoma HAM HOLIDAY & State ARRL Convention to be held July 29 & 30 at the Lincoln Plaza Inn, Oklahoma City. Dave suggested we all pool our goodies for the swap tables.

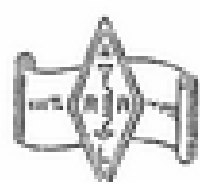
Dues were paid by Bob Bratton, WD5BBW: Chuck Nichols, WB5BBN: Richard Spencer, WB5PUF and Gene Gunkle, WB5NYG. Next meeting will be July 13. Hope you can attend.

Loren Simms, WA5CBF [acting secretary]

FOR SALE: Tempo I (\$350.00) Contact Ivie Shaw, W5VQS, Box 300, Gotebo OK 73041.

FOR SALE: Heath Handi-Talkie W/5 crystals, VHF Engineering Amplifier, 1 W in 25 W out. Both for \$225.00. Robert Dinsmore, WB9OEZ, 787-4144.

FOR SALE: ICOM IC-22A, crystallized for 8 local frequencies. Excellent condition. Asking \$200.00. Jim, WA5LKS, 672-5248 or 672-1371.



W5PAA

## AERONAUTICAL CENTER AMATEUR RADIO CLUB - PAST & PRESENT

It really had its beginnings in Ft. Worth, Texas, with a group of instructors at the Civil Aeronautics Administration Signals Training Center, under the direction of Claude E. Gardner, W5AGM. Two of the instructors, Carl C. Drumeller, WOEHK, and John Ott, W5HEW, with the blessing of W5AGM, set up a Collins Model TDO and a National RCK receiver just as soon as the amateur HF bands were reopened after the war, in 1946. Quite a number of contacts were made under the call WOEHK/5 before the Signals Training Center was moved to Oklahoma City to become a portion of the newly constructed Aeronautical Center. Soon afterwards, the three originals were joined by Walter M. Hill, W5HXT, and all labored to get the equipment set up again in Building 10, where it was operated for a while under the call of W5EHK/5. During this time the employees of the new center met and organized the CAA Employees' Association, and further agreed to have that parent organization sponsor a number of special interest clubs to cater to the many varied interests of the 240 employees. At that time the CAA Radio Club was organized and applied for a club license. The application was promptly bounced back by the FCC with the note that the identification of a government agency could not be used in an amateur radio club. A new try was made, with the name changed to the Aeronautical Center Radio Club. This, too, was bounced, as it did not spell out that it was an amateur club. The third trial clicked, and W5PAA was issued to the Aeronautical Center Amateur Radio Club.

As more and more club members were added to the roster, W5PAA became a well-known call on the amateur bands. Most of its usage came from students at the various schools, who found it a most pleasant means of keeping in touch with their homes while attending center classes.

W5PAA found no difficulty in qualifying for such honors as Worked all States, and Worked all Continents. For some years it served as the control station for a Civil Defense net, and it has taken part in numerous Simulated Emergency Tests and many Field Day exercises.

The Club became affiliated with the American Radio Relay League, Inc., soon after its formation. After a few years it was voted to make it a "100% League Club"; Since then, Club dues have also included League membership.

For quite a number of years, the Club was financial sponsor of the bookstore at the Aeronautical Center, and later it sold the store to the larger Employees' Association.

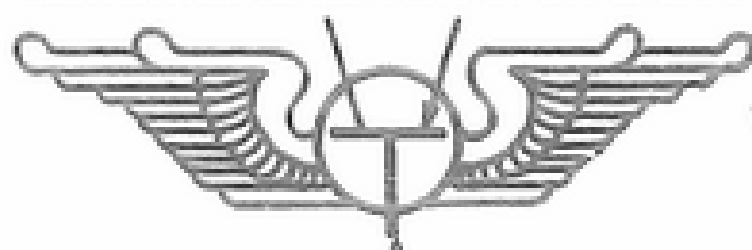
Progress in the form of renewal of old buildings forced the abandonment of the old station site in Building 10. It was relocated in the "H and I" Building, and later in the Flight Standards Building, where it has been for several years.

Equipment for the Club Station has been constantly updated, with the most recent addition being a VHF repeater and remote operating location. The HF bands remain extremely active through the use of the Club's Kenwood "Twin" and Drake TR-4C operating stations.

Membership in the Club is open to any licensed amateur, and meetings are held the first Friday of each month at the Club Station. Annual dues are \$13.50, which include ARRL dues. (with QST subscription) Students or other FAA transient personnel may become "Affiliates" for \$1.00; this permits them to avail themselves of the use of the Club station, but not participate in the club affairs.

Special thanks to Carl Drumeller, W5JJ, for providing most of the background information above.

73, Bob, WB5NSV



W5PAA

## Minutes on the Aeronautical Center Amateur Radio Club June, 1978

The meeting was called to order by President Graham at 8:02P.M. There were 38 members and guests present. After a round of self introductions, President Graham announced the the repeater is on and operating on 146.25 - 146.85. He also said that if you use the repeater it will be necessary that you identify for the repeater as the id boards have not been installed yet but should be shortly. He also announced that bids are being taken until the July meeting on the Telrex rotor and indicator and also on the portable generator that is located on a trailer which also is included. It was also requested that some volunteers were needed to help with the large mailing of the C.&E. next month. Also, a show of hands was asked for to see how many were willing to take a 4 hour shift at the Amateur Radio booth that is planned for the state fair. There was a good show of hands for this. It was also, announced that the August meeting of the ACARC would be cancelled due to the close proximity of Ham Holiday. It was agreed to have a joint watermelon feed with the Central Okla. Amateur club on the third Friday of August. George, W5NTL, gave the CORA report. He also reported the VSWR on the club beam is a little high so he is checking on getting a broucher on the beam for making some adjustments. The club is looking for some 440MHZ equipment for repeater control. If anyone is aware of the availability of this equipment, please give Bob Graham a call. Bob Pace, WA5CJG, gave a very interesting program on repeater control. He also passed around some of the boards that he has completed that will be going into the W5PAA repeater. Besides giving a very interesting program, Bob is very good with the soldering iron. He does very good work. Thanks for a good program, Bob. The meeting was adjourned for refreshments at 9:10 P. M..

Respectfully submitted

Bill Oliver K5KDR sec. &amp; tres.

### RANDOM WORDS FROM THE PRESIDENT

By the time that this issue reaches you, Field Day '78 will be a thing of the past. Charlie Greene, WA5JGU, tells me that "we're as ready as we'll ever be." So, I trust that we all had a good time (Hi). A full report will follow in next months issue of the C&E.

It's time now for each of us to look forward to Ham Holiday '78, and ARRL State Convention at the Lincoln Plaza Forum. My wife and I plan to attend all of the activities that we possibly can, and we are looking forward to seeing each of you there.

I would once again like to thank Bob Pace, WA5CJG, for presenting an excellent program at the June meeting. Everyone enjoyed his presentation, and we all greatly appreciate his efforts toward finishing our repeater installation.

Our July meeting will feature Zack Zackery, WB5QTI, who will present an ARRL film which should be of interest to all. Also at the July meeting, bids will be opened for the Telerex Antenna Rotator & indicator. Due to a recent change of plans, the PE-75 Power Generator will not be sold at this meeting. I'm very sorry for any problems or inconvenience that this change may have caused.

As a final note, the W5PAA repeater is alive and well on 146.25-.85 MHz. This is an open repeater, and everyone is invited to make use of it. We ask only that users identify the repeater, as well as themselves--until additional circuitry can be completed.

See you at Ham Holiday '78.

73 Bob Graham, WB5NSV

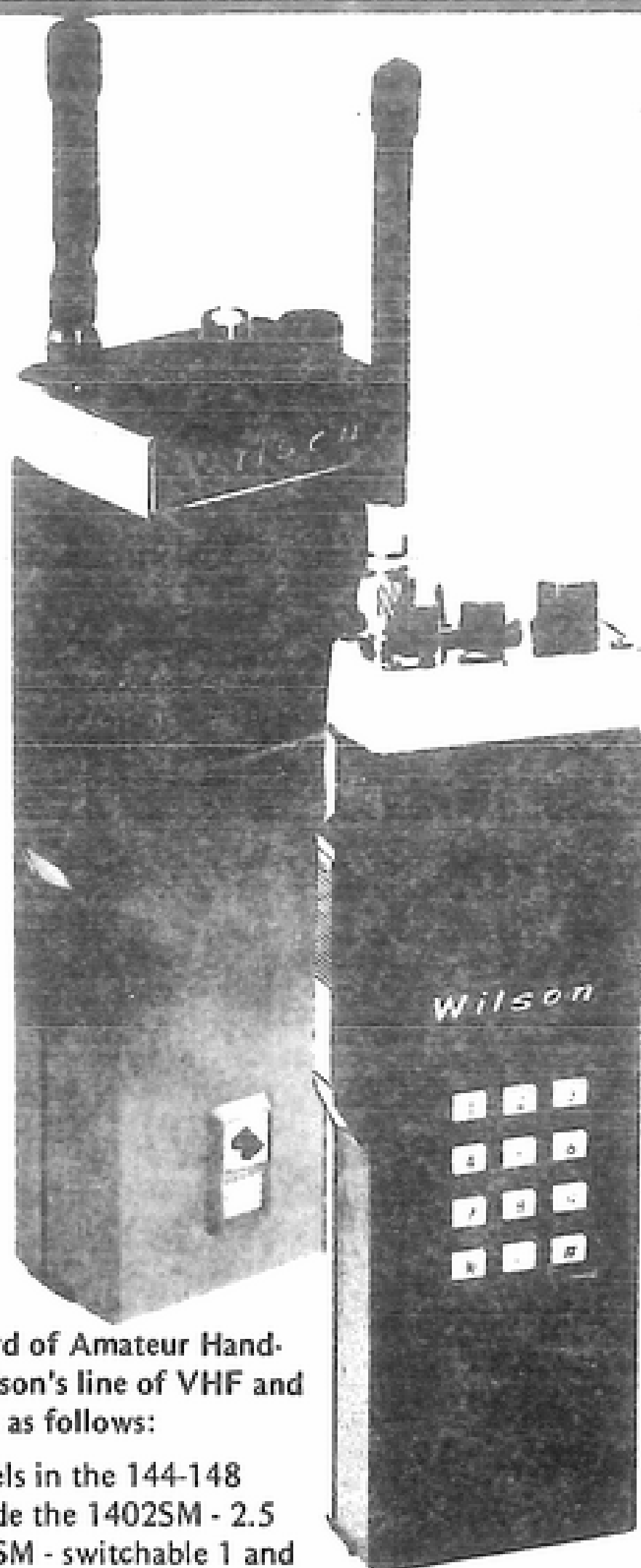
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Illustrated above is 1405SM with optional Touch Tone Pad (Models 4502 and 2202 have similar appearance).

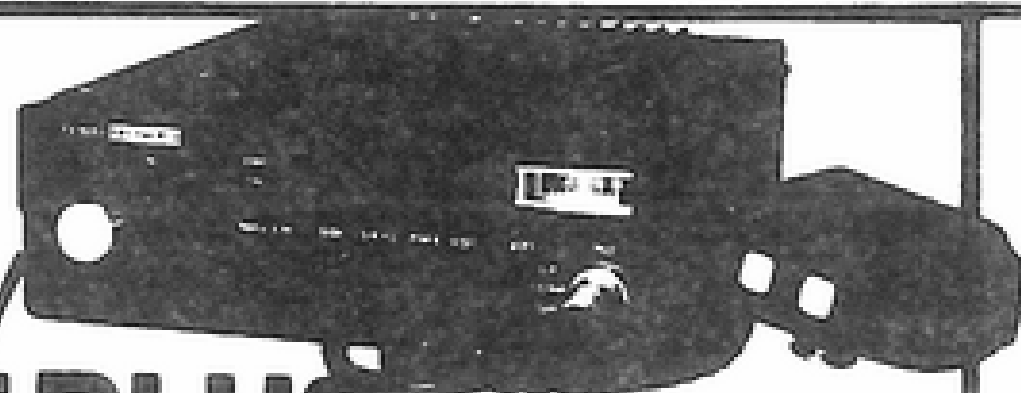
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## AMATEUR RADIO TECHNIQUES, Sixth Edition

Each month, Radio Communication, the publication of the Radio Society of Great Britain, contains a section called Technical Topics. Its editor, Pat Hawker, G3VA, culls magazines and other publications, commercial and amateur, from all over the world. From these, he selects the most intriguing, the most challenging for comment. His section, as you may well imagine, never lacks interest. Without exception, in it you'll find something that'll make you think "Hey, I'd like to try that someday." And when that "someday" comes around, you'd have to thumb through your stack of magazines (if you can find them) in an oft-fruitless search for that old issue.

To get around such frustrating situations, the RSG-B prints (about every other year) a compilation of the gems from Technical Topics. The book is called Amateur Radio Techniques. The newest one, the sixth edition, has 336 pages, a real handful of ear-perking ideas. The section headings provide a clue as to its contents. Here they are: Semiconductors, Components and Construction, Receiver Topics, Oscillator Topics, Transmitter Topics, Audio and Modulation, Power Supplies, Antenna Topics, Fault-Finding and Test Units; to this add an appendix containing, among other things, a list of the intermediate frequencies of just about every radio receiver known to mankind.

It's a good book. Not just a good book, but a damn good one. If you're an amateur of radio communication and technology, you're bound to find a host of fascinating ideas. New ideas, old ones revived for a today application.

The subsections titled "Quick Guide to HF Antenna Gain" and "Quick Guide to VSWR Facts and Fallacies" should be required reading (no studying) for every person who likes to talk about antennas.

Of course, no reviewer worth his salt will let a publication pass by without finding something to bitch about. I'm no exception. I think Pat Hawker retained too much obsolete material relating to Amplitude Modulated transmitters. And he included too little on frequency converters. But he did a beautiful job on 99% of his selections..... he even quoted this writer on one matter.

HAM RADIO magazine's bookstore stocks RSG-B publications. As yet the USA price (it's 3 pounds 20 pence in England) is unknown. But whatever it is, you can bet it's worth that price. Buy one.

W5JJ

=====

FOR SALE: Coaxial switch, single pole three throw with Type N connectors, Made by Thompson Products, Inc. Requires 28 V DC to actuate, with a 4-wire control cable. Suitable for outdoor mounting. \$40.00. Available after 5 August from W5JJ, 5824 N.W. 58 St., Warr Acres, OK 73122. Phone (405) 789-3788.

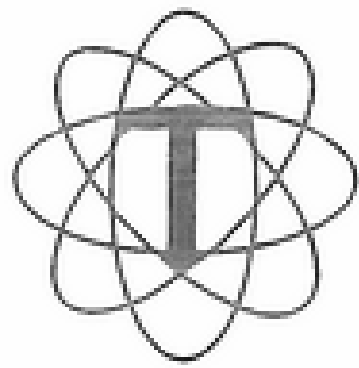
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FOR SALE: Drake TR-3, RV-3 Remote VFO, AC and DC Power Supplies \$425, Drake 2-B Rcvr \$175, Knight T-150 Xmtr 80-6 mtr AM and CW built-in VFO \$35, Lafayette HE 45B 6 mtr AM W/HE61 VFO \$20, MFJ CW Filter \$20, Sam Barrett, 364-5915, WA5RPP

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FOR SALE: 3 element - 20 meter monoband beam antenna. Call 681-9371.





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July 1978

-11-

CORA Collector & Emitter

## "BIG 'D', MY OH YES" DEPARTMENT

Dallas is convenient. It is, of sorts, your basic large metropolitan area in a quaint southwestern setting. There are all kinds of goodie stores that exist in Big "D" including some of the better surplus houses around. It even has a TV program named after it (though I don't hear them talk about all the great places to surplus, harumpp!) It is an ideal place to have a hamfest, but there haven't been any in recent years. Perhaps, the monthly sidewalk sales keep the local population's appetites satiated for flea markets. I don't know. But a group of Dallasites (is that what they call them?) decided to turn that around and thus was born Ham-Com 78, June 17 & 18 at Dunfey's Royal Coach Inn. And after all the dust had cleared, it wasn't a bad effort for a first time outing. The Flea Market was nothing to brag about and the exhibits somewhat limited, it was still nice to catch.

Joe, K5HMD; Joe, K5JB and myself decided to avoid the rush to Ham-Com and plan a quickaerial sortie on Saturday morning, then dash back that evening. As Hamfests usually go, we find things generally quieting down on Sunday, so by planning ahead, we break out a little early. This must have occurred to the HamCom committee since Dunfey's Royal Coach Inn is located very strategically next to Love Airfield. We were up and into the 172 by the crack of dawn and (as Joe says) wheels up at 6:30 a. m. I was none the worse for the wear and feeling a little thin since I stayed up late on Friday nite fixing a balky walkie talkie that refused to transmit for extended periods of time (Success! I found a shorted capacitor in the IDC circuitry). Conditions were marginal VFR (to me), but Joe expressed a lot of confidence that we would have no problem, except for the 20 mph headwind, so I decided to forgoe my usual Dramamine cocktail for such occasions (a glass of milk and two Dramamines). This almost was a mistake, but I managed to hold on as we made a very bumpy approach to Love Field. On the ground and we were then courtesy carred over to the Inn. Registration and then we headed for the flea market. There were few bargains. Some brand new batteries for HT's were the hit, but that was about all. I found some teflon tubing for a dollar a roll and a mike mixer which will probably see service on WR5AFW in the near future. The heat and humidity were rapidly becoming unbearable, so we quickly surveyed the grounds (hum, Colorado Silver was there with their neat call letter belt buckles. K5JB has one, so I had to get one. Managed to miss these people at Dayton) and buzzed inside.

The exhibits were open by now and the forums were in full swing. The FCC (represented by the Dallas office) conducted one forum and gave amateur exams. (The only return I know is that K5VRX passed the amateur extra with a little help from the Ameco manual. There are probably many others). One of the more interesting forums was conducted by Fred Zimring W5HTR on Amateur Radio and the Law. He discussed three areas, FCC Regulations, Antenna construction, and sanctions for TVI, then fielded questions from the floor.

Several big time exhibitors were there, including Drake, Yaesu, and Icom. The new IC-280 was present and accounted for and Kondure Company (a used computer equipment company) had a display. Texas RF Distributors was passing out "Up your Frequency" buttons to encourage the purchase of their nifty microwave modules and linear transverters. I said hello to Wayne Green who wasn't at Dayton this year and he still remembers his trip to Oklahoma University many years back and reminded me of the Telegraph key on a plaque that we gave him that still hangs on his wall (Wow, I forgot). That Sherry Smythe who works for him is a cutie. Atlas and DB Products were there as well as Hy-Gain (now under new management). Hal Communications, Heathkit, Long Electronics (all the way from Alabama with a banjo on their knee), KLM, Optoelectronics, Ramsey Engineering (They have a nifty counter and a device for extracting the color burst signal from your television for calibrating your counter. I bought

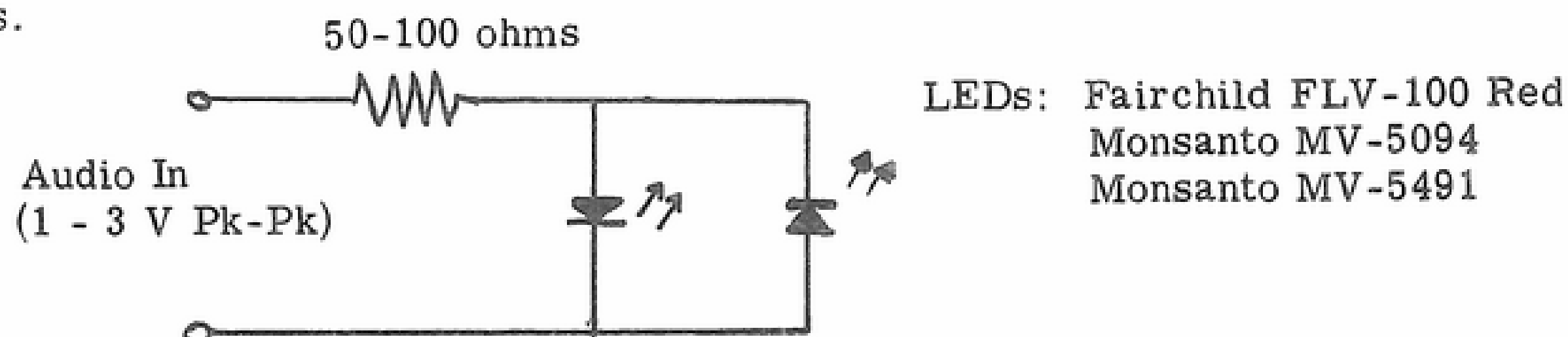
one and will try to get it working to see if my counter stability will hold), TPL, and Sabtronics (Digital voltmeters, remember?) all were displaying their wares. The exhibits area were pretty crowded and any small crowd at any of the booth would rapidly bottleneck the aisle. I don't know how they intended to crowd 5,000 people in the area.

The consensus was that HamCom did very well for a first time. However, on careful analysis, it might have seemed preordained that no more than the 2,500 attendees would show up. First, registration was high (\$6.00 at the door), some of the lesser prizes were paltry (WB5ISO drove clear across town to find that he had won a 50 ft roll of ground wire), and the flea market was barely a scratch. However, I intend to encourage the HamCom committee. There should be no reason why this can't grow into a fairly nice size fest. Optimistically, the committee has announced HamCom 79 for June 15, 16, & 17 of 1979. You might plan to attend.

Micheal Salem N5MS

### A ZERO BEAT IN TIME SAVES NINE DEPARTMENT

Having need recently for a zero beat detector in a small project, I searched the literature briefly and came up with the following circuit. The bandwidth is not of the best (on the order of + 5 hz or so), but it can quickly get you in the ball park. When you are greater than a khz away, both leds appear to be on. As they approach zero beat, the leds will flicker until zero beat occurs, then go out. The quality of the zero beat detector will be directly related to the amplifier used. If it is capable of going to zero, then you can actually determine which way the current is flowing. The resistor limits the current to the goodies, and each Led is on for half a cycle. You may want to use one of those fancy Leds that features two colors on the same substrate or you can use two separate devices.



Micheal Salem N5MS

### MICROPROCESSOR SLUSH FUND UPDATE DEPARTMENT

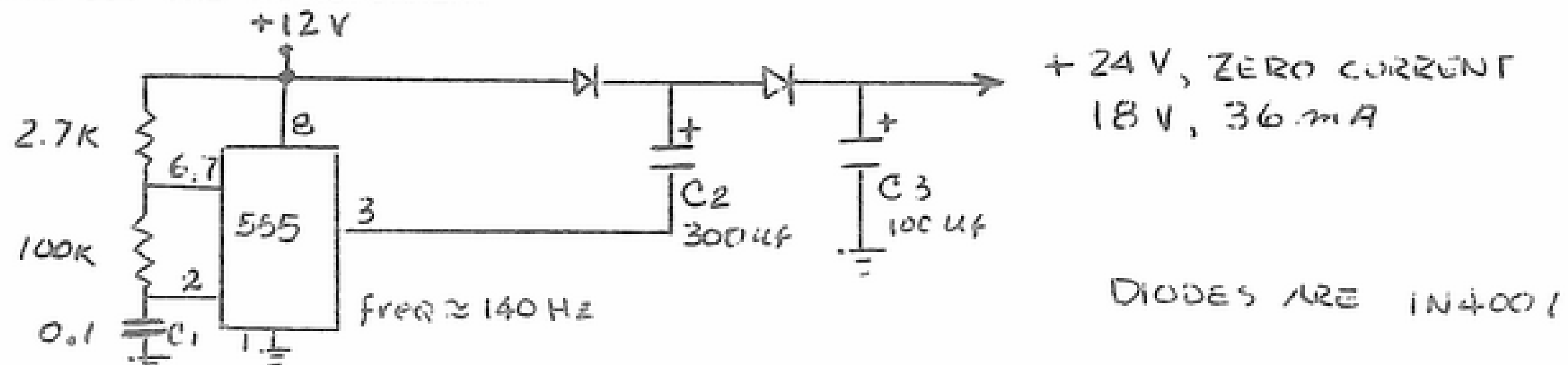
WR5AFW is in the process of acquiring a new control system using the Intel 8085 microprocessor chip. The computer will have only three chips and will be on a smallish 3 1/4 x 4 1/4 inch board. Donations to this slush fund have topped the amount necessary to purchase the chip sets with any excess used to buy the PC card and other parts. The chips (its hard to say that word without thinking of the California Highway Patrol) have been ordered and are winging their way to Norman. The 8085 is in high demand, so the delivery man is not expected for about 6 weeks. Two prototype boards have been constructed and WA5JXX has assembled a simple machine language program to duplicate the present functions of the repeater. We must say thanks to those people who sent in a little of their hard earned cash to get the chips. We are not out of the creek yet. We still could use a modern phone patch to replace the old goodie which has been on loan to these many years. This should be the first processor controlled repeater in this area. It may take awhile to work out a few bugs, but once up and running, almost anything will be possible.

Micheal Salem N5MS

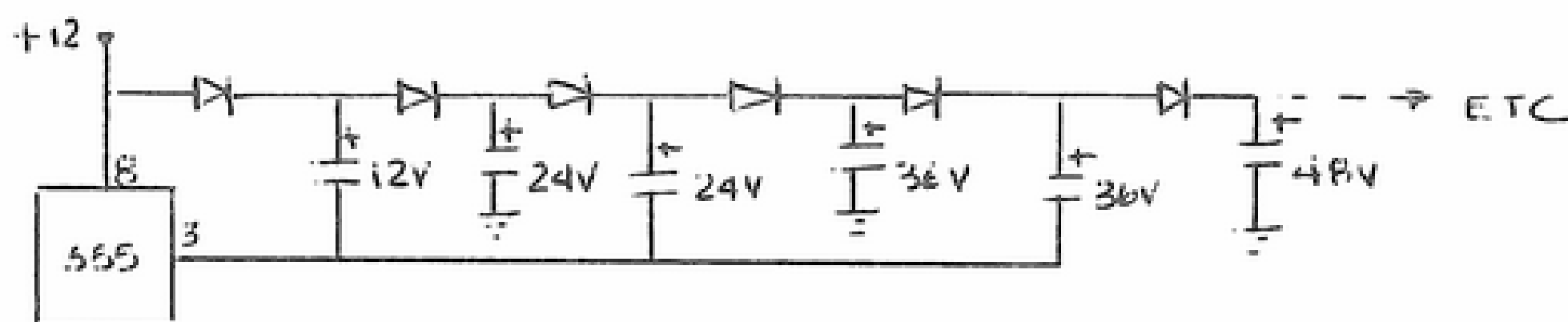


JUNE MEETING IS TO BE INFORMAL, CONSISTING OF PICNIC AND PREPARATIONS FOR FIELD DAY AT LAKE OVERHOLSER. THERE WILL THEREFORE BE NO MINUTES BUT THERE WILL BE A REPORT IN NEXT MONTH'S C & E.  
JOE, K5JB, SEC'Y

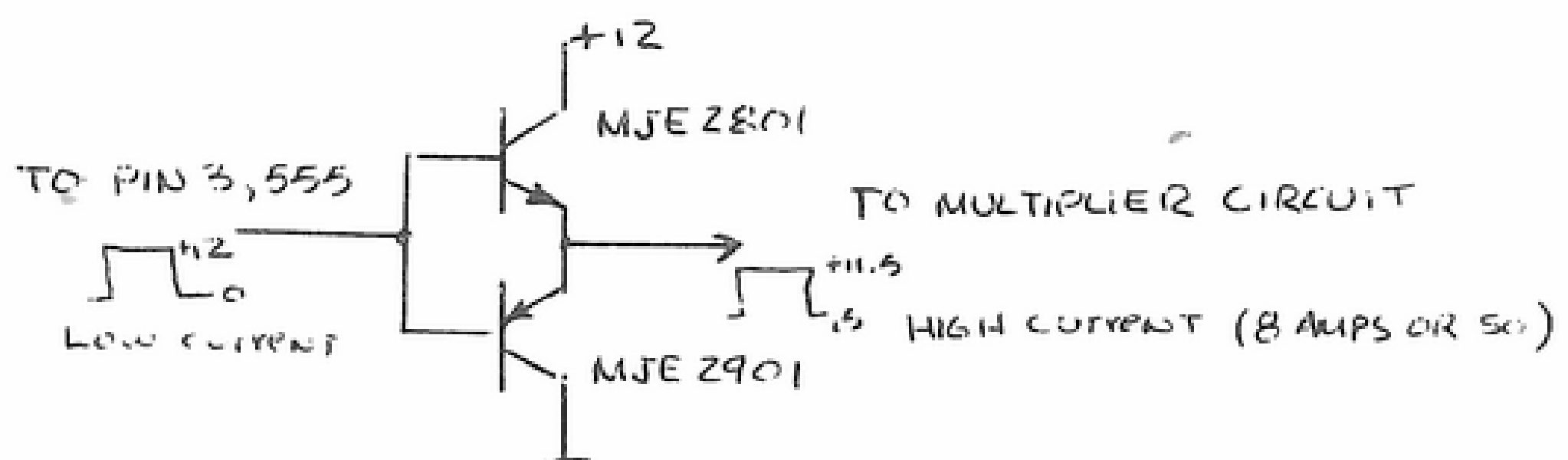
TRICK CIRCUIT OF THE MONTH. YOU SAY YOU HAVE 12 VOLTS DC, AND YOU NEED 18? THAT WHAT'S TROUBLING YOU? HOW ABOUT TRYING THE OLD VOLTAGE MULTIPLIER CIRCUIT BUT LEAVE OUT THE TRANSFORMER?



THE 555 IS OPERATING AS AN OSCILLATOR. WHEN ITS OUTPUT IS LOW, C2 CHARGES TO 12 VOLTS. WHEN THE 555 OUTPUT GOES HIGH, THE POSITIVE SIDE OF C2 GOES TO +24 VOLTS AND CHARGES C3 TO THAT VALUE. THE OUTPUT HAS LIMITED CAPACITY AND CAN BE A PRETTY RAUNCHY WAVE FORM DEPENDING ON THE LOAD, BUT IT COULD BE FILTERED AND REGULATED TO RUN SOME SORT OF GADGET. AS IT IS, IT WOULD BE FINE FOR SIMPLE CURRENT LIMITED BATTERY CHARGER FOR A NI-CAD BATTERY IN THE 12-15 VOLT RANGE. THE FOLLOWING CIRCUIT HAS NOT BEEN TRIED BUT IT SHOULD WORK FOR LOW CURRENT APPLICATIONS REQUIRING MORE VOLTAGE.



FOR MORE CURRENT CAPACITY ADD A COMPLEMENTARY EMITTER FOLLOWER TO THE OUTPUT OF THE 555.



THERE ARE OTHER MULTIPLIER SCHEMES WHICH WOULD REQUIRE FEWER CAPACITORS BUT WOULD REQUIRE ADDITION OF AN INVERTER TO PROVIDE OUTPUT COMPLEMENTARY TO THE 555. ALSO, THE NEGATIVE SUPPLY TO THE 555 WOULD HAVE TO BE DIVORCED FROM THE NEGATIVE OUTPUT OF THE MULTIPLIER. HAVE FUN JACKING THAT VOLTAGE UP!  
JOE, K5JB

FOR SALE: TS 700A 2 METER TRANSCEIVER, GOOD AS NEW, \$460.00. ALSO, HAMMERLUND SP 600 RECEIVER. \$195.00. ART, W5TPM, 732-8401.

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## HAM HOLIDAY PROGRAMS

THE FOLLOWING IS A BRIEF RUNDOWN ON PROGRAMS SCHEDULED FOR HAM HOLIDAY, JULY 29 & 30.

DX - FRANK JEROME, W5AT, AND GIL WOOD, W5NUT, WILL BE RELATING EXPERIENCES THEY HAD ON DXPEDITIONS TO ST. MARTIN AND OTHER CARIBBEAN ISLANDS. THEY INCLUDED OSCAR SATELLITE IN THEIR OPERATIONS. COME TO THIS PROGRAM AND DREAM OF VACATIONS IN THE SUN AND BLUE, BLUE WATER!

VHF DIRECTION FINDING - BILL SKIPPER, WB5SXG, KNOWN AROUND OKLAHOMA CITY AND SAN ANTONIO FOR HIS PORTABLE QUAD, WILL BE GIVING TIPS ON HOW TO LOCATE TRANSMITTERS, OVERCOMING PROBLEMS OF MULTIPATH, RECEIVER SATURATING, ETC. OTHER TECHNIQUES SUCH AS LOOPS AND HAPPY FLYERS DF UNITS WILL BE SHOWN AND DISCUSSED. AFTER THIS PROGRAM, YOU WILL HAVE JUST ENOUGH TIME TO THROW SOME STUFF TOGETHER FOR THE TRANSMITTER HUNT ON SUNDAY MORNING. I UNDERSTAND THERE WILL BE THREE TRANSMITTERS GOING SIMULTANEOUSLY. I SUPPOSE THAT IS BEING DONE TO MAKE IT THREE TIMES AS EASY TO FIND A TRANSMITTER!

GEORGE NIGH, LT. GOVERNOR OF OKLAHOMA WILL BE ON HAND TO WELCOME THE GROUP. HAM HOLIDAY, THIS YEAR, CONCLUDES AMATEUR RADIO WEEK IN OKLAHOMA.

ELLEN WHITE, W1YL, FROM THE OPERATING DEPARTMENT, ARRL HEADQUARTERS, HAS SOME WORDS FOR US REGARDING WORLD ADMINISTRATIVE RADIO CONFERENCE (WARC). THIS SUBJECT IS FAR MORE SIGNIFICANT TO US AS AMATEURS THAN ANY OF OUR PROBLEMS WITH CALL SIGNS, REPEATER LICENSING, AUTOPATCHES, ETC. SHE WILL PROBABLY ALSO GIVE A SLIDE SHOW ON HOW THE QSL BUREAU WORKS.

MICROPROCESSORS WAS SUCH A POPULAR SUBJECT LAST YEAR, WE THOUGHT WE WOULD RUN IT AGAIN. JIM KEARNS, WA5LFN, HAS DRAWN TOGETHER SOME OF THE PRO'S WHO HAVE SOME INTERESTING APPLICATIONS OF MICROCOMPUTERS IN AND AROUND THE HAM STATION.

SATURDAY NITE WILL BE A SOCIAL GET TOGETHER WITH ENTERTAINMENT BY THE "VOCAL OKIES" A BARBERSHOP QUARTET WHICH COMES TO US HIGHLY RECOMMENDED.

AFTER THE ENTERTAINMENT, THERE WILL BE AN ARRL FORUM. HERE IS A CHANCE TO DISCUSS WHAT THE LEAGUE HAS BEEN UP TO AND GET THE STRAIGHT STORY FROM NEWINGTON. THIS YEAR WEST GULF DIVISION DIRECTOR, JACK GANT, W5GM, ELLEN WHITE, W1YL, FROM OPERATING DEPARTMENT, HEADQUARTERS, SECTION COMMUNICATIONS MANAGER, LEONARD HOLLAR, WA5FSN, AND H.O. TOWNSEND, WA5MLT, OKLAHOMA STATE EMERGENCY COORDINATOR WILL BE ON HAND TO ANSWER QUESTIONS AND CARRY ON THE DISCUSSION.

SUNDAY MORNING WILL START OFF WITH A QCWA BREAKFAST. I DON'T KNOW WHAT THEY DO AT THOSE THINGS BESIDES EAT. I'M NOT OLD ENOUGH TO KNOW ABOUT THAT KIND OF STUFF. (BUT I BET THEY HAVE A GOOD TIME).

OUR LOCAL MOONBOUNCE EXPERT, MARSHALL WILLIAMS, K5MB, WILL BE GIVING A PROGRAM ON WEAK SIGNAL WORK AND DESCRIBE OPERATION ON TWO METERS USING MODES OF PROPAGATION OTHER THAN DIRECT THROUGH A REPEATER. IF YOU WONDER WHAT ALL THOSE OTHER KNOBS ON THE TS-700 ARE FOR, MAYBE MARSHALL CAN CLEAR IT UP FOR YOU.

OKLAHOMA REPEATER SOCIETY WILL BE HOLDING A MEETING AND DISCUSSING AMONG OTHER THINGS, PREFERENCES REGARDING BAND PLAN ON 144.5 - 145.5 MHZ WHICH HAVE BEEN RECENTLY OPENED UP TO REPEATERS.

DOC GOODHEAD, WA5CZN, WILL SET UP AND DISPLAY OPERATION OF AMATEUR TV. GO TO HIS PROGRAM AND YOU CAN MAKE MONKEY SHINES CLEAR ACROSS TOWN. HE TOLD ME TO BE SURE AND SAY IT IS NOT SLOW SCAN. I SHOULD SAY NOT. IF IT WAS TOO SLOW IT WOULDN'T KEEP UP WITH DOC!

ALL IN ALL, THE PROGRAM SCHEDULE LOOKS PRETTY GOOD. THERE ARE SOME CONFLICTS IN TIMING BUT YA GOTTA EAT AND SLEEP SOMETIME. JOE, K5JB

## YL'S ARE ACTIVE HAMS TOO

Recently the first YL 2 meter information net was held by the YL's in Houston TX. The net, consisting of check-ins and information and announcements, is held every Tuesday night on the 197.93/33 repeater at 9:00 PM. The purpose of this net being to promote 2 meter activity from the licensed YL radio operators and to offer encouragement to all other YL's interested in amateur radio.

Also, of interest to the YL's (either licensed or un-licensed), code tapes are aired each week night on the repeater. The tapes consist of code practice for the beginner student, with graduated code speeds following.

Presently, the Houston Area YL's are helping to plan the ladies activities for the annual VHF-FM Society Convention scheduled for August 4, 5 & 6 in Houston. As you can see, these Houston gals are active on 2 meters and want to participate in the growth of YL's in amateur radio.  
Gene, WB5SQC [Transplanted]

## A HELPING HAND FROM A FELLOW HAM

Approximately 0550 UTC, 20 May, I was driving back from a movie. While coming south on Portland to the dam at Lake Hefner I blew out a tire, and did not realize it until I was on top of the dam. It was only flat on the bottom. I opened the trunk and got out the spare and other sundr. items required - and of course it started raining. Having a faithful F.O.R.D. product, nothing would work right, however there was a thoughtful police officer that came by long enough to blind me with his spotlight then quickly drive away. I went back to the trunk and got out my trusty 2 meter rig, which was wet by now, and tried to make an autopatch but my pad was not working right, then I heard this familiar voice come on the air saying, "Bill, do you need some help?", and giving it careful consideration for about one nanosecond I said "Yes!" It was Mark, WD5DYI, and in a few minutes he hopped out of his car, walkie-talkie on his belt, lug wrench in one hand and an umbrella in the other. By this time it was raining hard. Apparently the Ford people were afraid the wheels would come off, because it looked for a while the lug nuts wouldn't come off. I grunted, Mark talked to them, and off they came. Then, I dropped my keys in the tall wet grass, but it all worked out and we were on our way.

It is hard to explain how much you really appreciate a persons help, but I was never so happy to see Mark jump out of his car, dry as a bone, into the rain to help me. I would like to take this space to sincerely thank you, Mark, and if you ever need a Tower Climber don't hesitate to call.  
Bill, WA5YGX



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## ALTUS AREA AMATEURS

[This is the first of a series of articles written especially for CORA C and E by and about various members of the ALTUS AREA AMATEUR RADIO ASSOCIATION. it is a group effort to share interesting and sometimes technical info. Loren Simms, WA5CBF]

One individual we consider an asset to our club in Southwestern Oklahoma is Dwight Dennis, WB5KRH.

Dwight is a television technician for a local TV service shop which incidentally is owned by another local Ham, Phil Whitman, WB5KPM. Dwight is a self-taught electronic expert. He majored in chemical engineering while in college. However, he put this aside and has taken up electronics and communications.

It all started in 1973 when Dwight secured his Technician license know as WB5KRH. Later he was appointed to the staff of the Altus Emergency Operations Center by Bob Mayotte, Civil Defense Director. Because of his interest, knowledge and training he was appointed Jackson County Emergency Coordinator by H. O. Townsend in 1976. Dwight is very much an asset to our Civil Defence organization in Southwestern Oklahoma. He was instrumental in securing KCR 308 Civil Defense Weather Watch equipment: 2 meter FM Motorola Metrum II and a new 11 element beam for the EOC. The newest addition to the Amateur communications section of the EOC is a complete HF Hallicrafter station.

Dwight was one of the eight charter members of the Ham Club established in 1973. He was one of the first on 2 meter FM and sponsored WR5AGT, the 34/94 repeater. This earl repeater was the grandfather of the present WR5ANX. Dwight was one of the charter members of the Southwestern Repeater Association, Inc. He serves as president of the governing board of the Charter members of this organization. He is also chief engineer of WR5ANX.

Dwight has led some pioneering firsts in communications besides sponsoring the first 2 meter FM repeater, WR5AGI. He was instrumental in transmitting fast scan TV on 70 CM and operating the first 70 CM FM repeater in Southwestern Oklahoma.

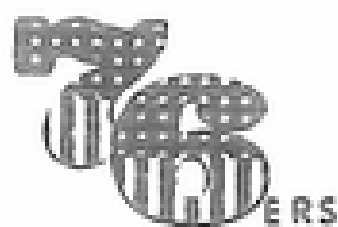
Dwight has been a leader in the field of Amateur Radio and is largely responsible for its continuing advancement in Southwestern Oklahoma.

## Late-Night Amateur Radio is ALIVE

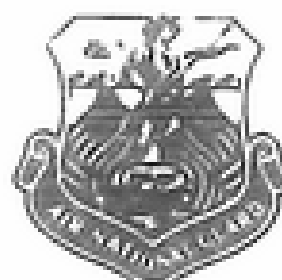
AFTER THE TEN O'CLOCK NEWS AND JOHNNY CARSON'S MONOLOGUE, MANY OKLAHOMA AMATEURS ARE FINDING SOMETHING REFRESHING ON TWO METERS. MOBILES OUT-AND-ABOUT, LATE-SHIFT WORKERS, AND RELATIVELY DISTANT HAMS KNOW OF IT, TOO. IT'S CALLED THE NIGHT OWL NET, THE BEST WAY TO KEEP IN TOUCH WITH AMATEURS IN OKLAHOMA. EVERY AMATEUR, TECHNICIAN CLASS AND HIGHER IS WELCOME TO PARTICIPATE. THE NET PROVIDES ASSISTANCE TO MOBILES, PASSES TRAFFIC AND KEEPS THE BAND ALIVE WITH GOOD AMATEUR CONVERSATION. JOIN US ANY EVENING AT ELEVEN P.M. - EVEN ON WEEKENDS. YOU MAY GET HOOKED!

**The Night-Owl Net**  
**146.07/.67 Oklahoma City**





THE BICENTENNIAL AMATEUR RADIO CLUB



The Bicentennial Amateur Radio Club, nicknamed The '76ers, was originated in 1976 through the sponsorship of The Oklahoma Air National Guard. Through a number of Guard personnel, the club was organized with the benefit of amateur radio in mind.

One of the major efforts of The Bicentennial Amateur Radio Club is in the area of training. During the club's existence, many people with the desire to learn have become amateur radio operators through efforts of the club's members. Many upgrades in licensing have also come about through a training program which has spanned Novice through Extra Classes. Instructors from within the club have provided much help, and to name a few: Coy Day, N5OK; Ernie Wolf, K5YKD; Bill Riddles, N5WM; C. V. Chandler, WB5TKG; Ken Newberry, K5GI, and many more have contributed to the growth of amateur radio and the growth of our club.

The Seventy-Sixers now sponsor a two-meter repeater in Oklahoma City. The 37/97 machine is located in the southern half of Oklahoma City, and serves the entire metroplex with open autopatch. Plans are underway to change the repeater frequency to 16/76 in August in order to eliminate some technical problems with mix frequencies in the area.

Another recent development is the establishment of The Oklahoma County Emergency Training Net, which meets Monday evenings at eight o'clock on the repeater. In addition to being the effort of the County E. C., Coy Day, it is also a total commitment from the club to have regular training sessions in emergency preparedness. Check-ins are encouraged for this valuable aspect of amateur radio.

Membership in the club is open to all interested in amateur radio, licensed or not. Meetings are held the third Tuesday of each month at seven o'clock, with interesting programs and a chance to meet over 80 club members who share a common interest. Classes will be opening in the Fall as usual for all classes of license. Come join The Seventy-Sixers at The Air National Guard Center, Will Rogers World Airport.

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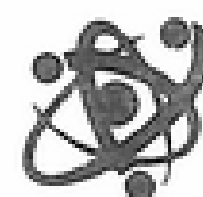
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## C O R A    C O M M E N T S

### LET ME TELL YOU ABOUT MYSELF -

Central Oklahoma Radio Amateurs, Inc. was organized early in 1974 as a vehicle for the several Amateur Radio Clubs in Central Oklahoma to participate in activities of mutual interest. By the constitution, each participating club (in the commuting area) appoints three representatives to CORA. CORA officers are elected from and by those representatives. Each club has the option of participating or not in any specific CORA activity. CORA has sponsored two major activities. The Oklahoma Ham Holiday, started in 1974 and the CORA Collector & Emitter which was started in 1975.

Oklahoma Ham Holiday was an instant success at Holiday Inn East in August 1974. It moved to Southgate INN for 1975, 1976 & 1977 with the attendance increasing from 370 in 1974 to 767 in 1977. This attendance created severe crowding, ie, "wall-to-wall-people", at Southgate and led to a search for a larger facility. The Lincoln Plaza Forum was selected as an ideal site for HAM HOLIDAY '78, with a convenient location, facilities for meetings of up to 1500 people and a huge flea market area. There is room for everyone and everything, come see.

Responsibilities for HAM HOLIDAY '78 are devided among the clubs and chairmen as follows:

General Chairman:	CORA Bob Ashby, W5HXL
Publicity & Registration:	Mid-Oklahoma Repeater, Inc. Mark Northcutt, WD5YDI
Programs:	Okla Central Amateur Radio Club Joe Buswell, K5JB
Prizes:	Aeronautical Center Amateur Radio Club Jess McKenzie, WB5VWB
Facilities:	Okla City Autopatch Association Marshall Williams, K5MB
Ladies Program:	Bicentennial Amateur Radio Club [76'ers] Don Duck, WB5UAP

The CORA Collector & Emitter, which you are reading, was started in order to put out a better publication at leas expense by consolidating editorial inputs and mailing lists of several clubs. A significant savings in postage and printing costs was realized because many amateurs were members of two or more clubs. Subsequent qualification for second class postage further increased the savings.

The Aeronautical Center ARC, who for many years had used the registered logo "Collector & Emitter" for its publication, offered its use to CORA. The first issue was published in February 1975. [Circulation 320]. This issue goes to 2300. Each participating club appoints an editor who brings in "camera ready" copy for his club's input. These are assembled in a "cut & paste" operation and sent to a printer. The responsibility for collating, stapling and addressing each issue rotates through the clubs on a monthly basis. Each club pays a monthly charge of 15¢ per member. [It costs 15¢ postage to mail most papers].

Joe Harding, WA5ZNF, the Managing Editor, deserves the major credit for getting it started and keeping it running smoothly. We are proud of Joe and The second place ranking in national competition last year.

Clubs interested in solving their publication problems, as Altus did, for 15¢ per member total cost should contact Joe. See page 2.

Bob, W5HXL

CORA Collector & Emitter



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### DON'T FORGET TO PREREGISTER!

IT DOES NO GOOD FOR ME TO SAY "DON'T FORGET TO PREREGISTER"  
IF YOU ARE GOING TO TURN THE PAGE, READ ON, GET ENGROSSED  
IN THE FABULOUS ARTICLES IN THIS MONTH'S C&E, AND FORGET  
ALL ABOUT PREREGISTERING FOR HAM HOLIDAY.

SO LET'S DO THIS. EITHER PUT THIS THING DOWN, PULL THE  
CARD, FILL IT OUT, WRITE A CHECK, ADDRESS AN ENVELOPE, PUT  
A STAMP ON IT, AND SET IT WHERE YOU PICK UP YOUR LUNCH  
BUCKET IN THE MORNING SO YOU WON'T FORGET TO MAIL IT.

IF YOU CAN'T PUT THIS ISSUE DOWN FOR FIVE MINUTES, TAKE  
OUT YOUR INK PEN AND WRITE ON THE BACK OF YOUR THUMB "HH";  
LATER ON WHEN YOU SEE "HH" ON THE BACK OF YOUR THUMB, YOU'LL  
WONDER "WHAT THE HECK IS THAT?" THEN YOU'LL SAY "OH YEAH,  
HAM HOLIDAY, I'D BETTER PREREGISTER TO GET A SHOT AT THAT  
WILSON MK II." JOE, K5JB

P.S. THE SOONER THE MONEY ROLLS IN, THE SOONER THE PRIZE  
COMMITTEE CAN SPEND IT FOR MORE GOODIES TO GIVE AWAY.  
REMEMBER, NOBODY GETS ANYTHING OUT OF THIS EXCEPT YOU!

**C.O.R.A.**  
CENTRAL OKLAHOMA RADIO AMATEURS  
PRESENT OKLAHOMA'S  
**HAM HOLIDAY '78**  
AND A.R.R.L. STATE CONVENTION

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\*\*\*\*\*PLENTY TO DO FOR THE LADIES\*\*\*\*\*

REGISTER BY JULY 21 AND BE ELIGIBLE FOR THE PRE-REGISTRATION DRAWING

**PRE-REGISTRATION AWARD: Wilson Mark II**  
WITH TONE PAD, CASE, AND CHARGER

**GRAND AWARD: Kenwood TS-520S**

PRE-REGISTRATIONS MUST BE MADE BY JULY 21ST TO QUALIFY FOR THE PRE-REGISTRATION AWARD. MAIL PRE-REGISTRATIONS TO: HAM HOLIDAY, P.O. BOX 14504, OKLAHOMA CITY, OKLAHOMA, 73113. TICKETS WILL BE HELD AT THE REGISTRATION DESK. SEND S.A.S.E. IF CONFIRMATION IS DESIRED. ROOM RESERVATIONS MUST BE MADE BY JULY 14TH. DEAL DIRECT WITH LINCOLN PLAZA. MENTION HAM HOLIDAY OR USE POSTAGE-PAID FORM FOR SPECIAL RATES.

POSTMASTER: Send Form 3579 to:  
CORA C&E Box 15013  
Oklahoma City OK 73155

Publication No. 116150

JULY HAM HAPPENINGS						
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						COFFEE AND 9:30 RED CARS B-DOG
2	3	CELEBRATE 4 <sup>TH</sup> INDEPENDENCE	5	6	ACARC MEETS 7	8
				ALTUS		
9	10	11	12	13	14	15
		OCA P 76ers 18 @	19	20	21	22
23 HAM HOLIDAY 30	24 31	25	CORA AMUST 26	27	28	HAM HOLIDAY 29

for details

rsi rsi rsi rsi rsi rsi rsi rsi rsi rsi rsi rsi rsi rsi rsi rsi re

AND A.R.R.L. STATE CONVENTION



HILLCREST SHOPPING CENTER  
2102-4 S.W. 59th 682-2929  
OKLAHOMA CITY, OK. 73119

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