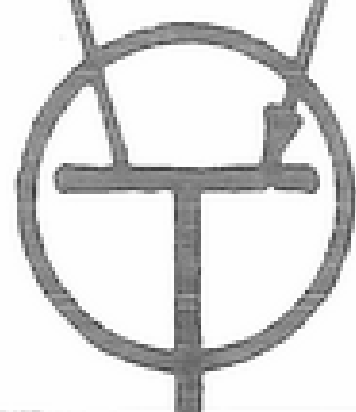


Central Oklahoma Radio Amateurs

COLLECTOR

EMITTER

AND



SINGLE COPY

25¢

AN INFORMATIVE MAGAZINE  
PUBLISHED MONTHLY BY AND  
FOR OKLAHOMA RADIO  
AMATEURS

AND ANYONE INTERESTED IN  
LEARNING ABOUT IT

Vol 5

JULY 1979

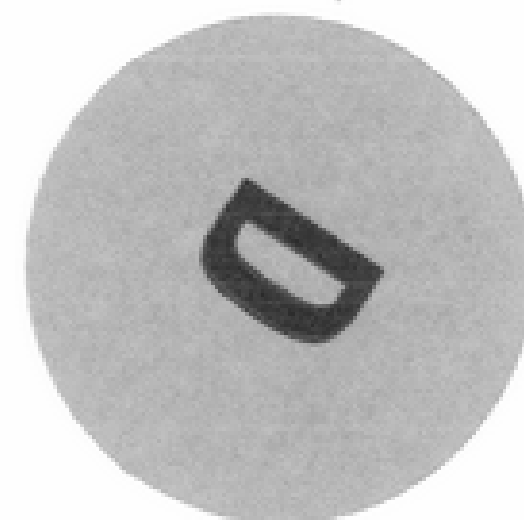
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JULY 27-28-29

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# Central Oklahoma Radio Amateurs

## HELLO, OKLAHOMA!

This large mailing of the Collector and Emitter is to call attention to the biggest and best hamfest in this part of the country--Ham Holiday '79 and Oklahoma State ARRL Convention. By sending this edition all over the state, we hope to spread the word. We hope you, in turn will tell all the amateurs in your area about this big event. Everybody is welcome!

Ham Holiday '79 is sponsored by Central Oklahoma Radio Amateurs, Inc. (CORA), a group of Oklahoma amateur radio clubs combining effort and talent to promote amateur radio. All proceeds above hamfest expenses go back into Ham Holiday, buying more and more goodies for the awards drawing Sunday afternoon. Ham Holiday is well-known for its awards drawing.

A ten-thousand square foot flea market area assures many an hour of browsin' and hoss tradin'. This year, we've scheduled some time for browsing admist our long list of programs, so you'll have time for both.

Speaking of programs, one of our highlights this year will be "Reception Techniques for Geo-Stationary Satellite Television", conducted by Mr. Bob Cooper, W5KHT. Bob is the author of "The New Frontier" column in QST, and lives near Guthrie. Make sure you're here on Saturday for this one. Other programs are listed in this issue. Don't forget to bring the YL--we have programs for her, too.

## A WORD ABOUT REGISTRATION

Pre-registration can be made using the enclosed form. Photocopy some for your friends. Remember, pre-registration qualifies you for a go at a Tempo Synthesized Talkie with accessories. Pre-registrations must be received no later than July 20<sup>th</sup> to qualify.

This year, registrants will receive a 2½" button with name and call. This is to be worn during the hamfest for security purposes and will be your pass into the meeting rooms and flea market area. In addition, your badge will be placed in the hopper with everyone else's for the awards drawing. Winners will be determined by the badge drawn. No more stubs to carry around! Pre-registrations may be picked up at the registration desk when you arrive. Just give your call and name.

## HERE'S A PREVIEW OF SOME OF OUR PROGRAMS.....

- \* Wind and Solar Power      \* Computers      \* Amateur Television
- \* Narrow Band Voice Modulation
- \* Reception Techniques for Geo-Stationary Satellite Television
- \* Traffic Handling      \* 2m Transmitter Hunt      \* ARRL Forum

## PLUS, YOU MAY BE INTERESTED IN THESE.....

- \* 10-X International Chapter Meeting
- \* Oklahoma Repeater Society Meeting
- \* Six Meter Forum and Demo

## AND, FOR THE LADIES.....

- \* Stretch and Sew Fashion Show
- \* Microwave Cooking Demo
- \* How to Make Ceramics
- \* Plenty of Bingo

AND MORE...

# Central Oklahoma Radio Amateurs

COLLECTOR AND EMITTER



Published monthly by CORA Inc 1020 Arthur Dr Oklahoma City OK 73110  
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Managing Editor Joe Harding, WA5ZNF 737-1044

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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	Mark Northcutt	WD5DYI	842-1086
Vice President	Chuck Wilhite	K5NK	721-4926
Secretary	Jim Buswell	N5BEQ	947-1180
Treasurer	Ron Recer	WD5FRQ	751-5378

## CLUB EDITORS, REPORTERS, CONTRIBUTORS. Send your items to them!

ACARC Bob Graham	WB5NSV 677-8685	OCARC Joe Buswell	K5JB 732-0676
BIARC		OKCAP Henry Isreal	N5IH 722-3848
ALTUS Mike Schenkle	K5VXU	NORI George Lee	WB5MMK 946-2754
OUARC Nathan Kirby	KB5BF 364-7979	CARC Richard Edwards	KA5ALO 390-8297
MARC Virginia Beneda	WB5MTH 825-3302	TECHNICAL WRITER Mike Salem, N5MS	
SARC Bill Warren	WB5TZO	KAY Chuck Willis	WB5DOT 765-5366

## PARTICIPATING CLUBS FOR CORA COLLECTOR & EMITTER:

AERONAUTICAL CENTER AMATEUR RADIO CLUB  
Postal Station 18, Oklahoma City OK 73169  
MEETS: 8:00 PM First Friday each month  
Flight Standards Bldg, FAA Aero Center

Pres	Bob Pace	WA5CJG	376-3569
V-P	Bill Oliver	K5KDR	329-6333
Sec	Bob Graham	WB5NSV	677-8685
Treas	Sam Gover	WA5MHO	

MID-OKLAHOMA REPEATER  
MEETS: 8:00 PM First Tuesday of Month.  
Oklahoma City EOC, 4600 N Eastern

Pres	Chuck Wilhite	K5NK	721-4926
V-P	Bill Atkins	N5AH	737-6984
Sec/Tr	Jim Jones	K5PER	634-5235
Dues:	Sid Gerber, 829 Bouse, MWC 73110		

OKLAHOMA UNIVERSITY AMATEUR RADIO CLUB  
MEETS: 8:00 PM, 1st & 3rd Thursday  
Rm 449, Carson Engineering Center.

Pres	James Gardner	KA5DHF	321-8779
V-P	Dan Orr	WD5GKZ	325-6951
Sec	Peter Richeson	KA5COI	325-3015
Treas	Nathan Kirby	KB5BF	364-7979

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

Pres	Steve Norris	W5KI	
V-P			
Sec/Tr	Mike Schenkle	W5VXU	

WHEATSTRAW AMATEUR RADIO CLUB  
MEETS: 2nd Sunday, 2:30 PM. Location varies. See Calendar on back page.

Pres	Marvin Stokes	WA5JHB	893-2221
V-P	Ted Vanlangham	WD5JNT	262-1675
Sec/Tr	Ralph Wilder	WA5PFK	623-5421
Act	Joe Hyatt	WA5GHK	375-3783

SHAWNEE AMATEUR RADIO CLUB  
MEETS: 8:00 PM, 2nd & 4th Tuesday.  
Shawnee City Hall EOC

Pres	Earl Couch	WB5ZBA	
V-P	Jay Tingler	WD5BUQ	
Sec/Tr	Bill Warren	WB5TZQ	

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

Pres	Ken Ford	WB5KHU	528-8770
V-P	Jim Williams	K5VRL	789-0769
Sec	Joe Buswell	K5JB	732-0676
Treas	Ellard Foster	W5KE	789-6702

OKLAHOMA CITY AUTOPATCH ASSOCIATION  
MEETS: 7:30 PM 3rd Tuesday of each month  
Oklahoma Military Academy, 36th & Grand

Pres	Frank McCollom	N5FM	751-3577
V-P	Henry Isreal	N5IH	722-3848
Sec/Tr	Hobe Burgeon	WB5MLN	751-1646



BICENTENNIAL AMATEUR RADIO CLUB [76'ers]  
MEETS: 7:00 PM, 2nd Tuesday each month  
Air National Guard, Will Rogers Airport

Pres	Mark Northcutt	WD5DYI	842-1086
V-P	Joe Ramage	WB5TDW	685-4814
Sec	Joe Couch	WD5BMP	282-4353
Treas	Don Duck	AE5N	

CHOCTAW AMATEUR RADIO CLUB  
MEETS: 2nd Thursday, 7:00 PM  
Indian Meridian School Cafeteria

Pres	Frank Carter	AB5H	391-3394
V-P	Gary Chambers	WB5MHF	390-8250
Sec/Tr	R.G. Edwards	KA5ALO	390-8297

KAY COUNTY AMATEUR RADIO CLUB  
MEETS: 7:30 PM, third Thursday of month.  
Security Bank basement, Ponca City OK

Pres	Chuck Willis	WB5DOT	765-5366
V-P	C. L. Hallmark	W5ZMH	762-8620
Sec/Tr	Jay Williams	W5TXF	765-9440

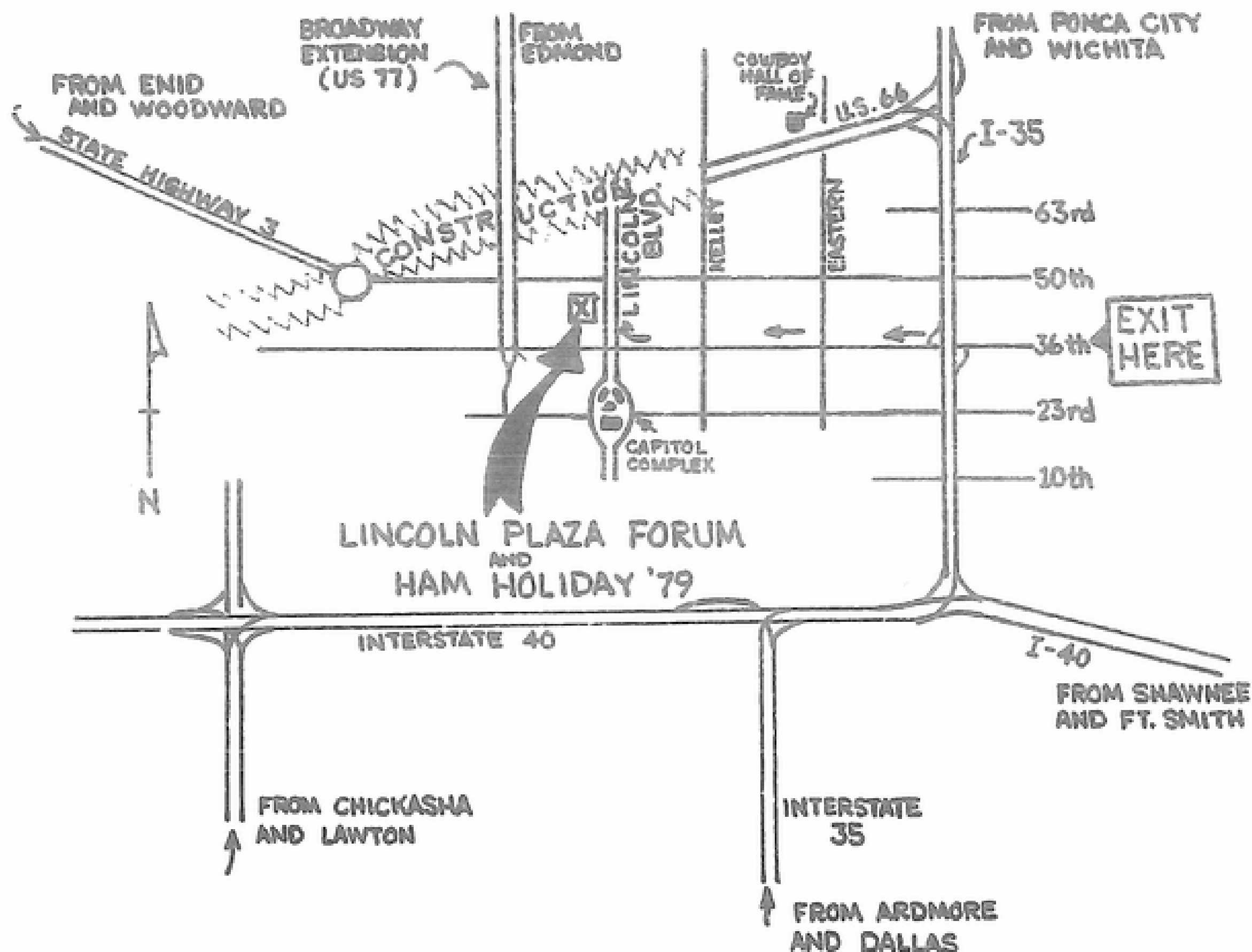
EDMOND AMATEUR RADIO SOCIETY  
MEETS: 2:00 PM, 3rd Sunday, room 205, Science Bldg., Central State.

Pres	Howard Wise	WD5IDB	341-2510
V-P	Ken Stepp	WD5HXK	
Sec/Tr	Bill Wright	WA5ZLW	



## HOW DO YOU GET TO HAM HOLIDAY?

Oklahoma City road construction has obliterated some of the familiar highways in the north side. Here's the best way in:



From the interstate system, exit on N. E. 36th Street from Interstate 35. Go west past Eastern and Kelley Streets to Lincoln Boulevard, right on Lincoln and Lincoln Plaza Forum will be on your left about 3/4 mile.

This will be the fastest and easiest way to Ham Holiday '79. We'll see you there!

## A WORD ABOUT C.O.R.A.

Central Oklahoma Radio Amateurs, Inc. has been designed at its very conception to represent and promote amateur radio. Each affiliated club appoints representatives to a board of directors, thereby having equal voice and vote on our undertakings.

Our name is becoming a bit misleading. What originally started as affiliated clubs from the metropolitan Oklahoma City area has branched into a statewide organization. We now have affiliated clubs in Shawnee, Altus and Ponca City, with more considering affiliation. See Page 4 for our represented clubs.

CORA's yearly project has been Ham Holiday. But alongside that planning and preparation, we publish this newsletter, Collector and Emitter. Also, we have been expanding our purpose with other projects for the year 'round.

If you are an active club member, consider the advantages of club affiliation with CORA. Our main advantage is our combined newsletter. Your club would have up to three pages in the Collector and Emitter, probably giving your club newsletter a lower cost per unit than your current system (or maybe your first newsletter of any kind). The C & E lets you know what's happening with other clubs, combines technical knowledge, provides for a wider span of interests, plus an interchange of ideas. Advertising is available for a select clientele, the Oklahoma Amateur.

Obviously, we would like to see CORA grow into a statewide organization with a larger scope, serving all points in Oklahoma. The future of the organization has many responsibilities. As a club member, bring CORA up for discussion at your

meeting. We would like to have you be a part of us. Contact our editor for more details (see page 4).

If you are not a club member, we hope you will consider a subscription to Collector and Emitter. You'll stay abreast of current activities of interest to Oklahoma hams, especially with our excellent technical articles written by our affiliate members.

In any case, CORA wants to extend an invitation to help us make the Oklahoma amateur fraternity a more closely knit group. Thank you for your interest, and I'll see you at HAM HOLIDAY!

Mark Northcutt, WD5DYI  
President, CORA, Inc.

#### MINUTES

The May meeting was called to order at 7:30 pm on the 29th with 22 representatives and guests present.

Both the Minutes of the April Meeting and the Treasurer's report were approved as read.

Announcements: the June meeting of the Aeronautical Center club was 1 Jun at the Mike Monroney Center Auditorium with Jack Gant W5GM and an ARRL forum. (A valuable time was had by all.)

Bill KB5BS has built and "accurized" a deviation meter and volunteers to bring it to any club meetings to set up members' radios upon request.

The mailing list for July's HH79 issue of C&E, including ARRL members through the state and last year's conveners was to be compiled 6 Jun at the Red Cross center.

The paste-up for July's C&E was announced to be 20 June and mailing to be 27 June, the day after CORA's June meeting.

Carl W5JJ presented The Governor's Proclamation of "Radio Appreciation Week, 22 through 28 July 1979" for perusal.

There was to be a meeting of HH79 committee chairman on 11 Jun 79.

Old Business: Fred K5HFN submitted 500 red-and-black bumper stickers stating "Amateur Radio Spoken Here" donated by Antenna Specialists Company to Ham Holiday. It was suggested and approved that one sticker be provided each HH79 registrant till they're gone. A business motion followed that a letter of appreciation and thanks be sent to A.S.; there was one negative vote: the Secretary's.

New Business: a motion carried that feedback from the member clubs be heard before CORA provides a zip-coded roster from our computer to the Red Cross Disaster Services Director or the CORA Emergency Communications Committee.

The motion carried that commercial exhibitors at HH79 be given the opportunity to sign and prominently display on site their support of "The Code of Ethics" as provided by ARRL. Copies were provided to the Exhibitor/Prize Committee.

The motion was made, seconded and passed that the representatives discover their clubs' wishes regarding a raffle during HH79 and report to the 26 Jun 79 CORA meeting, proceeds to go toward upgrading our computer printer for upper and lower case type.

HH79 Committee Reports: Ladies : the 0900 Ceramics program on Saturday 28 July has been moved to 1300 Saturday;

Prizes: Grand: Kenwood TS-120S, PS-130 Power Supply, SP-120 Speaker; Pre-Registration: Tempo S-1 2M FM Synthesized Handheld Transceiver with telescoping antenna and AC adapter/charger.

The Programs Chairman is Nathan KB5BF.

The Facilities Chairman is Merrill WB5PTQ.

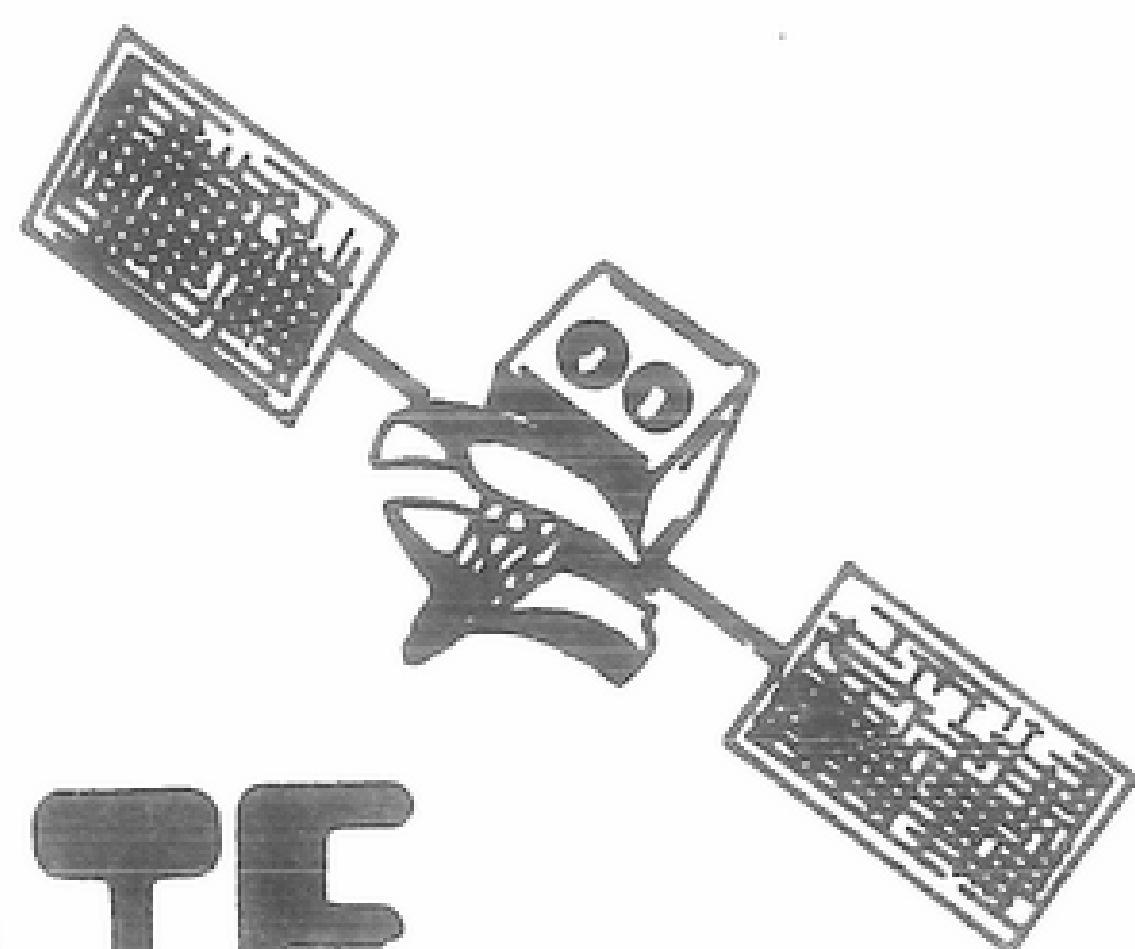
The Publicity Chairman is Carl W5JJ.

The Ladies Program Chairmen are Bobs WA5CJG and WB5NSV.

The Prize Chairman is Larry WB5NYX.

There being no further business the meeting adjourned at 10:00 pm.

Jim N5BEQ  
Secretary



# SATELLITE SEMINAR

August 14-15-16, 1979

Fascinated by the possibilities of building your own satellite television receiving system? Thousands of hams are working on the project these days; some, like W6HD have designed completely original TV receiving terminals from the ground up. Others, like K4AWB, have invested very little money in the project by scrounging for surplus equipment that can be converted to the satellite TV service.

Bob Cooper (W5KHT) is sponsoring a three day 'Satellite (TV) Seminar' here in Oklahoma City August 14-15 and 16. Dozens of satellite TV experts, from throughout the world will be joined by hundreds of hams and non-hams interested in learning more about this subject at the world's first international (low cost) Satellite TV Seminar. If you can't manage the full three days, you might be interested in attending the Wednesday (August 15th) evening session where experts in MDS (2.15 GHz) TV transmission receiving systems will speak on designing and building your own low-cost 2.15 GHz MDS TV receiving system. Special 'ham rates' for the Wednesday evening session are \$15.00 and includes full exhibit hall privileges where you will see low cost satellite TV terminals in operation. Data sheets explaining the seminar are available for an SASE. Write SPTS '79, P. O. Box G, Arcadia, OK 73007 or call (405)396-2574.

# CHOCTAW AMATEUR RADIO CLUB

Pres., Frank Carter, AB5H, 391-3394  
V-P, Gary Chambers, WB5WHF, 390-8250  
Sec./Treas., R.G. Edwards, KA5ALO, 390-8297

14 June, 1979--Last meeting before Field Day called to order by Frank AB5H at 7:15 p.m.

Needless to say, almost the entire meeting was taken up with final preparations for Field Day.

For us, F.D. will be held at Choctaws own Ten Acre Lake, and we'll be using 3 transmitters and a 15 KW generator.

Most of us are kind of anxious--this'll be my first--but by the time you read this, it will be completely behind us, except in memory.

I've been doing a lot of thinking about Ham Holiday latly, and am sure looking forward to it. Last year, as a brand spanking new Ham (well almost) I made my first H.H. I think this one will be so much better than the last one if for no other reason than I know a little more about amateur radio now than I did then. I hope so anyway.

All of C.A.R.C. members I've talked to are looking forward to putting a face on some of those calls they've talked to!

Things sure are quiet out here in Choctaw. Seems like everyone is busy on F.D. and H.H.

I've been listening in on the Nite Owl Net occassionally, and have been very impressed by the sheer numbers of check-ins. Guess I had better check in myself sometime. Anyway, sounds like some of the new operators (mostly 'cause I havn't heard em) are doing an outstanding job of net control.

I just learned Tony's (WB5PNH) wife had surgery and Al's (WB5OHK) wife has been under going some tests. Also, Kenny--one of our Novice class participants--is in the hospital with a collapsed lung. If you know any of these give them a shout.

I'm inclined to agree with Mark (DYI) we do seem to have a proliferation of Phunny Phonetics on the air. Look at mine for example. Now I ask you, who in their right mind would want to be known as Americas Laziest Operator? Not me, that's for sure.

My new son likes to listen to morse, so maybe.....

We would like to invite any and all to our next meeting. With summer here, we'll be meeting at some of our homes, so give any of us a call as listed in the front cover of C&E for location prior to the meeting.

Also, if you can access 147.69/09 jump in with both feet. The guys you'll meet there are the same ones you've probably already met elsewhere, so come on in. You're more than welcome.

See you at Ham Holiday  
Rick KA5ALO

Equipment: Drake TR-33C 6 crystals-52/52, 34/94, 07/67, 22/82, 39/97, and 147.81/21. Phone 525-2870.

Whoa, stop the press, late breaking news, flash: Just found out that Jim (WD5ITV) is going to get married next month. How about that?

FOR SALE: Bearcat III 8 channel VHF Scanner, \$50. James Gardner, KA5DHF 631-8821.

FOR SALE: Wilson MK II with hi/lo power switch, TTP, battery, charger, 52/52, 34/94, 07/67, 22/82, 81/21, 16/76 xtals. \$265.00. Oscar Staudt WB5GCX. Day 734-7028. Evening, Guthrie 282-6508.

WANTED: Used Ringo Ranger & FT-101E. Dick Strouhal, W5MGP, 732-6029.

FOR SALE: To AMATEURS ONLY! BPI-2KL linear amplifier, 10-80 meters, new cost \$1500.00. Dicker at \$850.00. Bill, WB5YDM, 737-7177 (10 to 5).



# RANDOM WORDS FROM THE PRESIDENT:

By the time you read this FIELD DAY 1979, will be a thing of the past, and only something we can look back on and think of things we should do different. I do hope that everyone who worked with field day has had a good time... Thank YOU...

HAM HOLIDAY 1979 is less than a month away, if you haven't pre-registered do it now so you won't miss out on all the goodies. Also bring your wife along this year. We have a nice program planned for her. Starting at 10:00 AM on SAT. the schedule will look like this...

10:00 - 10:45 -- STRETCH & SEW fashion show presented by STRETCH & SEW FABRICS, 4016 N. MacArthur Blvd.

11:00 - 12:00 -- MICROWAVE COOKING IS THE EASY WAY, Presented by a home economist from Dulaney's Inc. The Microwave Ovens will be supplied by Shingletons Appliance, 1217 S.W. 44th St...

12:00 - 1:00 pm --- Lunch Time

1:00 - 2:00 pm --- HOW TO MAKE CERAMICS, Presented by MS. Ruby Strickland, a NCMA teacher from Ceramic Feaver Inc., 4522 N.W. 50th Street.

2:30 - 4:30 pm --- B I N G O called by Holly, We have plenty of cards, good gifts, and a good time for all those who come.. Sat. night will be left open for visiting and combined programs.

Sunday at 9:00 am we will have another B I N G O session, again we are proud to have Holly as our caller and good time producer, Everyone come on out for good awards, and more fun than you can shake a stick at... There will be awards given at every program and a bunch of awards will be given away at the drawings on Sunday..

At the June meeting of ACARC we had as our guest Mr. Jack Gant W5GM, the West Gulf Director Of the A R R L. Jack conducted a very good A R R L Form, he called on Leonard Hollar, WA5FSN and H.O. Townsend, WA5MLT to make their comments and reports. Jack then passed along things happening at H.Q.'S he then took questions from the floor. Everyone at the meeting enjoyed the program and I would like to thank Jack, Leonard, and H.O. for coming out to help us at our meeting.

The program we will have at the July 6th meeting will be presented by Mr. Don Bolar on "THE USE OF FIBER OPTICS IN COMMUNICATIONS", See you there....

73, Bob Pace, WA5CJG.

**FOR SALE:** Practically new Yaesu FT-227RA memorizer. Includes scan and remote channel control plus tone pad. \$325. James Gardner, KA5DHF. 631-8821.

**FOR SALE:** Tower 48 ft. \$225.00 -- Call Harry, WD5IDE, 789-6433

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## MINUTES OF THE JUNE MEETING OF THE ACARC

The meeting was called to order at 8:05 P.M. by President Bob Pace, WA5CJG. There were 48 members and guests present. Following the usual round of self-introductions, Bob announced that only a few short announcements would be made, and that normal business would be omitted, because of the nature of the program for the evening.

Bob Asked that anyone having any corrections to their name, address, call, etc. as shown on their Collector & Emitter mailing label, please contact their appropriate club secretary. This is for the purpose of bringing all of CORA's records up to date on the computer.

He then announced that our field day efforts will be held at our old site at Lake Overholser. Everyone was invited to come out and have a fine time.

Bob then introduced Jack Gant, W5GM, ARRL West Gulf Director, who presided over an ARRL forum. We would like to take this opportunity to thank Jack Gant, W5GM, Leonard Hollar, WA5FSN, and H.O. Townsend, W5MLT, for conducting a fine forum and program.

A drawing followed for door prizes donated by the ARRL. The meeting adjourned at 9:42 P.M.

Bob Graham, WB5NSV, Secretary

## Rare Cards--Well Maybe!

Following Mike Salem's efforts and article of last month, concerning the special state ID card, Carl Drumeller, W5JJ, shares this one with us issued 7-9-53! Guess somebody forgot!

### STATE OF OKLAHOMA DEPARTMENT OF PUBLIC SAFETY SPECIAL IDENTIFICATION

This special personal identification card issued to  
Carl Clifton Drumeller

will identify the holder as having been issued a general class or better license by the Federal Communications Commission to operate an amateur radio station in the State of Oklahoma.  
Serial No.

030

Official call letters

W5EHC 10-21-52

Date of Issuance

7-9-53

*Digby Gilman*  
Commissioner

## TEN-METER DF LOOP AND PREAMP

The April issue of Amateur Radio shows how to build a loop antenna and balanced pre-amplifier for use in direction finding. It's not as simple as the one K5JB has described in C&E but appears to have merit.

W5JJ



### Follow-up on Fone Traffic

Those of you who read both my article on radiotelephone message handling (page 5, June C & E) and John F. Lindholm's article on the same subject (page 74, June QST) may have noticed a conflict. I told you to say "Double Dash" as the prosign between address and text and between text and signature. John told you to say "Break." Just to set matters aright, I wrote to Robert J. Halprin, K1XA, who conducts that portion of QST. Here's his reply:

June 6, 1979

Carl C. Drumeller, W5JJ  
5824 N.W. 58 street  
Warr Acres, Ok 73122

Dear Carl:

Thank for the comment on the phone traffic article.  
Okay on the separative vs. break; you are so right. I  
Will try to plug it into a future column.

73,

/Bob Halprin/  
Robert Halprin, K1XA  
Assistant Communications Manager

Let's hope radiotelephone traffic handlers will note the  
distinction between the two prosigns and will use them correctly.

W5JJ

### MORE FRG-7 MODIFICATIONS

The March 1979 issue of Amateur Radio (you'll find it in the ACARC clubroom) has a number of modifications for the popular FRG-7 receiver. As before, they spring from the capable mind and hand of Ron Fisher, VK3OM.

One is for the addition of a 12-V dial light to illuminate the "S" meter. Still another shows how to tame the unbridled enthusiasm of that "S" meter.

Another relates to the dial-set knob, and still another shows a means of getting away from parallax error in dial reading. Should you want a spotting oscillator, you can install it in the space (usually left vacant) for an internal battery and control it by the dial light switch, which seldom is used when operating from ac. It's not a modification, but Ron points out that the Record socket on the front panel can be used not only for taking out a signal for recording, but also for introducing a signal to be amplified by the receiver's audio stages. No wiring or other changes are needed.

W5JJ

FOR SALE: R-390A \$275, Collins KWS-1 \$300, HP-608D \$275, URM-25D \$175, VIKING RANGER \$75, MILLEN 2KW TRANSMATCH \$115, All equipment is in good shape, Manuals will be included... Call Bill Jones W5LTJ (405) 771 - 3198.

FOR SALE: Robot 70A slow scan monitor with 80A camera, \$300.00 for pair. Conrac Video monitor \$50.00 call Sam Stephens, W5HZD, 262-4872.

## Shawnee Amateur Radio Club



# W 5 S X A

Flea Markets, Ham-Com, Field Day, HAM-HOLIDAY, ----- who has time for a hobby anymore? ! !

HAM HOLIDAY '79 - JULY 27, 28, 29

Earl WB5ZBA, Ron WD5C1G, Dean N5BEZ and yours truly made the trek to Dallas just for Saturday. Ron and I braved the threat of rain nearly all day and actually came out in the black at the Flea Market (out-doors). Bill WB5TZQ and family went down with us - in convoy - and stayed for 6-flags, etc. Saw Hub W5GYX there and several from OKC area. Dean upgraded to General while there! Atta boy, Dean!

HAM HOLIDAY '79 - JULY 27, 28, 29

Those new calls in the area are:

DAVID	KA5EUQ	(I object!)
JIM	KA5FBC	(First Baptist Church)
OTTO	KA5FAU	(Young Fellow from Chandler)
JIM	KA5FAT	(FCC got his number!)
LEO	KA5FBA	(Fine Business, Albert)
WALT	KA5FIT	(They <u>must</u> have known)

ALSO: SYRENA N5BEP, DEAN N5BEZ, NORM KB5KS

HAM HOLIDAY '79 - JULY 27, 28, 29

The Possum Scoopers net now has five fully qualified members. Certificate #1 went to Earl WB5ZBA, #2 is Ron WD5C1G, #3 is Jay WD5BUQ, #4 is Bill WB5TZQ and #5 is Dale WA5BOA. Some interest is being shown by others. The requirements are tough though - so hang in there fellers.

HAM HOLIDAY '79 - JULY 27, 28, 29

WA5BOA is the only HAM I know with a highway exit named after him.

HAM HOLIDAY '79 - JULY 27, 28, 29

After about two years of work TZQ finally got his super-duper 50' break-over tower in the air. I made the mistake of commenting on such a fine tower with no antenna on it and the next time I drove by - sure enough there on top of the mast about ten feet above the tower sits a Ringo Ranger - with a HAM III driving it !!! He says it has rather definite lobes. (I think I need to have a talk with that kid)

HAM HOLIDAY '79 - JULY 27, 28, 29

Speaking of Ringo Rangers; the 31/91 machine uses three of them. The receive side has one at about 150' atop a water tower. The output uses two stacked (one up-side down) at about 87' on the west side of the tower. This arrangement can be blamed on Tommy W5NMN. We would really like to publish a technical article on it, Tommy. It's not enough that it works - we need to know why!

HAM HOLIDAY '79 - JULY 27, 28, 29

Dean N5BEZ built a whale of a power supply; 20 Amps capacity, fully regulated current limited and all that jazz. Weighs 26+ pounds! Then he didn't have but a 1½ Amp load to test it with. So, good old TZQ came to the rescue with a pair of sealed-beam headlights to help the kid out.

HAM HOLIDAY '79 - JULY 27, 28, 29

We've talked about the new HAMS in the area. Now we find there are some old HAMS coming out of the wood-work. We need to get these fellows down to our



Shawnee Amateur Radio Club



W 5 S X A

meetings and active again.

HAM HOLIDAY '79 - JULY 27, 28, 29

Field Day for SARC will be at the usual place at Shawnee Lake. That's at the park where the Lake Road dead ends. If you don't know how to get there, by the time you read this it will be too late.

HAM HOLIDAY '79 - JULY 27, 28, 29

The Tri-County Flea Market was a resounding success according to our Sec/Treas. I think he spells it m-o-d-e-r-a-t-e. We made enough to pay the bills for a couple of months, and everyone had a good time!

HAM HOLIDAY '79 - JULY 27, 28, 29

Kudos to TZQ and his XYL, Jane for all the work they put into the Flea Market. Road signs, fliers, coffee (.15) cokes (.25) and BEER (Free!).

- 73, Jay WD5BUQ

FOR SALE: I've still got it! Mosely TA40KR \$35. WD5BUQ

FOR SALE: Motorola Dispatcher W/52 \$45 WB5TZQ 275-0119

NEED: Power XFRMR for SP 600. WD5BUQ 273-3033.

WANTED: All back issues of Collector & Emitter WB5TZQ 275-0119

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5-10



ALTUS AREA  
AMATEUR RADIO  
ASSOCIATION

President - Steve Norris W5KI

Sec/Treas. - Mike Schenkel W5VXU

The June meeting of the Altus Area Amateur Radio Association came to order June 14 near 8.00 PM with Steve, W5KI, presiding.

The principal subject for discussion was Field Day. This year this event will be held at Jerry's, WB5LTU, place near Tipton and from all indications it will be bigger and better than ever. According to a briefing by Dave, KØJPK, everything seems to be in good shape with only some minor items left to be obtained, such as a couple of pieces of 52-ohm coax, extension cords for lights in the tent and some lights to act as balast for the generators. The Club will pick up the tab for the cost of gasoline and oil for the generators. The only problem brought out might be with flies and insects, depending on the weather, so those of you who plan to go to the FD site, bring some bug spray just to be on the safe side.

A motion was made, seconded and passed unanimously to accept an offer of \$15.00 for a surplus one-wheel trailer which belongs to the Club. There has not been any use for it and the discussions did not show any future use, therefore disposal was authorized.

Participation in the JUNK sale/trade was disappointing with only two people bringing any "goodies". Hopefully the next time this type of event is scheduled there will be more interest.

In reaction to an article published in the CORA C&E, written by Michael Salem, the Secretary obtained 20 blank application forms for the Oklahoma Special Amateur ID Card. About six were issued, filled in and returned to the Department of Public Safety. Anyone else who qualifies for this card and would like one, please contact Mike, W5VXU for a blank application form.

All Altus members are reminded that the next Club meeting will be held on July 12th in the Altus City Park, the one with the airplane, at 6.00 PM. Bring a picnic lunch, any games you might like and some good weather. Above all, dont forget mama and the kiddies since there apparently will be some free icecream also.

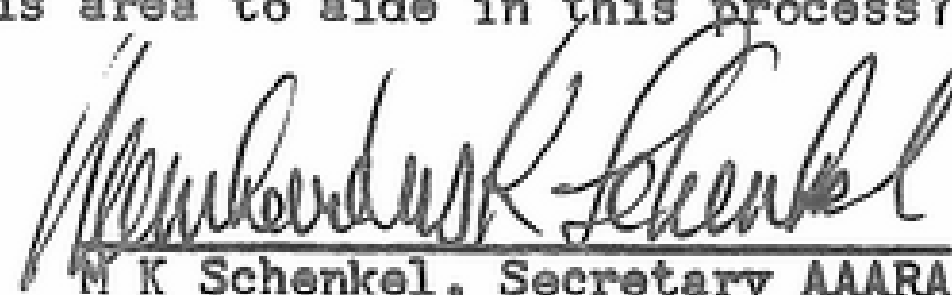
Gentlemen,

In reference to the article written by Michael Salem about the Oklahoma Special Amateur ID Cards, a question has arisen about the eligibility requirements. The article and the forms indicate that only General Class and above are eligible for this card.

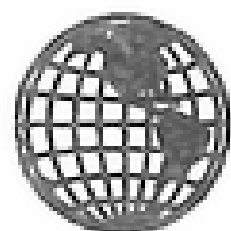
With the tremendous increase in the usage of 2 meters what with repeaters all over the place, is there any interest among ether clubs in Oklahoma in attempting to reduce this requirement to include Technicians?

The interest in the Altus Club is rather acute since some 4-5 Technicians have been strongly involved in disaster work of various kinds in the past and considering that the Emergency Coordinator for this area is himself a Tech, this question becomes all the more important.

Our request is therefore rather simple. Can this requirement be lowered to include Technicians and what can we do in this area to aide in this process?

  
M K Schenkel, Secretary AAARA

W5VXU



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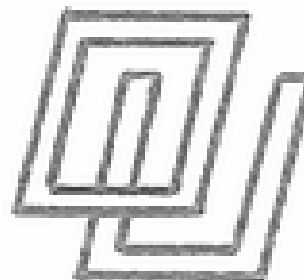
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### WELCOME TO OKLAHOMA HAMS

A BIG RED welcome from the O.U. Amateur Radio Club to you who are receiving this issue for the first time. We hope you enjoy this special issue. The O.U. Amateur Radio Club has been associated with CORA since CORA's formation. We are proud to be a part of CORA and participate in its projects such as Ham Holiday. CORA gets us into the mainstream of Oklahoma Ham Radio. Our members keep up with what is going on in our club and other clubs through the monthly Collector and Emitter. We figure a \$1.50 charge per club member per year for such a fine technical and "whats happening" magazine is worth it. One of our trustees, Mike Salem N5MS, is Technical Editor for the Collector and Emitter. Mike has nitty gritty technical articles that cover everything from the care and feeding of Ni-Cads to getting more out of your Bearcat 250. For Ham Holiday 79, the O.U. Amateur Radio Club arranged the technical programs. We would be interested in your comments good and bad on the programs for this year with emphasis on how we could do better next year. Mail comments and complaints on programs to Nathan KB5BF, 1214 Barkley Ave., Norman, OK 73071.

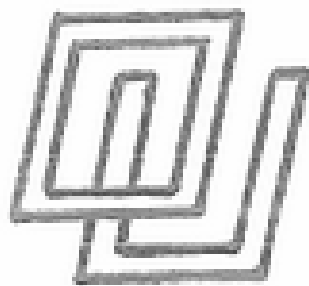
### O.U. RADIO CLUB CELEBRATES 48 YEARS

The Alpha Sigma Delta Radio Society was formed during the days of "Hoover Hogs" and the WPA. A group of students, who were hams, decided to live together in a small house and share their primitive (to us) transmitting equipment. This beginning was in the year 1931; very little is known about these early days. We do know these hams called themselves the Alpha Sigma Delta Radio Fraternity. It is not known when the transition from Fraternity to Society was made. It appears to have been more a gradual change in usage. Even now, we refer to ourselves more as the O.U. Amateur Radio Club yet we are pleased to hold onto the tradition we have inherited from early day members. If any of you were members or have recollections of the club's character, equipment or activities, I would dearly love to have any bits of information on our early history. The call sign for this group of guys whom I would guess to be in their 60's now, was W5TC. We are proud of this call and look forward with dread at the time when the FCC in its "deregulation wisdumb" decides that no more club calls will be renewed. Certainly our case is not unique. I am sure a lot of club's view this kind of deregulation with alarm. As one writer to a prominent ham magazine said "A lot of history will go down the drain when the FCC drops club calls."

### ACTIVITIES OF THE ALPHA SIGMA DELTA RADIO FRATERNITY

The O.U. Amateur Radio Club is dedicated to the serving of the University of Oklahoma campus. This includes over 18,000 college students in addition to the faculty and staff. Little known but important, is the U.S. Postal Service and Oklahoma Center for Continuing Education on campus. We also try to service their students who are away from home for weeks. Carl Horowitz WB5QNK, is the club's liaison with these Postal Institute students. Carl loans keys to the W5TC ham shack so the USPI hams can keep schedules with loved ones or friends back home. Our club members also assist on-campus students who wish to keep a schedule back home. Since O.U. has many foreign students, this may sometimes mean assisting a foreign student talk to his home country. Whether assisting the Postal Institute students or the O.U. students, the mission of the Alpha Sigma Delta Radio Society is the same: service to the campus.

Service to the community is another facet of club activity. The pri-



## Alpha Sigma Delta Radio Society

Dedicated to serving The University, the community,  
and introducing amateur radio to tomorrow's leaders.

mary and continuing service to the community is the club sponsored 2 meter repeater WR5AFW. Output is 146.88 while input is 146.28. The repeater has an autopatch and is soon to be updated. Through routine donations from O.U., Norman, Moore, and Oklahoma City hams, the club has purchased this year a GE Progress Line machine, a Phelps - Dodge Duplexer, and an autopatch. The duplexer should allow single transmitter and receiver operations when our trustee, Mike Salem N5MS gets the machine relocated to the highest building in Cleveland County, the O.U. Physical Sciences Building. The repeater is open for all to use whether or not they help financially maintain the machine and pay the phone bills. Except for a few old grumps, most see the need and cheerfully provide an annual donation between \$8 and \$25. Those using the autopatch usually make the heavier donation. In addition to seeing the club always has an article in this magazine another duty I have volunteered to perform is collecting and depositing these donations. This year every ham using the repeater can know when and exactly how much his last donation amounted to by calling me at 364-7979. Without financial support of our O.U., Norman, Moore and Oklahoma City hams, we could not keep the repeater on the air much less improve the system. It is hoped we can purchase a MICOR repeater within a two year time frame. This could be possible if we also receive a helping hand from the O.U. Student Congress. A MICOR would certainly be the ultimate in reliability and performance. A preliminary cost analysis indicates it is indeed feasible to obtain a MICOR to cover Cleveland and McClain Counties if we all pull together in making a donation from \$8 to \$25 a year. The opportunity is indeed ours to obtain a MICOR through a united effort! It reminds me of a saying by Austin Phelps: "Vigilance in watching opportunity; tact and daring in seizing upon opportunity; force and persistence in crowding opportunity to its utmost of possible achievement - these are the martial virtues which command success." One thing is for sure, the opportunity to purchase one of these fine MICOR machines is ours. The rest is up to us as individuals who use the WR5AFW system.

### O.U. CLUB STATION, W5TC, GETS NEW RADIO EQUIPMENT

As reported in the last issue, the O.U. Student Association through a Student Congress appropriation bought W5TC a Kenwood TS-820S with matching speaker, mike, VFO antenna tuner, and SM-220 station monitor. They also bought a Ham IV rotor. This appropriation was the largest single appropriation in the history of the club. The money came from student activity fees. Other campus organizations regularly receive support for postage, posters, and speakers of campus wide interest, but our appropriation was for equipment only. These activity fees are not tax dollars but are paid by each and every student to support the organizations and clubs within the O.U. Student Association. John Stehr N5ABC, our W5TC trustee is currently working to assemble a 40' tower recently donated to hold the Ham IV rotor and tri band beam. The tower was donated by John Lewis WB5YJP, a Moore ham and benefactor to the club. John is also securing approval to install a 25' VHF tower donated by Sid Gerber W5KOZ. Sid is a benefactor to us and a member of MORI, a fine CORA club located in Oklahoma City. We are hoping to develop W5TC into a first rate club station within two years. We plan to do this mainly through donations of small items, hopefully donated by Norman, Moore, Oklahoma City or other hams, and through "high dollar" equipment hopefully bought with student appropriations. For small items needed, contact John at 321-5210 or 364-8761. The effort seems worthwhile when we hear a foreign student's thrill to being able to talk to his family in a faraway country or one of the USPI students keeping a schedule with his family back home.

Nathan Kirby KB5BF



### "SHINE ON HARVEST MOON"

Yes, it's that time of year again for those of us in rural areas, and it is certainly a biological time of year for the "Wheat Straw" ARC. It has been a good year and more "Wheat Straw" is now being re-cycled into the ground than has been produced in many seasons. The Lord has blessed with an abundant harvest and we are joyful.

And speaking of harvest - we combined 25 Amateur heads at Watonga last Sunday. Marvin WA5JHB got the machine rolling at the usual time and we made quite a run through business and fun. With field day being the next activity on the agenda it rated number 1 in order after the scribe WA5PFK jogged our memories with minutes of the last meeting. For those of you who have attended field day in the past I understand it will be at the usual location southwest of Calumet on June 30 & July 1, with Saturday night being the time for fun and games, pot-luck hamburger fry, and hopefully home-made ice cream. Yum!Yum! YU'ALL COME! Send! Receive! and Enjoy! even spend the night and get an early start on Sunday. Then recuperate a few days and get ready for "HAM HOLIDAY '79". A motion was made and carried to have a table at the Ham Holiday flea market, so anyone who would like to sell, trade (unload) any good "Junque" contact Joe WA5FLT so he can reserve table space. We will need volunteers to man the booth so let Joe know if you will be willing to help. We even plan to un-man the booth with some YL volunteer's so this may be a good time to shop for some real specials. Ha!

Following up on requests for procedures in handling emergency traffic - Leonard WA5FSN began us on a study of official ARRL regulations for passing traffic, and also distributed study manuals courtesy of the ARRL. There seems to be a genuine interest in this area and we appreciate the ones willing to donate the time and effort to assist.

#### TIME OUT!

That's right - right here we took time out to stock up on Punch & Cookies and enjoy the slides that Ralph WA5PFK brought of former "Wheat Straw" activities; and being a Ford man I guess it was just natural for a couple of pictures of "Twin I Beams" to make their way into the file. REALLY RALPH !!!!!!! We also have talent I wasn't aware existed - How about that Perry? Anyone else loaded with surprises?

Meeting adjourned with Geary tentatively set as the next meeting place. Join in on the net 01-61 Wednesdays @ 9 PM for more information. We were happy to welcome those back who had been unable to attend, and also our visitors. Bob, a visitor with WB5JNT is getting fixed up with a radio so he thinks he will just get a license to go with it. Now there's a winner! I think antenna's are beginning to sprout in his ears too.

We missed you delinquents - See you June 30

73

WB5WTN - Reporter

Anyone interested in a complete file of "73 Magazine" ? If so - write me.  
F. C. VonWicklen, WA5FFE 607 E. Oklahoma St. Weatherford, Okla 73096

# AMATEUR RADIO OPPORTUNITY!

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WB5YLZ	Mr. Charles Sullivan
WD5KFT	Mrs. Clara M. Storm
WB5EVO	Mr. Paul Adams
N5FM	Mr. Frank McCollom

and a host of other wonderful fellows and gals  
too numerous to enumerate!

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This ad was submitted by WA5CZN in  
appreciation of many happy years  
with the 22/82 crowd.

REMEMBER: 6M AM-50.25 MHz-----ATV 439.11 MHz



#### MEETING HIGHLIGHTS

The June meeting of The Oklahoma City Autopatch Association was held on June 19<sup>th</sup> and turned out to be an extremely interesting one. Frank introduced Ken Sliger and Martin McCormick (WB5AG2) both of High Technology, Inc.. They then gave a very informative demonstration of the Apple II computer. Martin showed us several programs he has worked up, and also a machine he built that lets the computer talk to him, and since Martin can not see with his eyes it is just the thing for him. It was not only an informative show, but was also intertaining. Makes me a little ashamed tho of the complaints I sometimes have with reading the small print on equipment diagrams. All of us at the meeting were pleased with the demonstration. Wish everyone could have been able to be there.

N5IH

#### FOOD FOR THOUGHT (By N5IH)

I would like to draw everyones attention to their copy of the Constitution of the Oklahoma City Autopatch Association, Inc.. Everyone was at one time or another supplied a copy, so there should not be any problem, but just in case your copy is not readily handy I will highlight parts of it. The point I would like to make is in ARTICLE III, sections 3, 1, 6, & 5. in that order. Briefly stated these sections of Article. III state that in order to conduct business at a club meeting there must be at least 1/3 of the voting membership present. This brings up some very interest ing effects. The least of which is that the business everyone thought was conducted at the May meeting was not at all conducted. The effect of sections 1,6,&5 make things even more interesting, for if the business had been conducted the mctions that were made would have been out of order anyway since they would have been made by inactive members, and therefor non-voting members. Very interesting isn't it !!!

I therefor draw this conclusion; The meeting in May was not a "duly constituted meeting" and therefor NO business transpired. In other words there were no motions and no changes from the way things were befor!!!!

N5IH

#### IMPORTANT NOTE

It is very important that ALL members attend the July meeting!!!!

#### FROM THE PRESIDENT

As you can already see it is going to be extremely important for all of our members to be present at our next meeting. There is a great deal of business that needs attention NOW. Please make every effort to be there in July.

On Saturday morning June 30<sup>th</sup>, the 22-82 machine will be turned off for a period of one hour from 8 until 9 AM local time. The reason for this will be to test our disaster area communications. The City will be broken down into 4 quadrants with the dividing lines being I-35 and I-40. There will be stations in these areas going reverse on the repeater frequency. The idea will be to try to maintain contact with someone under disaster conditions. We would like to encourage everyone to participate in this program, but the only way it will mean a thing is if you check into these stations under disaster conditions yourself. In other words use emergency tactics for your station, just as if your fixed station was knocked off the air and your auto was destroyed. This means going to a little trouble to make sure you have emergency power, such as an extra battry, an also makeshift antennas like maybe a 19 inch piece of wire. Please try and join us and see if we could really be able to report on conditions under a true disaster. By the way if your car is not distroyed in the disaster meet with other hams at your nearest school.

HOPE TO SEE YOU THEN

N5FM

#### THOUGHTS (By N5IH)

FRIENDSHIP- Never explain-- your friends do not need it, and your enemies will not believe it anyway.

SUCCESS-- If you have tried to do something and failed, you are vastly better off than if you had tried to do nothing and succeeded

N5IH





## Bob's Sonar Service

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### DEPTH FINDER PROFESSIONALS

Dear Ron and Karen,

Just a short note to let you, and the C&E readers, know what happened to a couple Okla. City hams that flew the coop. Fergy Ferguson (K5SXJ) and myself, Bob McClain (N5JFH) came here to west central Louisiana and opened a depth finder repair service. We have been open one month tomorrow and, though business is slow when starting, it should turn out well for both of us.

We would like to invite all of our ham friends in Okla. City to visit with us in our new little shop at Shady Lane Landing on Toledo Bend Lake. Shady Lane is located about 3.3 miles North of Pendleton bridge (mid-lake). Any of the fellows or gals on vacation down this way are most welcome.

We would appreciate your putting a notice of this in the next issue of the Collector and Emitter.

Best 73

Bob and Fergy

### NOTES N5IH

If anyone has any questions about the disaster area communication exercise to be held June 30 please contact Frank (N5FM)

I would like to report there was no contest for the winner of my, not so prestigious, award for this month. It was won by a station that had everyone beat hands down. CONGRATULATIONS

OPTIMISM; An optimist is someone who tells you to cheer up when things are going his way.

ACHIEVEMENT; The man who rows the boat generally doesn't have time to rock it.

SATISFACTION; If you don't get everything you want, think of the things you don't get that you don't want.

EXPERIENCE; Experience is a wonderful thing. It enables you to recognize a mistake when you make it again.

N5IH

FOR SALE: Heathkit SB 102, \$359.00; SB 220, \$429.00; HP 23, \$49.00, Call Mark Adams, WA5REC, 348-7847



## Club NEWS

WSLOV  
The Elmer Gooder Memorial  
Station

### CLUB BUSINESS

SINCE THERE IS NO FORMAL MEETING THIS MONTH, THERE ARE NO MINUTES. IN FACT, THE INFORMAL MEETING TO BE HELD IN CONJUNCTION WITH FIELD-DAY WILL NOT HAVE BEEN HELD BY THE TIME THIS GOES TO PRESS. THERE ARE, I'M INFORMED BY THE PRESIDENT, KEN, WB5KHU, A FEW ITEMS THAT NEED TO BE MENTIONED.

THE JULY MEETING HAS BEEN CANCELED BECAUSE OF THE NEARNESS TO HAM HOLIDAY. THE AUGUST MEETING WILL BE A WATERMELON PARTY WITH THE AERO CENTER CLUB ON THE THIRD FRIDAY IN AUGUST.

THE ROTOR THAT GOES WITH THE VHF MAST ON THE RED CROSS BUILDING IS STILL MISSING BUT IT IS JUST AS WELL. HERE IS A BETTER IDEA... THE ROTOR ON THE HF BEAM IS A LIGHT DUTY TYPE AND IS BEING REBUILT. IF IT IS PUT ON THE VHF MAST IT WILL PROBABLY BE MUCH MORE SATISFACTORY IN THAT POSITION. WHAT THE CLUB NEEDS IS A REALLY GOOD DEAL, LIKE FREE, ON A HEAVY DUTY ROTOR TO TURN THE HF AND HORIZONTAL BEAMS ON THE TALL TOWER. IF ANYONE HAS ANY IDEAS, SEE C. Y., WB5TKG, OR ANY OF THE CLUB OFFICERS. JOE, K5JB, SEC<sup>Y</sup>

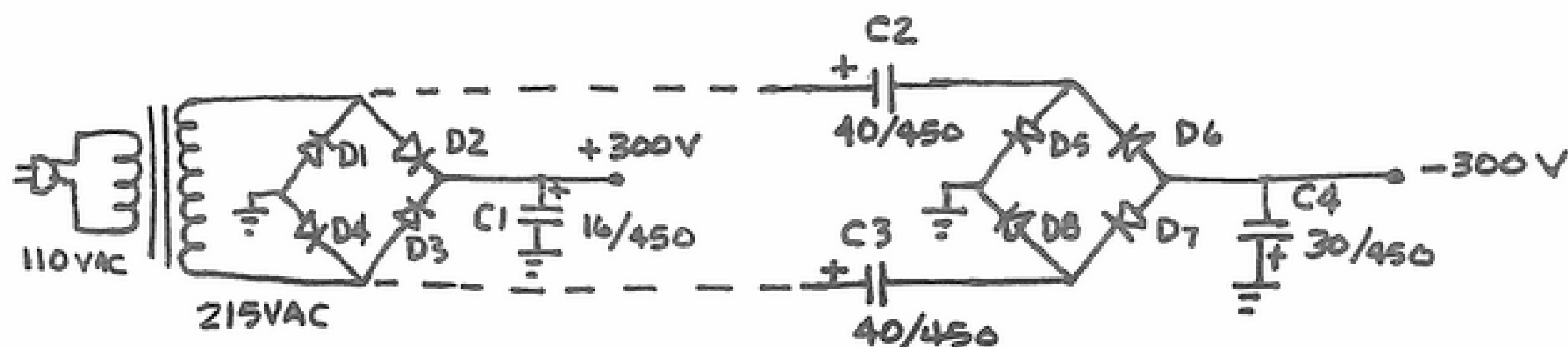
### ATLANTA HAMFEST

OKLAHOMA CITY WAS DULY REPRESENTED AT THE ATLANTA HAMFEST BY JOE, K5HMD, MIKE, N5MS, GLEN, WD5FVI, CHARLES CUNNINGHAM, AND MYSELF. I THINK MIKE IS GOING TO ELABORATE, WHICH IS SOMETHING HE DOES QUITE WELL, SO I WON'T SAY MUCH ABOUT IT EXCEPT I'M A TIRED SON-OF-A-GUN RIGHT NOW. I AM LEAVING TOMORROW FOR A BUSINESS TRIP AND I'M GOING TO KEEP MY MATERIAL BRIEF AND GO TO BED EARLY TONIGHT. PERHAPS NEXT MONTH I WILL PREPARE A REPORT ON THE NEW BEARCAT 220 SCANNING RECEIVER WHICH INCLUDES THE AVIATION BAND OF 118 TO 136 MHZ. I COULDN'T RESIST IT ALONG WITH ABOUT TEN POUNDS OF STUFF FROM THE FLEA MARKET. JOE, K5JB

### TOKEN TECHNICAL TIDBIT

DID YOU EVER NEED A MINUS VOLTAGE IN ADDITION TO POSITIVE VOLTAGE TO RUN SOMETHING LIKE AN OPERATIONAL AMPLIFIER, OR PARTS OF A MICRO-PROCESSOR CIRCUIT? UNTIL THE OTHER DAY, I ALWAYS DUG UP A COMPLEX TRANSFORMER OR SIMPLY WIRED UP MULTIPLE SUPPLIES. WELL LAST WEEK I HAD A BRAINSTORM AND INVENTED A CIRCUIT WHICH HAS PROBABLY BEEN INVENTED A THOUSAND TIMES BEFORE, BUT I DON'T REMEMBER SEEING ONE QUITE LIKE IT.

I WAS TRYING TO POWER A KLYSTRON...THAT'S ANOTHER STORY...AND I NEEDED APPROXIMATELY PLUS AND MINUS 300 VOLTS. ALSO I WANTED TO RUN IT FROM A 12 VOLT SOURCE. I HAD A FLEA MARKET SPECIAL OSCILLATOR TYPE POWER SUPPLY THAT PROVIDED THE BASIC 300 VOLTS BUT I NEEDED THE MINUS VOLTAGE ALSO.



MODIFIED POWER SUPPLY FOR NEGATIVE OUTPUT

IN THE FIGURE, DIODES 1 THROUGH 4 AND CAPICATOR 1 WERE IN THE ORIGINAL CIRCUIT. THE OSCILLATOR HAS BEEN REPLACED WITH A CONVENTIONAL 110 VAC SOURCE TO SIMPLIFY THE STORY. IF YOU STUDY THE TRANSFORMER SECONDARY AND BRIDGE, YOU WILL SEE THAT THERE IS AT NO TIME A MINUS VOLTAGE AVAILABLE. THIS HAD ALWAYS THWARTED ME BEFORE I GOT MY BRAIN-STORM. BORROWING SOME IDEAS FROM VOLTAGE DOUBLER CIRCUITS, I USED A COUPLE OF CAPACITORS TO TRICK SOME ELECTRONS INTO A CORNER WHERE I COULD GET A SUBSTANTIAL VOLTAGE AND CURRENT WHERE THERE WAS NONE BEFORE. HERE IS HOW IT WORKS.

THE ADDED CIRCUIT IS SHOWN CONNECTED WITH DASHED LINES. THE PARTS AND VOLTAGES ARE THOSE IN THE CIRCUIT I WAS WORKING WITH BUT THERE IS NO REASON WHY THE SAME THING WOULDN'T WORK AT TWELVE OR FIFTEEN VOLTS LIKE ONE FINDS IN OPERATIONAL AMP SUPPLIES. CONSIDER A CYCLE OF ALTERNATING VOLTAGE AND I THINK YOU WILL SEE THAT IT IS REALLY PRETTY SIMPLE.

STARTING WITH THE TOP OF THE SECONDARY OF THE TRANSFORMER POSITIVE WITH RESPECT TO THE BOTTOM OF THE WINDING. AT THIS TIME, THE TWO DIODES D2 AND D4 ARE CONDUCTING AND CAPACITOR C1 IS GETTING A CHARGE. AT THE SAME TIME, D5 IS CONDUCTING AND C2 IS GETTING A CHARGE. LETS ASSUME THAT C2 IS CHARGED UP TO THE FULL PEAK SUPPLY VOLTAGE OF 300 VOLTS. THE LEFT SIDE IS POSITIVE WITH RESPECT TO CIRCUIT GROUND.

NOW, WHEN THE TRANSFORMER REVERSES POLARITY, THE TOP WILL BE AT NEARLY GROUND POTENTIAL BECAUSE D1 GOES INTO CONDUCTION. THE POSITIVE END OF C2 SEES A SUDDEN DOWNTURN OF VOLTAGE FROM 300 VOLTS TO ZERO VOLTS. BECAUSE OF THE ELECTRONS STORED IN C2, IT RETAINS ITS VOLTAGE DIFFERENTIAL OF THREE HUNDRED VOLTS BUT NOW THE RIGHT SIDE OF C2 IS 300 VOLTS BELOW, OR MINUS 300 VOLTS WITH RESPECT TO, THE LEFT SIDE. SINCE THE LEFT SIDE IS AT ZERO VOLTS, OR IN OTHER WORDS, GROUND POTENTIAL, THE RIGHT SIDE IS AT MINUS 300 VOLTS. DURING THIS HALF CYCLE, D6 CONDUCTS AND A PORTION OF THE CHARGE IN C2 IS DRAINED INTO C4. ON THE NEXT HALF CYCLE, THE IDENTICAL THING HAPPENS TO C3 AND D7 CONDUCTS CURRENT CAUSING C4 TO GAIN ADDITIONAL CHARGE.

REGULATION ON THIS KIND OF CIRCUIT IS NORMALLY POOR BECAUSE CAPACITORS ARE CHARGING ON ONE HALF CYCLE AND GIVING UP CHARGE ON THE OTHER HALF CYCLE. IT WAS NOT NECESSARY TO MAKE THIS CIRCUIT FULL WAVE BECAUSE MY CURRENT REQUIREMENTS WERE SMALL BUT I GOT CARRIED AWAY BECAUSE I WANTED TO SEE HOW PRACTICAL THE CIRCUIT REALLY WAS.

TO TEST THE THING I SELECTED A RESISTOR TO DUPLICATE THE LOAD THAT THE KLYSTRON WAS GOING TO PUT ON THE PLUS SUPPLY, OR 30 MA. UNDER LOAD, THE SUPPLY VOLTAGE SAGGED 10 VOLTS. MOVING THE LOAD TO THE MINUS SUPPLY RESULTED IN THE SAME VOLTAGE SAG, OR 10 VOLTS. NOT BAD WHEN YOU CONSIDER THE GYRATIONS THE ELECTRONS ARE GOING THROUGH TO GET TO THE -300 VOLT OUTPUT.

WHERE THIS WOULD BE REALLY USEFUL IS WHERE ONE HAD A GOOD 12 OR 15 VOLT SUPPLY WHICH USED A FULL WAVE BRIDGE AND IT WAS NECESSARY TO GET A MINUS VOLTAGE FOR SOME REASON SIMULTANEOUSLY WITH THE POSITIVE VOLTAGE. IT WOULD BE ESPECIALLY GOOD WHERE THE SUPPLY WAS PUTTING OUT 18 VOLTS, OR SO, AND THE OUTPUT VOLTAGE WAS BEING REGULATED. THE NEGATIVE VOLTAGE WOULD BE THE SAME MAGNITUDE AS THE UNREGULATED POSITIVE SUPPLY VOLTAGE AND THERE WOULD BE A MARGIN AVAILABLE TO ALLOW IT TO BE REGULATED ALSO. UNDER THESE CIRCUMSTANCES, THE MINUS SUPPLY COULD BE QUITE PURE AND REQUIRE NO EXCUSES FOR QUALITY.

THERE IS NO END TO THE TRICKS THAT CAN BE PERFORMED WITH STEERING DIODES AND CAPACITORS WHEN THERE IS AN AC SUPPLY AVAILABLE TO PROVIDE THE PUMPING ACTION.

JOE, K5JB

# kay

C O U N T Y   A M A T E U R   R A D I O   C L U B  
C O U N T Y   A M A T E U R   R A D I O   C L U B  
C O U N T Y   A M A T E U R   R A D I O   C L U B

Since this is our first contribution to the CORA Collector & Emitter, I won't guarantee spelling, typing, or article content to be perfect. Anyway, I want to take this opportunity to thank CORA for extending membership to our club. The Kay County Amateur Radio Club currently numbers about 40 hams scattered thruout Kay and Osage counties. The club meets on the third Thursday of every month in the basement of the Security Bank of Ponca City. The club sponsors the local 37/97 machine, which has excellent coverage in northern Oklahoma and southern Kansas. We welcome any and all passing our way to make use of the club repeater, and if they happen to be in town during a club meeting night, to drop in and meet our local group. The club repeater can be easily reached from I-35 for the last 25 miles of travel in Oklahoma.

Our club officers for the 1979-80 year were elected at our May meeting and are: Chuck Willis, WB5DOT, President; C. L. Hallmark, W5ZWM, Vice President; Jay Williams, W5TXF, Secretary & Treasurer.

By the time this reaches our members, Field Day 1979 will be past history. Our club will have a single station on the air this year as opposed to the 3 stations last year. I think the chiggers and mosquitoes got the best of most of our participants last year. This year, a lot of our ace operators came up with vacation planned for that weekend!!! Hopefully we will not have a generator meltdown this year. A Heath HW-101 doesn't work worth a hoot on 80v! You also wondered why that KL7 didn't answer, and then discovered your keying hand and bug swatting hand had gotten mixed up ... long swat, short swat, long swat, short swat..... Oh well, better luck this year. Hmmm, maybe on second thought I should reschedule my vacation.

One of our newest hams is Bob Moore, WA5ETA, a newly licensed novice who is moving to the Oklahoma City area. Bob had a little more difficulty than most with getting his license than most of us since he is visually handicapped. Thanks to a lot of hard work by Grady Skillern, WB5SAG, and several other club members, Bob now is the holder of a new novice license and the first WA5 call that I have heard issued in these parts in many moons. Any of you fellows who hear Bob, give him a lot of encouragement and help as we know he will appreciate it.

Hopefully, next month I will have my thoughts a little better collected before I set down to write and can shed some wise words and wisdom from northern Oklahoma.

Chuck, WB5DOT

*(Editors note: Don't blame Chuck for the mistakes, due to space considerations I retyped his submission. Joe, WA5ZNF)*

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# Mid-Oklahoma Repeater Inc.

A NON PROFIT ORGANIZATION  
OF RADIO AMATEURS DEDICATED TO PUBLIC SERVICE

Another month gone bye,bye. Where have all the months and years gone so quickly? Gone with fater time, would seem to be the obvious answer. Seems like it's like the song "Another Day Older, and Deeper in, etc". Oh well, thats life, take it or leave it as it comes and goes, like it or not.

As noted in last month's article, my notes were confused a little- I hope that's all. The following correction needs to be made with all due apologies: Jim Kelly, WA5LKS, was auctioneer for our flea market. John Sneed, WB5LER, won the door prize. Real sorry about that.

Fellows, thanks for the corrections., John.  
incidentally, I forgot too many things-I forgot to get the name of the young lady that won the door prize-more apologies-correction next time.

There seems to have been a big improvement in the cleanliness of the room after adjournment. Quite a number were noted cleaning up their litter, and the room looked almost like the janitor had done the work himself. I notived our new novice door prize winner running the vacuum cleaner on the rug outside the meeting room. Nobody can beat a lady in pushing one of those gadgets.

Meeting was called to order at 8:10 pm by the president, Chuck, K5NK, with the explanation that the executive committee was in session and some things take longer than expected. Not unusual for most any thing. Ever try to explain to your wife why you took so long to run an errand? Possibly, a side trip to the electronics store, or something else comes up or happens - possible artificial reasons or fabrications not counted.

There were self introductions all around and we had a good crowd. The treasurers report was read and accepted.

There were some announcements concerning CORA and the C&E. Copies of this issue are going to all ARRL members in the state.

Because the ARRL convention and HAM HOLIDAY are combined again this year, it ought to be a "bang-up" affair. All input to C&E articles of general interest, technical articles, and even maybe, some of the old jokes you heard years ago - ones that everyone has forgotten about, are silicited.

Jim, K5VRL, gave a report on the new 34/94 machine to be installed. A plaque of appreciation to Ron, WD5FRQ, for help in a delicate matter, will be presented to him later, because he could not attend this last meeting. You have our thanks, Ron.

CORA is making plans to coordinate the handling of emergencies. I was supposed to call Bob, W5HXL, for further details, but I slipped and didn't. Hopefully the information will be available elsewhere in this issue. He told me to call him, but I didn't get around to it. Keep that foot on the ground, Bob,sorry that I forgot what you told me.

It was announced that 07/67 would serve as a backup repeater for the weather net, in case 22/82 was down in the future. I said "future" actually it's an old arrangement that was re-affirmid. It is to be hoped that lightening doesn't strike either repeater again. A discussion concerning the Night Owl Net releasing 07/67 in case it was needed in lieu of 22/82 in an emergency, was considered a moot question. It was approved that the Night Owl Net could move to 34/94 if 07/67 was not available for any reason, providing the Red Cross doesn't need it.

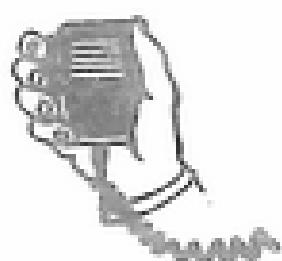
Adjourned for coffee and calories, and then:

The program was presented by Fred, K5HFN, of pictures taken in Iran. They were clear and interesting. Thanks, Fred, they showed things we wouldn't have known otherwise.

CORA is proposing a raffle to raise money for a new computer printer that will give your C&E a more professional look. Announced for consideration by Bob, W5HXL.

Something was said about arrangenents being made to keep unauthorized persons out of disaster areas. Some people always have to take advantage of unfortunate situations.

George, WB5NMK



## THE ZANY NEWS FREQUENCY

By JOE, WA5ZNF

I A P O L O G I Z E to Ken Ford, WB5KHU, in advance, that's before he looks at the address label on his copy of this months C&E to see if his membership is current. This being our first full and complete issue that is addressed with labels from the new ACARC computer there was bound to be a few mistakes and Ken's label was one of them. He is President of the Oklahoma Central Amateur Radio Club and is certainly current in his dues. There may be others and I hope they are patient with us in getting everything right. The top line on the labels should tell your club/subscriber status. If you are not current in any club or your subscription has expired 6 x'es (xxxxxx) will appear after your name and next month the computer will not print a label unless an update is received. SO -- if your label has the x'es and a BLUE check mark this is your last copy, unless you contact your club secretary or if a paid subscriber send a check for \$3.00 to CORA.

Please be patient with us, we are doing the best we can and by next months issue it should all be straightened out. All of the club representatives are hereby thanked for their help in this conversion.

I have "retired" again, and for that reason we are moving all activities for the CORA Collector & Emitter to The American Red Cross building, home of W5LOW and the Oklahoma Central ARC. All mail should still be addressed to our box number, see page 4 of this issue and if you need any information, etc. call me at home, 737-1044 only.

A R R L M E M B E R S who are not members of a CORA associated club are getting a copy of this issue to remind and invite them to the ARRL State Convention and HAM HOLIDAY at Lincoln Plaza on July 27, 28 & 29. Pre-registration forms which make you eligible to maybe carry home a TEMPO S-1, 2 meter synthesized rig is elsewhere in this issue. Of course your award for attending might be a KENWOOD TS-120-S or any of a host of other ham items but the eyeballing, fleamarket, programs and so forth will be worth the registration fee. This is probably the only absolutely non-profit gathering around since all registration money is used to add to the awards and some minimal expenses. CORA nor any of the affiliated clubs get any money from the pot, all they get is a lot of work and a lot of fun.

If you are not, are can not be, a member of one of the affiliated clubs, consider subscribing to the C&E. It says Central Oklahoma in the title but a look at the list of clubs on page 4 shows that the word Central could easily be changed to Co-operating.

Joe, WA5ZNF

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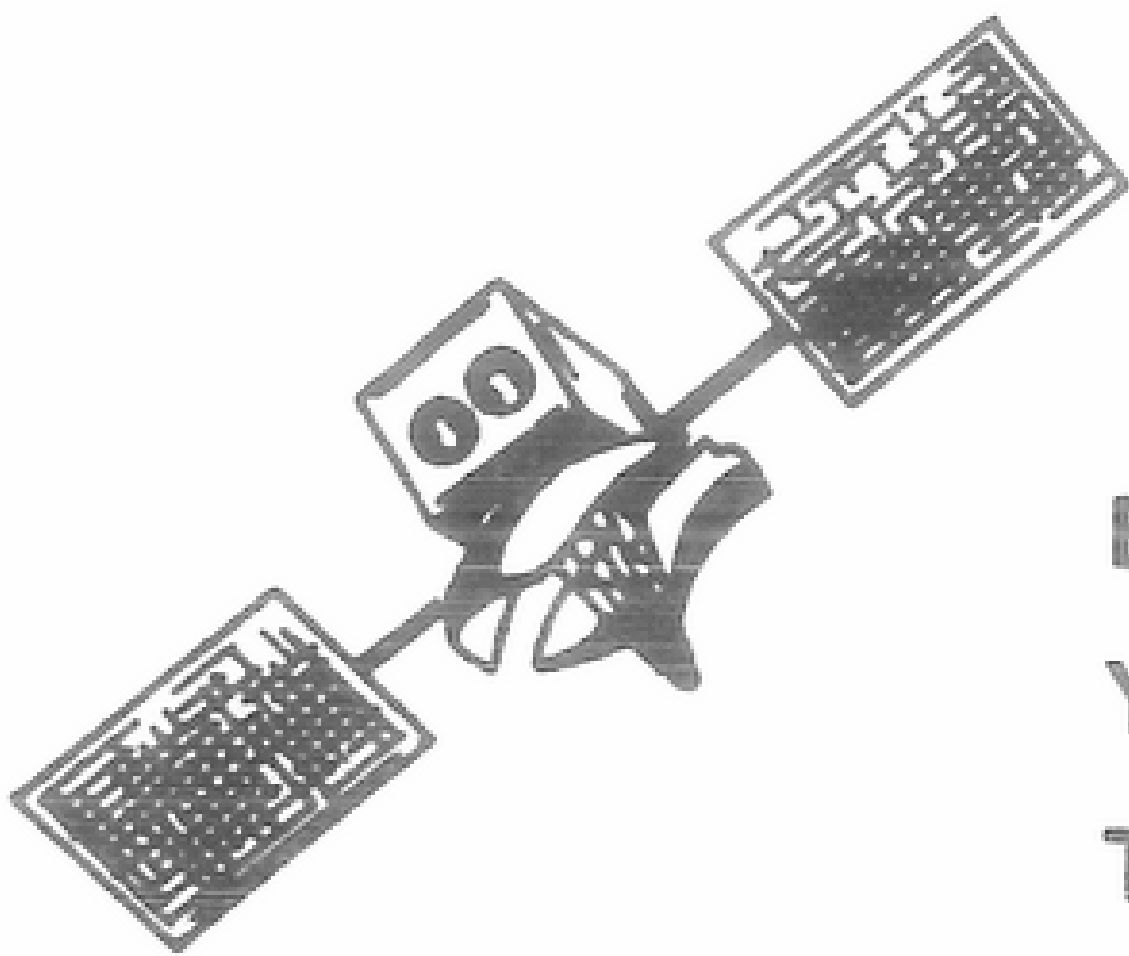
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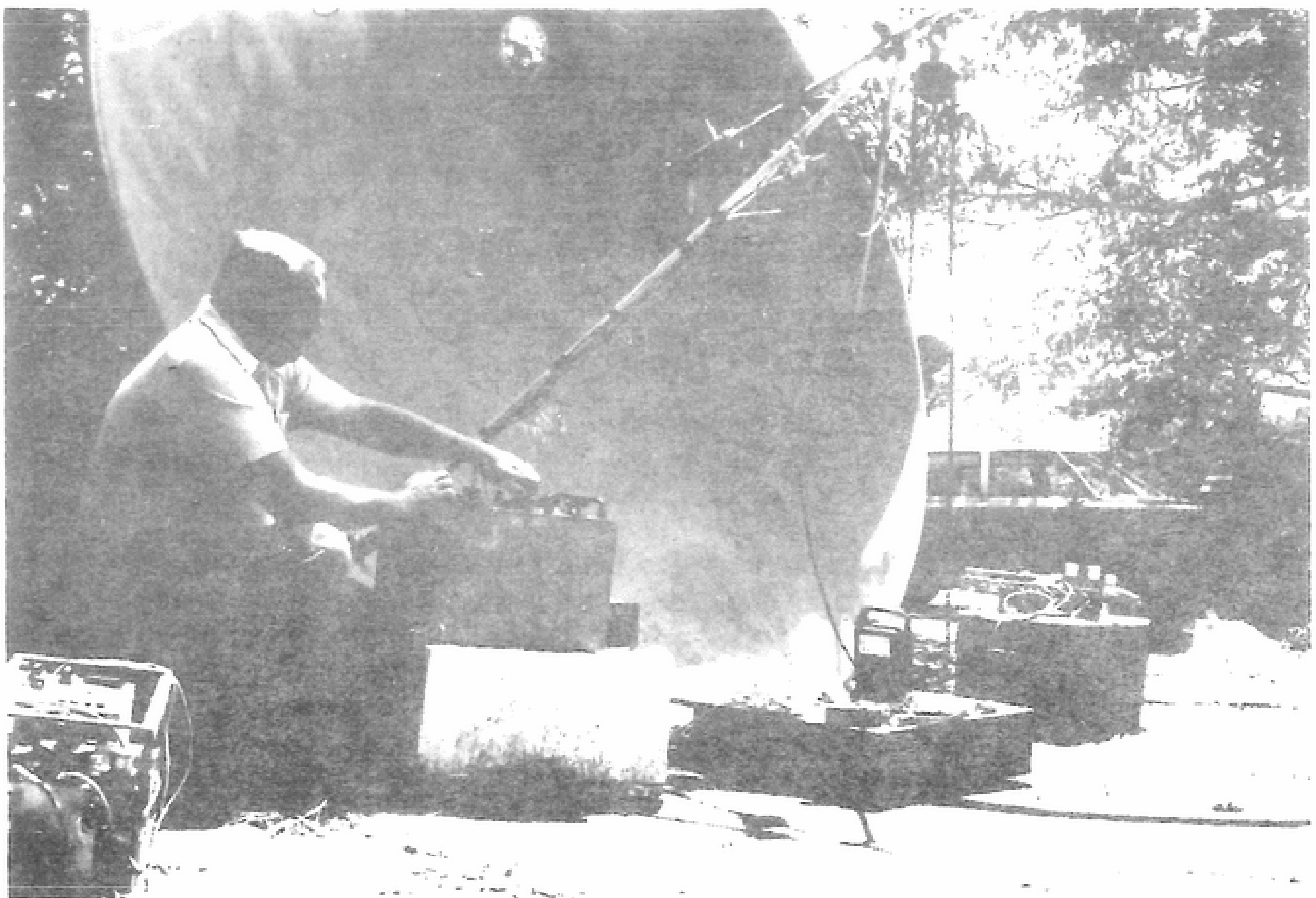
Where most Amateurs and CB'ers have coffee and eat well prepared food. Meeting place of the Warr Acres Radio Men Morning Coffee Club. Come and join us at 09:30 each morning except Sunday. Normal attendance includes W5JJ, W5TY, W5HFU, N5SW, W5TMY, W5PP, W5HMT, W5LFK, WD5FXP, W5HXL, W5NL, W5MCJ, W5KE, WA5JGU, K5VWQ, K5HMI, WB5KCU, W5AA, W5AS, K5DZV, W7LLP, W0RTM, W5AYL, K5BJJ, W5DDI, W5EHR, K5JL, W5NTL, WB5VCA, W5YFK, and others.

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## HAMFESTIVALLING IN DALLAS AND ATLANTA

No doubt this is the hamfestival season. For those of us in the Midwest, it seems to begin with Dayton the last weekend in April and continues to HamComm in Dallas through Atlanta in mid June to Ham Holiday in July. For a few stragglers, Chicago's Expo is a late bloomer in September. They always seem to schedule during the OU Home football schedule which is death to any chance I might have to attend. In any case, I planned a brief sortie to Dallas with Stan WB5UIY, Bob WA5BQX, and Howard W5UVI. Bob and Howard also took along their respective YL's. I wasn't sure that I could afford the trip since Joe K5HMD, JB K5JB, and Glenn WD5FVI have had a trip to the Atlanta Hamfest planned on the back burner for a few months now. Throwing caution and cash to the wind, Stan and I loaded up and convoyed to Dallas for HamComm the first weekend in June. We went down on Friday nite and stayed the nite. Dinner was at the superb Old San Francisco Steakhouse which featured a girl on a swing doing a routine to some live old time piano playing. Bob, Howard, Stan and I managed to wangle a table right in the line of fire, so to speak. Ahem. Another attention getter was the giant block of cheese they brought to the table as an appetizer. The rest of the meal was super and I waddled out managing a stop only to collect a few matchbooks for my collection.

The next morning we were up and out to the flea market. It was small, but mighty. I immediately spent a couple of bucks on some Ht-100 case parts and a 10.5 Ghz oscillator. Humm, the cash is going faster than I thought. I managed to control spending a little and spent the balance of the day in and out of the flea market and commercial exhibits spending more judiciously. I managed a few small bargains including a dozen or so microwave X band diodes at a reasonable price and a variety of small construction items of various types.

It was gratifying to see the large contingent of Oklahoma amateurs who traveled to Big D to make HamComm. I hope that the Texas group make it to Ham Holiday this July. I think that they will be pleasantly surprized.

Stan and I loaded up late that nite and rode back into Oklahoma on a wing and Stan's van's 20 gallon gas tank. It was the end of the month and the Texas gas allotment had to wait until monday for delivery. So many gas stations were closed, I thought we would have to stop at Taco Bell for gas. Stan racked out in the back and I drove the final leg back. I had to wake Stan outside of Norman when the main gas tank ran out and the engine began to cough. As we pulled up to my house and I unloaded the van with the goodies that I brought back, I was very grateful that I had turned down the offer to buy two 10 Ghz oscillator sources which appeared to be about 10 pounds per Gigahertz each. I made it all in one trip with some assistance from Stan.

The commercial exhibits at HamComm were good. I noted a few of the small parts dealers were doing a land office business selling all types of recent surplus. The usual commercial exhibitors from the Dallas areas were there and a couple of the national exhibitors that you normally see. I enjoyed it and the flea market.

For the past serveral years, K5HMD, WA5JXX and myself have made an annual trek to Dayton to this mecca of amateur hamfests. Joe and Roger decided to forgoe the trip this year in favor of a short trip to Atlanta on June 16 and 17 for the Atlanta Radio Club Hamfest. I haven't ever met anyone who made it to Atlanta. A friend of Joe's had made it up there last year and said that the flea market was fairly decent. We rounded up Joe K5JB and Glenn WD5FVI to fill up the 310 twin engine airplane and planned the trip to leave on Friday before the hamfest. After all, Atlanta is not a particularly slow place to visit and we wanted to take in a few sights before we got into the serious hamfesting.



Roger got tied up in Mexico the week before Atlanta and it suddenly appeared that he might not be able to make it. It might have been just as well. Joe had planned on making the flight nonstop and I just couldn't imagine that Roger would survive a four hour flight to Atlanta after having just returned from Mexico. I suggested tying a plastic bag around his entire body and just strapping him in. We scurried around getting ready for the trip and loaded up on Friday morning and made it wheels up by 8:00 that morning after a minor problem with the plane.

The weather looked great, so I decided to forgoe my usual Dramamine cocktail ( a Dramamine and a glass of milk) and tried to catch up on my sleep in the back of the plane. I reminded Joe that I was the farthest from the center of gravity of the plane and that meant that I would move the farthest in any turbulence and would not be responsible for unnecessary flight interruptions caused by same. Needless to say, the flight was a milk run and the short stop in Greenville, Mississippi broke my perusal of the morning comics. We landed at Charlie Brown airport on the north side of the city and rented a car and made ourselves to the downtown Marriot Hotel convention site. Wow. We got a corner room with full glass windows extending the entire length of the room on two sides. I ran down and sneaked a peek of the commercial exhibits which were located in the same building. The facilities were excellent. The Atlanta crowd had planned the flea market in a parking garage which extended for five floors. No hot sun to worry with and rain was of no concern except for those on the top floor. Very clever!

Joe took off to visit some relatives in Atlanta. Glenn and Charlie (Roger didn't make it back in time) drifted off somewhere and JB and myself wandered up to the Peachtree center for a friendly libation some 300 feet or so above the ground. Tall buildings like the Reunion Tower in Dallas are becoming extremely popular all over the country and the Peachtree Center like the Reunion Tower has a rotating Bar at the very top. We caught the elevator up (they don't charge for the ride like the Texans do) and JB bought the first round (literally) and I got the second. JB then suggested we go to Pittypat's Porch Pantry, a restaurant he had visited on a previous trip. It was right across the street and we went in. I was carrying the souvenir hurricane glass from Peachtree that came with the second round. Needless to say, the food was fabulous and it just kept on coming out. The special chicken I got allowed me to keep the cast iron pan it was cooked in and on the way out after stuffing with soup, boiled shrimp, black eyed peas, spoon bread, greens, I loaded up with several souvenir glasses and mugs for various friends back home. We found out too late that mint juleps were four dollars and the glasses they came in were just two dollars. All we wanted was the glass. I think that a julep is mint (or meant) to sipped on the veranda while wearing a white panama hat and Colonel Sanders suit. On the way out, a fellow offered to sell us a Seiko watch. I said no and beat a hasty retreat. Atlanta suffers from a serious crime problem and Charlie recounted the story of a man he knew who was knifed outside his motel. I was carrying the cast iron skillet I got with Dinner and I can only say that anyone who made the wrong move toward me would receive a pan fried headache for his troubles.

JB and I got up the next day and ventured into the flea market. That is, after we found it. It seems that there were several parking garages around the place and we walked all through one until we climbed to the top and began to look for the flea market and spotted it north of the hotel. The flea market was very impressive and featured five floors of goodies. I found a HT-220 450 board with a few parts stripped out to try to build up into the HT-100 case I got in Dallas. I decided to replenish my dwindling coax connector supply and found some very reasonable prices on the fourth floor. JB and I combined our resources for improved buying power. The commercial exhibits were great and interesting. I saw Robbie WB5RXC, the only other Oklahoman I saw. I think that we might plan a return engagement next year.

Micheal Salem N5MS

## FUNDAMENTALS OF POLICE RADAR--OR REFLECTIONS ON THE DOPPLER SHIFT

The scene begins late at nite. The hapless motorist is speeding along the interstate on his way home for the nite. Suddenly, the air is split with the howl of a police siren and the motorist is forced over for a brief stop and a substantial contribution to the local court fund of the county. Police radar strikes again.

Use 10.5 GHz or lose it to the Smokey is a cry that has resounded in recent months as speed detection by police radar has come under attack from its previously seemingly impregnable position. Recently, Chief Administrative Judge Alfred Nesbitt in Dade County, Florida recently banned the use of radar as sole evidence in speeding cases, a courtroom ruling that may set a precedent across the nation. The case cleared some 80 cases from Judge Nesbitt's docket and may have jepordized some additional 4,000 potential speeding convictions pending in Dade County. It also provided the first comprehensive review of the use and accuracy of radar since its use was upheld in a 1955 Supreme Court decision.

Dale Smith of Troy, Ohio, founder of Electrolert, Inc., the maker of the "Fuzzbuster," was part of the driving force behind the decision. He served as consultant and technical expert to the Dade County Public Defender's Office during the case. Prior to his involvement with Electrolert, Mr. Smith designed and manufactured police radar transceivers. Evidence of other crossover activity in this grown Electronic countermeasures (ECM) war is provided by the fact that Microwave Associates (the manufacture of the beloved amateur GunnPlexer) provides most of the Gunn diodes for the transmitters in the police radars and also provides most of the receiving diodes used in various detectors. Both of which goes to prove that you can't tell the players without a program.

The Dade County case focused the accusing finger on police radar convictions when a local TV station aired a brief story on the problems of radar use. A house was clocked by radar at 82 miles per hour. A tree was also found to be moving down the road at a fair clip. The radar was shown to be capable of interference from a variety of sources and subject to ambiguous interpretation of its results and use. The evidence presented during trial showed technically that the radar reading can be affected by ignition noise, air conditioners, CB radios, and other nearby RF energy fields. Another and perhaps the most serious problem was clear identification of the target vehicle whose speed is sought to be clocked. Operator training and understanding of the operation and principles of radar speed detection is a serious deficiency. I have had a police officer tell me that the radar locks onto the fastest moving vehicle in its path. In actuality, the radar generally reads the speed of the largest vehicle or the closest one, whichever would produce the largest reflection in amplitude. I have also observed a police radar read out 20 miles per hour with nothing in its target view when the squad car's air conditioner was switched on. This susceptibility to vibration is not too surprizing when you consider that most radar units are calibrated by holding a tuning fork in front of the antenna and calibrating from the vibrations. One technique used in Dade County was to demonstrate how the radar went crazy when a set of jingling keys was held in front of the antenna. You can also produce false speed readings by whistling into the antenna.

What are some of the problems in the use of radar for checking the speed of motorists? Well, one is the wide variability of various manufacturers in the construction and design of units. There is no set of standards that apply. No matter how you cut it, radar speed measurement is big business these days. More than 7,000 speed-measuring devices were purchased (mostly radar) between 1968 and 1973 by police agencies armed by more than \$6 million in Federal funds. A recent upsurge in radar speed measurement devices has occurred in the last few years with the advent of the 55 mph speed limit and the fear of many states

that they would lose federal revenue for highway funds for failure to enforce the speed limit. The fact is that throughout all these expenditures, no standards exist for both performance and specifications for these speed detectors. This is expected to change within the next 90 days when the National Bureau of Standards publishes performance standards resulting from a study by the Bureau's Law Enforcement Standards laboratory. The study resulted from a request by the International Association of Chiefs of Police to the National Highway Traffic Safety Administration (NHTSA) for assistance in the development of guidelines and the establishment of a list of qualified products meeting the standards. There is no doubt that the current status of speed radar devices is in a considerable state of flux.

It has been my observation that a large number of "Fuzzbusters" and other radar detection devices have turned up in the various flea markets I have been in the last few months. Outside of the commercial vendors, I don't particularly know why individuals are getting rid of their speed radar detection devices, but it could be based on the particular notion that driving fast may be unpatriotic. I really doubt this, judging from the large number of people with and without radar detection devices that whoosh past me on the road. I have never had a radar detector, but it appears to me that the increase of population of radar detectors in the flea market may have resulted from unsatisfactory devices or unsatisfactory results on the part of the user. Like the police, the radar detector user must be particularly observant to insure the proper use of his device. I also do not think that the ownership and use of a radar detection device is the sign of a renegade or outlaw. I have seen many people speed without them and I have seen Fuzzbusters sitting on the dash while the motorist poked along at a comfortable 55 mph. There is no doubt that there is a segment of the population who use these devices to evade the law. But the foibles and inaccuracies demonstrated by the Dade County case can only show that a radar detection device may be useful to prevent one from being improperly charged with speeding when he actually is not. And it can and does happen. It may be necessary to remind the reader that the scientific principles of Doppler Shift upon which speed detection is based is still very much a part of our jurisprudential system. Rather, it is the uncertainty of the various devices and procedures that are suspect. Judge Nesbitt did not abandon the use of radar in Court, rather he stated that he would not accept radar as the sole evidence against a speeder. His decision points up the deficiencies behind speed detection by radar as they currently exist. There is no reason to think that this will change after the publication of standards by the NBS. Even motorists who may never speed may have reason to fear speeding tickets as long as the present attitude of high infallibility of radar devices continues. Reliance upon scientific principles as a basis for accuracy does not automatically transfer to the equipment and operators by mere juxtapositioning. There is ample opportunity for the innocent motorist to be ticketed. Also, some radars have calibrate, speed reset, and other control buttons that can be manipulated to provide any desired readout, regardless of the actual speed of the vehicles involved. This is very handy for the local governmental unit trying to generate needed and easy revenue from motorists passing through. The radar detector may thus be a necessary companion for the totally law abiding citizen.

In the next couple of issues of C & E, I will describe a complete radar unit and the principles and hardware used in design and construction. The construction of some of these devices is the result of much thought. I have also peaked my interest in the 10.25 Ghz amateur band and will describe some experiments I have conducted. Most commercially available police radar units were in the 10.5 to 10.55 Ghz band (X Band) until 1975. After that the popularity of hand held radar speed detectors in the 24.05 to 24.15 Ghz radar band (K Band) has increased. My interest in X band has been growing since the introduction of the GunnPlexer by Microwave Associates several years ago. It took a decided upturn when I purchased a 10.25 Ghz Gunn oscillator in the Dayton Fleamarket. I also acquired a 17 db horn and a generous local amateur donated a couple of diode

detectors to my cause. Since then, I have acquired another oscillator source at HamComm and a few other and sundry devices and items at Atlanta. I must admit that operation at X band is quite different that my previous fiddling with the DC bands down around 450 Mhz. (Its all relative). One ultimate has been the possibility of a microwave link for local control of WR5AFW in Norman. The bandwidth availabilities (110 simultaneous wideband (4.5 Mhz) TV channels) have also not gone unnoticed. The fact that it no longer takes a couple of six foot racks to get on microwaves is also an attractive alternative that allows me to keep; to my cardinal flea market scrounging rule of never buying anything that I can't carry in one hand unless I have an immediate use for it.

#### DOPPLER SHIFT (Or Can Mr. Doppler Shift for Himself?)

The Doppler Principle is quite well know and relatively simple. Simply stated, it says that if you shoot a radio signal into the air and if it bounces off a moving object, when it comes back to you, its frequency will have been changed by an amount proportional to the speed of the moving object. Police radar devices work by mixing a little of the outgoing signal with the return signal and counting the difference signal that results (in the case of most police radars, this is an audio signal. In fact, most radars have some type of audio output to allow the operator to listen to the returning and resulting audio signal or in some instances to allow the resulting difference frequency to be recorded on a tape recorder or strip chart). The transmit and receiver functions of the radar unit can be isolated by several methods. I have seen a physical separation method used in an older style radar, but most of the newer types use a ferrite circulator much like the GunnPlexer.

The derivation of the Doppler Shift formula is not too rigorous, but will not serve our space limitations. It may suffice to say that the basic formula is as follows:

$$F_{Dop} = \frac{2V}{C} F_t$$

where

$F_{Dop}$  = Doppler Frequency in hertz

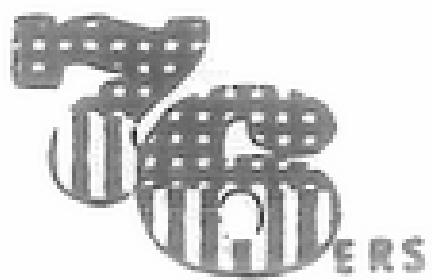
$V$  = Velocity of the target in miles per hour

$F_t$  = Transmitter frequency in Hertz

$C$  = Speed of light in miles per hour

So it can be seen that if the transmitted frequency ( $F_t$ ) is equal to  $10.525 \times 10^9$  Hz (or 10.525 Ghz) and the speed of light ( $C$ ) is  $6.7061 \times 10^8$  miles per hours, the Doppler Shift frequency ( $F_{Dop}$ ) is 31.389 per mile per hour. This means that for each mile per hour the target vehicle is moving, the frequency of the returning signal is shifted 31.4 mhz. for a speed of 55 mph, the shift is 1727 Hertz. For 20 mph, the shift is 628 Hertz. For those travelling 70 mph, the shift is 2198 Hertz. This frequency is counted and displayed either on a meter or digital read-out. The radar unit in its simplest configuration is simply a device for displaying this frequency. I suppose a trooper with perfect pitch could be sent out with just a small microwave source and detector and a ticket book.

Doppler Shift is an established scientific principle. It is used everyday in many applications more important that speeding motorist detection. An interesting use is the two installations of Doppler radar used by the National Severe Storms Laboratory in two different locations. By focusing on the same point in space, these two radars are computer controlled to determine not only the speed of rain drops and wind at that point, but also the direction, a very useful technique in determining the characteristic of a storm.



## BICENTENNIAL AMATEUR RADIO CLUB

*"To Promote Radio Communications"*

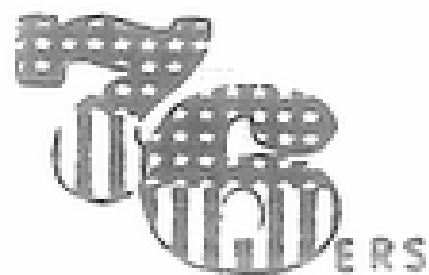
Sponsored by Oklahoma Air National Guard  
Will Rogers World Airport



Top right is the starting picture of the June transmitter hunt. Top left is Bill, KB5BS and his DF unit. I am still trying to figure out what wavelength Bill's antenna is tuned to. Bill did not find the transmitter first, but he sure zoomed in on the charcoaled hot dogs first! The hunt went very well - we had five hunters and one very well hidden rabbit. Don, K5SJV was the rabbit and he picked the sailboat storage area at lake Hefner to emit his signals from. Don has a sailboat and he very cleverly put his antenna on top of the sailboat mast. Good job Don.

After the hunt was over Mac & Judy, K2GKK & KA5BJS, invited everyone to their place for a dip in their swimming pool. It was hot and we all accepted without any delay. After the dip in the pool we zoomed in on Bill and those excellent charcoaled hot dogs. After several hours of swimming, frizbee and good fellowship we all went home. Thanks Mac & Judy.

The next hunt is scheduled for July, 8. Starting from Woodson Park. The July hunt is the last chance you will have to practice up before Ham Holiday 1979. Again this year a hidden transmitter hunt will be held. The hunt will start from the west parking lot at Lincoln Plaza, at 9:00 AM Sunday, July 29. There will be two or three hidden transmitters, all will be within a five mile radius of Lincoln Plaza. To the person with the lowest milage and fastest time to find all rabbits, a Larson two meter mobile antenna will be awarded. Area maps will be provided. See you there and good hunting. Don, AE5N



## BICENTENNIAL AMATEUR RADIO CLUB

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Will Rogers World Airport



THE BICENTENNIAL AMATEUR RADIO CLUB (76ers) was formed during 1976, hence the club name. The club is sponsored by the Oklahoma Air National Guard and meets the second Tuesday of every month at the Air Guard base just west of Will Rogers World Airport. Our meeting begins at 7:00 PM and anyone is welcome to attend. We always have a regular business meeting followed by an interesting program. Our programs cover the entire realm of amateur radio, as the Bicentennial Club is not concerned with only limited aspects of our hobby. We are an ARRL affiliated club and probably the fastest growing club in the metropolitan area. The club conducts classes in amateur radio at all levels which are free to anyone interested. We also sponsor an open repeater with autopatch on 146.16/76. (note the frequency!) Our repeater call is WR5ANG. (perhaps you can think of appropriate phonetics) Drop in and check us out.

Charlie, WA4PLG

AN IDEA FOR THOSE OF US OPERATING ON TWO METER REPEATERS: Last summer on a vacation to the west coast I heard a practice which I thought worthwhile. When amateurs were demonstrating the capabilities of two meters and repeaters to non-hams, they would get on and announce they needed a demonstration. Immediately, others listening on the repeater would respond, one by one, with a brief statement about their location, rig (fixed, mobile, hand held), power or whatever might be of interest to a non ham. I think this would make a very positive impression and I would like to know if others around the area feel the same way.

Charlie, WA4PLG

I must apologize for the rotten print quality of the Digital Logic article written by Lloyd Kirk, WB5HUP in last month's issue. I encouraged Lloyd to use my typewriter and then we discovered that my ribbon was worn out. I now have a new ribbon and I hope it works better. The discussion will be continued next month and Lloyd will include a brief review of part one in case you did not (or could not) read it.

Charlie, WA4PLG

The Bicentennial Amateur Radio Club wishes to thank all of those who came by and participated or observed our field day activities at Woodson Park. Results and pictures will be published next month.

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BREAK A BAD HABIT--quit going to bed early! Stay up and join the Oklahoma Night Owl Net. Replace some boring sack time with fun radio operating.

The Oklahoma Night Owl Net meets every night at 10:30 P.M. local time, on the 07/67 MORI repeater. No set ending time, check in when you can and out when you must.

Could you be a Night Owl? You could if you are an amateur radio operator who enjoys 2 meters. Other qualifications? Just check in. You'll hear lots of friendly voices, interesting rag chews, technical info, some traffic, mobile and emergency assistance--all this and more in a semi-formal net. No, you do not have to be a member of any repeater club.

Check-ins have come from as far away as St. Joseph, MO and southern Texas. Some tense moments have come from emergencies and it's a good feeling to be able to help out.

Get your feet wet! Whether as a one time check-in or a regular, you're a member.

Adventurous? Be a net control, for a regular night each week or just whenever possible. It's not difficult, more like keeping track of a large round table. All you need is your radio, a pencil and paper.

Night Owlers are special. Be a special--be a Night Owl. We'd like to thank MORI for the use of their repeater. MORI has made a fun group possible.

Ben, WB5TFX



# **HAM '79** AND **ARRL** *Holiday* **STATE** **CONVENTION**

At The Beautiful

**LINCOLN PLAZA FORUM**  
**OKLA CITY JULY 27-28-29**

**4345 NORTH LINCOLN BLVD OKC**

## **TECHNICAL PROGRAMS**

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

## **DEALER - EQUIPMENT DISPLAY**

SEE THE LATEST EQUIPMENT AND MEET THE DEALERS

## **SUNDAY BANQUET & AWARDS DRAWING**

GOOD FOOD - GOOD AWARDS

## **QCWA BREAKFAST~EYEBALL QSO'S**

COME PREPARED TO SEE YOUR OLD & NEW FRIENDS

## **DOOR AWARDS GALORE**

PRE REGISTRATION AWARD - A SUPER 2 METER RIG

GRAND AWARD - A FANTASTIC H P RIG

## **10,000 SQ FT FLEA MARKET**

PRE-REGISTRATION FOR OKLA. HAM HOLIDAY & STATE ARRL CONVENTION  
Make check to CORA. Mail to CORA, box 14424, Okla City OK 73113  
Must be received by July 20 1979. Tickets held at desk. Send  
s.a.s.c if confirmation desired.

Name \_\_\_\_\_ Call \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Others \_\_\_\_\_

Others \_\_\_\_\_

\_\_\_\_\_ Total pre-registrations @ \$4.00 \_\_\_\_\_

\_\_\_\_\_ QCWA Breakfast Tickets @ \$5.10 \_\_\_\_\_

\_\_\_\_\_ Sunday Banquet Tickets @ \$7.25 \_\_\_\_\_

Tax and tip included.

Reserve me a table for Flea Market (NON Commercial) ☐

