CENTRAL OKLAHOMA RADIO AMATEURS
COLLECTOR AND EMITTER®

Amateur Radio News Service

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VOLUME 7 | JULY 1981 | NUMBER 78

HAM HOLIDAY OKLAHOMA

WEST GULF DIVISION

PUT TWO FINE ORGANIZATIONS TOGETHER AND WHAT DO YOU GET?

THE ANSWER IS; A FINE TIME, LOTS OF FUN, MAYBE A NEW RADIO TO TAKE HOME FOR $5.00, ALLIED EQUIPMENT AND THE LATEST WORD ON WHAT IS HAPPENING IN AMATEUR RADIO.

HAM HOLIDAY has been the premier hamfest, flea market, etc. in Oklahoma for the past seven years, that is if you take into account the attendance, last year 1386 people had the time of their ham life and went home with over $.,000 in prizes which were purchased at the last minute from commercial vendors who were there. Lots of donated items also grace the shack of residents of Oklahoma, Texas, Kansas, Missouri, and a couple of others.

HAM HOLIDAY is "put on" by CORA, that is a non-profit operation named Central Oklahoma Radio Amateurs, Inc., a collection of clubs that started with four in Oklahoma City and now has member clubs not only in Oklahoma City but in Edmond, Moldenville-Wewoka, Oklahoma University, Shawnee, Norman, Woodward, Altus, Choctaw, Kay County, Hugo and there is Wheatstraw Club which spreads over several counties in Western Oklahoma. That is 17 clubs scattered all over Oklahoma so the word Central in CORA's name really means Cooperating, because that is what they do and as a result the hams in this area profit by getting to attend a first rate hamfest every year and each CORA member also receives this magazine every month to keep them informed of the happenings in the own club (in case they miss a meeting) but also they are treated to technical articles written by other members and the latest local happenings. See the outstanding award certificate and comments inside.

There you have a quick rundown on one of the organizations who are your hosts 24-25-26 July, 1981. Y'all come.

Most of the people who receive this issue of the CORA Collector & Emitter will be members of the Amateur Radio Relay League and as such they are also West Gulf Division members and will be heading for Oklahoma City the last week end in July to attend the annual West Gulf Convention which, this year, is being held in conjunction with the annual HAM HOLIDAY. This makes for an ideal setup since most of the people who belong to the clubs that make up CORA are also League members, several clubs are 100% ARRL.

The league president, Harry J. Dannals, W2HD, as well as some technical types will be coming in from Newington to give everyone the latest word on what is going on in our hobby.

There will be ARRL meetings as well as general information programs so there will be something for everyone going on at all times.

A highlight of the convention will be the Wouff Hong ceremony Saturday night. If you are a little foggy on just what a Wouff Hong is, look in your latest QST for a good story on it.

The Oklahoma fraternity is looking forward to having their Texas brothers up here across the Red River to make our League a stronger and more effective organization, and one of the very best ways to strengthening a group is to get them together for some serious business and a lot of fun and eyeballing.

1+1=1. That's right. Be one.

SECOND CLASS MAIL Postmaster, see page 3.

Central Oklahoma RadioAmateurs
COLLECTOR AND EMITTER

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

Central Oklahoma Radio Amateurs, Inc. (CORA) is a non-profit association of radio amateurs founded for the promotion of 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.

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Managing Editor: Joe Harding, WA5ZNF 737-1044
Circulation Mgr. Bob Graham, WB5NSV 677-8685

PARTICIPATING CORA CLUBS

1. AERONAUTICAL CENTER ARC
MEETS: 8:00 pm First Friday, Flight Standards bldg., FAA Aero Center.

PR	WA5CJG	Bob Pace	376-3569
VP	K5KOR	Bill Oliver	329-6333
Se	WB5NSV	Bob Graham	677-8685
Tr	WB5AAY	Larry Bugg	789-4389
EDITOR: Bob Graham, WB5NSV			677-8685

2. OKLAHOMA CENTRAL VHF CLUB
MEETS: 8:00 pm Third Friday, Red Cross bldg., 10th & Hudson, OKC.

PR	WD5IRD	Ralph Bartow	521-8330
VP	WA5FWD	Bill Juland	354-5018
Se	K5JB	Joe Buswell	732-0676
Tr	W5CE	Ellard Foster	789-6702
EDITOR: Joe Buswell, K5JB			732-0676

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

PR	KA5EFU	Fred Taylor	528-1537
VP	W5PDN	Frank Arnold	737-1582
Se	KA5FED	Susie Atkinson	842-8014
Tr	W5KOZ	Sid Gerber	737-1050
EDITOR: Susie Atkinson, KA5FED			842-8014

4. OKLAHOMA CITY AUROPATCH ASSOCIATION
MEETS: 7:30 pm Third Tuesday, Okla City Fire Dept. Training Center, N. Portland.

PR	K5WE	Chuck Wilhite	721-4926
VP	N5IH	Henry Israel	722-3848
Se	WD5EFT	Clara Storm	495-6228
Tr	KC5IS	Zach Zachry	732-2888
EDITOR: Henry Israel, N5IH			722-3848

5. OKLAHOMA UNIVERSITY AMATEUR RADIO CLUB
MEETS: 8:00 pm (Sep-May) Second Tuesday Carson Engineering Center.

PR	WB5RQB	Ira Hardy	325-4545
VP	KA5COI	Peter Richeson	329-3217
Se			
Tr			
EDITOR: Chris Hayce, KB5QQ			364-3848

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

PR	WB5HJS	Charles Smith	477-1098
VP			
S/T	KB5FW	Dennis Bonewitz	477-0194

EDITOR: Dennis Bonewitz, KB5FW 477-0194

7. BICENTENIAL ARC (The 76'ers)
MEETS: 7:00 pm Second Tuesday, Air National Guard, Will Rogers Airport.

PR	KB5BS	Bill Skipper	495-6946
VP	N5AUK	Jerry Sproul	354-2061
Se	N5BEQ	Jim Buswell	236-0388
Tr	WD5BMP	Joe Cusack (Guthrie)	282-4353
EDITOR: Coy Day, N5OC			691-1196

8. WHEATSTRAW AMATEUR RADIO CLUB
MEETS: 2:30 pm First Sunday, location varies - see club section/calendar.

PR	AB5Z	Ray Barnes	274-3334
VP	WB5GLD	Dick Rahl	375-4843
S/T	WA5PEC	Ralph Wilder	623-5421

EDITOR: Ted Cantangenham, WD5JNT 364-1675

10. CHOCTAW AMATEUR RADIO CLUB
MEETS: 7:00 pm Second Monday, Choctaw City Hall.

PR	WD5EVP	Bob Allen	
VP	AD5H	Frank Carter	391-2187
Se	35EEP	Syrena Standlee	279-3975
Tr	KA5ALO	Richard Edwards	390-8297
EDITOR: Syrena Standlee, N5BEP			279-3975

11. EDMOND AMATEUR RADIO SOCIETY
MEETS: 2:00 pm Third Sunday. Room 205, Science bldg. Central State Univ.

PR	KB5RR	Clarence Dollmeyer	341-7163
VP	WD5DGC	Don Brown	737-6141
S/T	KB5QC	Roger Harmon	348-1230
EC	WD5NEC	Ken Stopp	341-4878
EDITOR: Clarence Dollmeyer, KB5RR			341-7163

12. SHAWNEE AMATEUR RADIO CLUB
MEETS: 8:00 pm Second & Fourth Tuesday. Shawnee City Hall (EOC)

PR	K5LFI	Bob Almand	598-5148
VP	KA5FIT	Walter Fultz	598-3984
S/T	KA5FBC	Jim Sullivan	273-3843
EDITOR: Jay Tingler, WD5GUP			273-3843

13. KAY COUNTY AMATEUR RADIO CLUB
MEETS: 7:30 pm Third Thursday. Security Bank Basement, Ponca City.

PR	WB6RBE	Steve Scott	765-7408
VP	WB5SAG	Grady Skillern	765-3411
S/T	WB5JYE	Cosby Clarke	765-3150
EDITOR: Steve Scott, WB6RBE			765-7408

15. SOUTH CANADIAN AMATEUR RADIO SOCIETY
MEETS: 9:30 am Third Saturday. Red Cross bldg., North Campus, Norman

PR	KB5ER	Wade Anderson	794-5144
VP	KC5CU	Charles Warner	364-9561
Se	WA5RPP	Sam Barrett	321-6297
Tr	WA5HLT	H. O. Townsend	329-4426
EDITOR:			

16. EDMOND AMATEUR RADIO CLUB
MEETS: 7:45 pm First Monday. See club section for location.

PR	WB5UIY	Stan Van Hort	
VP	WB5ISD	Wendell Cochran	943-4308
S/T	WA5SQE	Bob Shaw	341-4874
EDITOR: Stan Van Hort, WB5UIY			

17. TRI-CITY AMATEUR RADIO CLUB
MEETS: 7:30 pm First Monday. Location varies. See club section.

PP	WB5QBB	John Warriner	379-3149
VP	WB5BLT	J. B. Bills	379-3992
S/T	KA5FDA	Nancy Hayden	379-6448
EDITOR: Yvonne Warriner, WB5TYW			379-3149

18. GREAT PLAINS AMATEUR RADIO CLUB
MEETS: 7:30 pm First Tuesday, basement Woodward Court House.

PR	N5CMW	Bill Wyatt	256-3248
VP	WD5DRM	Bill Reid	994-2336
Se	N5CCY	Gerald Bowman	948-5361
Tr	WD5DFC	Donna Reid	994-2336
EDITOR: Carla Tice, WB5JGW			994-2138

19. SOUTHEAST OKLAHOMA AMATEUR RADIO ASSN
MEETS:

PP	WB5TTV	Ron Henson	326-5418
VP	WD5UKI	George Weldon	326-5672
S/T	WD5FUC	Orville Raley	326-3650
EDITOR:			

CENTRAL OKLAHOMA RADIO AMATEURS, Inc.

CORA meets the Fourth Tuesday, 7:30 pm, Red Cross bldg., 50th & Hudson

DID YOU ENJOY THIS COPY OF THE CORA COLLECTOR AND EMITTER? YOU CAN ENJOY A FULL YEAR OF OUTSTANDING TECHNICAL ARTICLES, FEATURES AND COVERAGE OF AMATEUR RADIO HAPPENINGS FOR ONLY $6.00. BETTER YET, AFFILIATE YOUR CLUB WITH CORA AND EACH OF YOUR MEMBERS WILL RECEIVE IT FOR ONLY $3.00 A YEAR AND YOU WILL GET A PAGE TO PRINT YOUR OWN CLUB NEWS, CHEAPER THAN YOU CAN PAY FOR THE POSTAGE.

SEND YOUR REQUEST FOR YOUR CLUBS AFFILIATION TO CORA, P.O. BOX 15013, DEL CITY OK 73155

OR SEND YOUR OWN SUBSCRIPTION TO THE SAME ADDRESS.

Central Oklahoma Radio Amateurs

As president of C.O.R.A., let me offer a big hearty invitation to everyone to attend HamHoliday 81 and the West Gulf Convention. We feel this will be the best one yet, and with your attendance, it will be that much better. We will miss you if you don't attend, and you are the one who will really miss out.

All our committees have worked especially hard this year. Our program committee has a very good slate of interesting programs, both for the ladies and men. I know there will be something of interest for everyone.

Listening to the prize committee talk, there are going to be some real goodies this year. They are lining up some of the top dealers and manufacturers this year, so you should be able to see all the latest amateur radio equipment on the market.

We will be in new facilities this year. We are looking forward to using the Myriad in downtown Oklahoma City. There will be plenty of room for everyone and parking will be no problem.

You asked about the flea market? In the past, we have had the flea market on Saturday only, but this year we decided to have it on both Saturday and Sunday. So, if you have more of a junk box than you need, why not reserve a table and dispose of some of the old junque?

We will have plenty of good entertainment. I hear we will see a good looking woman actually sawed into at the banquet. How about that? Oklahoma City is fast becoming the Cowboy Capitol of the world, so we decided it only proper to have a big Country & Western dance on Saturday night. George, AD1S just happens to be the best dance teacher in the southwest, so if you don't know how, he will teach you. Everyone be sure and bring your boots and hats.

We will have special guests too. Harry Dannals, W2HD, President of the A.R.R.L. will be our main guest. We are really looking forward to his presence. Also, we will have both our Director and Vice Director of the West Gulf Division here, Ray Wangler, W5EDZ and Tom Comstock, N5TC, respectively.

Everything is looking great. So, take a few minutes and fill out the pre-registration form in this issue of the Collector and Emitter and send it in early. We are looking forward to seeing you here.

Chuck Wilhite

Chuck Wilhite, K5WK
President, C.O.R.A.

EDITORIAL--A NEW FORMAT FOR FIELD DAY

There are many amateur radio groups who get together on field day mostly for the camaraderie and the challenge of the setting up and establishment of contact. Once a successful operation has been established and the local officials are apprised of what's happening there is really little more to be proven. Oh sure! We know that the objective is to demonstrate that we can maintain communications for 24 to 30 hours; and the incentive is to have your call sign buried in a mass of fine print in QST.

But look at your own operation. The real steam is gone out of the show by suppertime and the all night vigil proves little except that we have the capability to totally flood and jam the bands with meaningless contacts. We destroy thousands of far more meaningful schedules and make genuine emergency traffic handling impossible.

Perhaps it is time for an alternative format for FIELD DAY. Let those who wish to follow the old way proceed unimpeded. I am sure there are many who will prefer things as they are. But let's offer our faternity an alternative which meets the objectives of fellowship, training, preparedness and public relations; and one which at the same time is fun and challenging for those who prefer not to battle mosquitoes all night, and who prefer to spend their Sunday mornings in worship with their families and friends; or meeting a schedule with an old or new friend; or just plain goofing off.

Clarence, KB5RR

THE BIG SIGNAL NEWS

OKLAHOMA CITY AUTOPATCH ASSOCIATION, INC.

This being a special edition of the C&E makes it a little difficult to come up with something interesting to write about, however since a lot of folks are not familar with our organization I will try my best to fill them in. I think a good place to start is with our commitment to insure top-notch communications at all times. This means in good weather as well as bad. As everyone knows we sponsor the 22-82 weather net, but everyone may not know we also have a trailer with emergency power to insure that we have communications even if the main tower were to fall. This trailer is also available in case it were needed outside the Oklahoma City area So, as everyone can see we at the Oklahoma City Auto-Patch association are comited to having emergency communications at all times.

One thing a lot of folks may not be aware of is that we are an open club. Oh, I know, this is not the way it always was, but it is the way it is now, and for some time. We would like to extend an invitation to every single person that is concerned with providing emergency communications, to join our organization. WE WELCOME YOU !!!!

I am sure by now that everyone is aware of the fact that our equipment is down from the tower and in the building, but if you were not you now know it. Reuben and his gang are doing a fantastic job at keeping the gear in first class shape. There is still a lot of things to be done, but the progress made the last three months is almost beyond belief. I understand that the new autopatch system and control circuits are coming along fine. Buddy and Larry are doing more than their share, so if anyone can help them I'm sure they would welcome you with open arms. I guess while we are at it we better mention the job that Frank and Merrill have done on the trailer. These guys really know what they are doing. Give them ALL a pat on the back the next time you see them. Not too hard.

I hope that by now every person has given to the Oklahoma City Antenna Defense Fund. This is an extremely important cause. It will benefit EVERY amateur in Oklahoma, and the surrounding area. This fight is with the City limiting ANTENNA heights to 50 feet. Now. maybe you don't get the entire picture. I said antenna heights. This means the highest portion of the antenna or support!!! Well, lets go on. It (the city ordinance) says 15 feet above structure or 50 feet. Hum-- no more roof-mounted HF verticles. That is right. It would place the top of the antenna above the 15 feet above structure limit. So-- I hope that everyone can see just har far the city boys can carry this thing if they happen to get on your case.

There is no question as to this being everyones fight or not. And, by this going to the Federal level, could very easily make this a landmark case all over this district. ------So, if you have not given to the fund set down and make out your check to the OKLAHOMA CITY ANTENNA DEFENSE FUND
Let us all pull together for our rights to have an antenna. GIVE GIVE GIVE GIVE
GIVEGIVE***GIVE***GIVE***GIVE***GIVE***

Again I would like to offer an invitation to all amateurs to come join the Auto-Patch club. To refresh all of our memories, we run four different repeaters in Oklahoma City. There are two two-meter machines, 146.22-146.82, 147.81-147.21, one six-meter machine on 52.680-52.525, and one 450 machine on 449.300-444.300. There are a number of fine people on one or all the machines at any given time. Some of us run all the frequencies mobile. Please come up and check us out. I think you will like what you find, and will want to be a part of it. Come join our club.

***** OKDX *****
OKDX
***** OKDX *****

At this time of the sunspot cycle Dx seems to lend itself to only those who really care. The times of good prpagation at all times is a thing of the past for awhile. The only folks working DX with regularity are those who truely want to. By this I mean those that are willing to put up good antennas. The wet nood le days are probable gone for a few years. However, do not dispare, there will still be those days when propagation is very good, but there will not be as many, and the opening will not last as long. The entire idea is to be listening when the bands do open. This takes a lot of time and will separate the DX'ERS from those that only pretend to be. One way to save yourself a lot of time is to monitor the OKDX frequency at all times. For those that don't know, it is 147.900 simplex. There is a lot of good information to be found and will save you a lot of time to find out what bands are open to where. Tune us in and find out what is happening !!

Even though the bands are not what they used to be, there are openings almost every evening to the Pacific, on both ten and fifteen meters. The ZL's and VK's along with FK8's, and a host of others are to be found. FK8CW has been showing up on fifteen with some regularity, look for him around 21.050 after 0300z. he has a nice signal and clean fist. Works a little slow, but hang in there.

ZD9 Hopefully this one has shown up by now and everyone has worked him. At the time of this writing seems for sure-maybe-in July. Lets all hope.
Europa-- This one should be on in October November, and December. Should be there long enough for every one to get him.
TYAll- This on should be there for a couple of years. So if you need TY this is for you. He works 10, 15, 20, and also 40. look for him on both SSB and CW.
Did some one mention Cambodia?????

I'll stop here since this issue goes to press so early. There are a lot of people going places so stay tuned to 147.900 and stay informed.

***** TOWER FUND *****

I am well aware that this has been mentioned befor, but an issue this important can not be taken too seriously. This is a matter of grave importance to all amateurs. I suppose that being that in able to work DX with regularity a nice antenna system is mandatory Therefor it is of most importance to us DX'ERs If you have not already given to the Oklahoma City Antenna Defense Fund, please do not wait any longer. If you have given, thanks, and why not check and see if you could give a little more. Any amount will help and will be appreciated. PLEASE GIVE

OKDX MEETINGS I am sure there are some that would attend our regular meetings if they knew where they were. We meet every second Monday at the Colony Kitchen at 6:30 pm. The food is fine for those that want to eat and the coffee is never ending for the rest of us. The Colony Kitchen is just south of N.W. 63rd street on MacArthur. It's on the west side and there is plenty of parking. By the way, there are no dues and no officers of the OKDX group. I do believe though that you will have to agree that we have good programs. If you attended our program at HAM HOLLIDAY you got a sample.

For now I'll say GUD DX and hope to see (actually hear) you on 147.000.

Remember you hear more DX when not transmitting.

CLUB ELECTIONS - It's that time of year again, when we choose, railroad, or whatever you call it, a group of fearless leaders for the coming year. We will have the election of new officers at the August meeting. The nominating committee will have their list of names but you can also nominate from the floor. Be sure and attend the August meeting, so your vote can be counted

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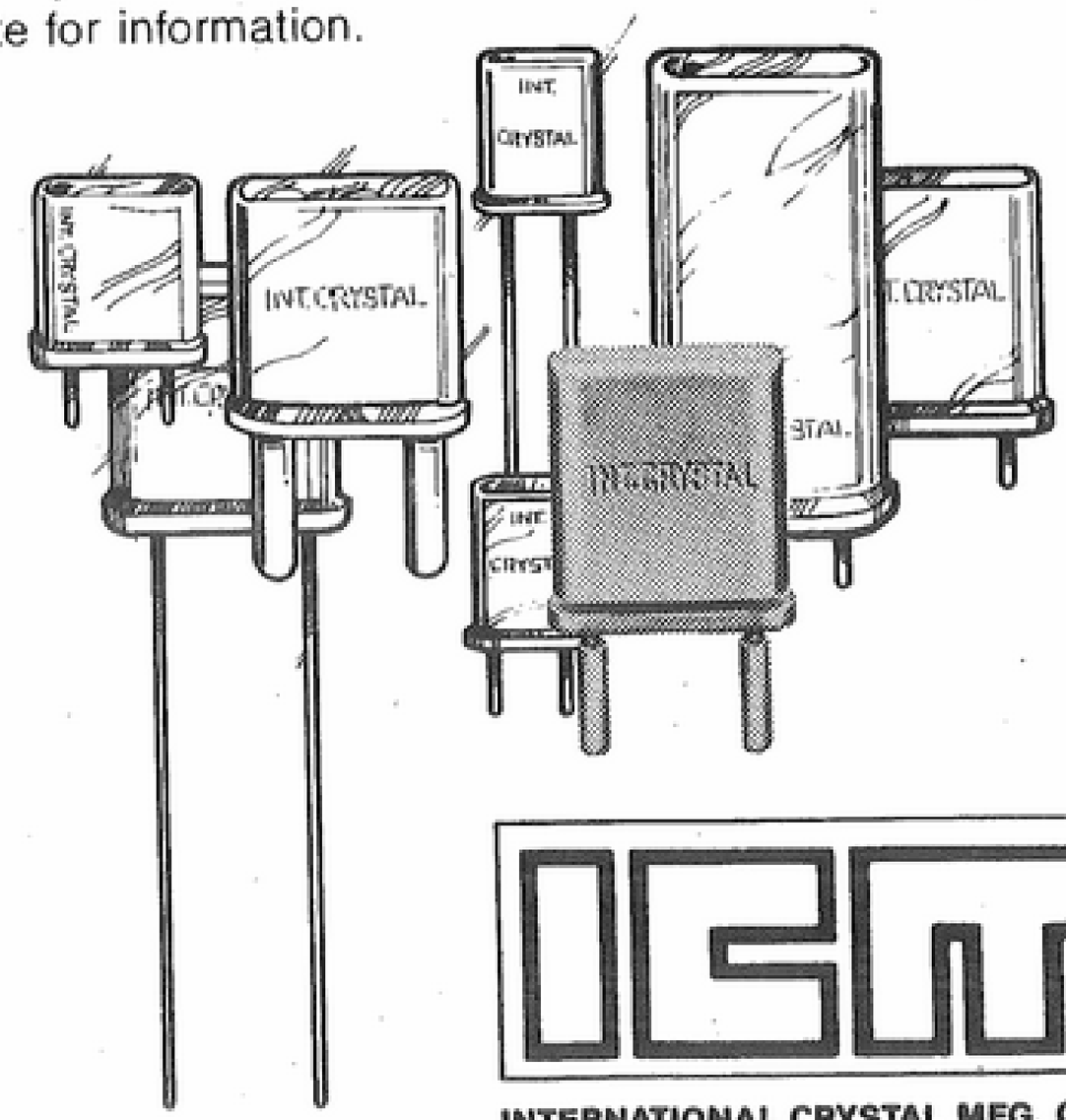

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10 North Lee, Oklahoma City, Oklahoma 73102

Edmond Amateur Radio Club
P.O. Box 76252 / Okla. City, Ok. 73147

Editor:STAN VAN NORT WB5UIY

The Edmond Amateur Radio Club is honoring this month our past President, Harold Plunk. Starting this year in the July issue we are bestowing this honor upon one of our club members. There will not be an award or anything special, he will just be known as the EARC Mr. Good Guy. (No relation to Mr. Goodwrench. However, this is also known as a "good ole boy")

Harold Plunk is 49 years old and has been an amatuer since 1960, starting out as a novice. He was born and raised in Tennessee, but has lived in OKC for 23 years. Harold is married to Nelle and they live in north OKC in the Camelot Addition. They have been married 26 years and have two daughters.

Harold works for T.G.&Y. as the Executive Vice-President and is also on the Board of Directors for United Oklahoma Bank.

In his spare time, amatuer radio is the # 1 hobby, along with photography and flying. Harold has a private pilots license, but normally flys the commercial jets when out traveling for T.G.&Y. One of his other sidelines is raising cattle. He claims to own a "small ranch" near Edmond.

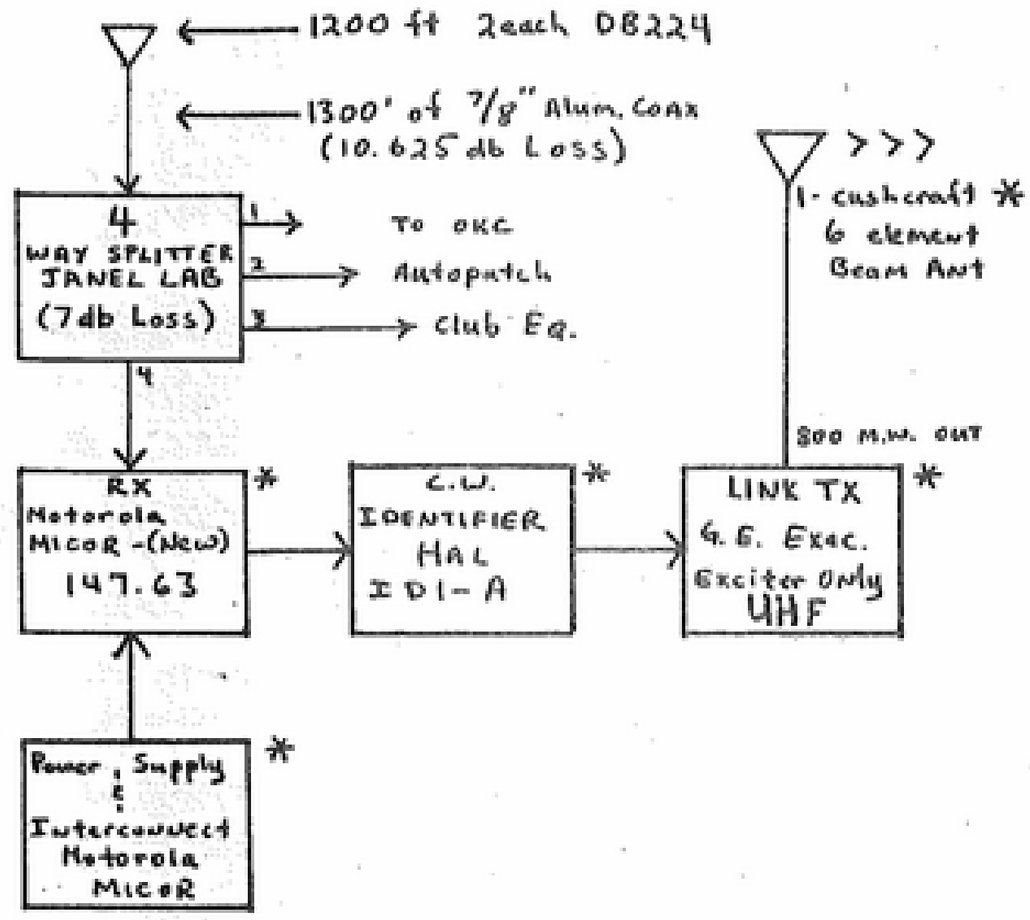
Harold was the EARC President for 1980 and still arranges for club meetings at his office. We appreciate your hard work and therefore honor you as the EARC Mr. Good Guy.

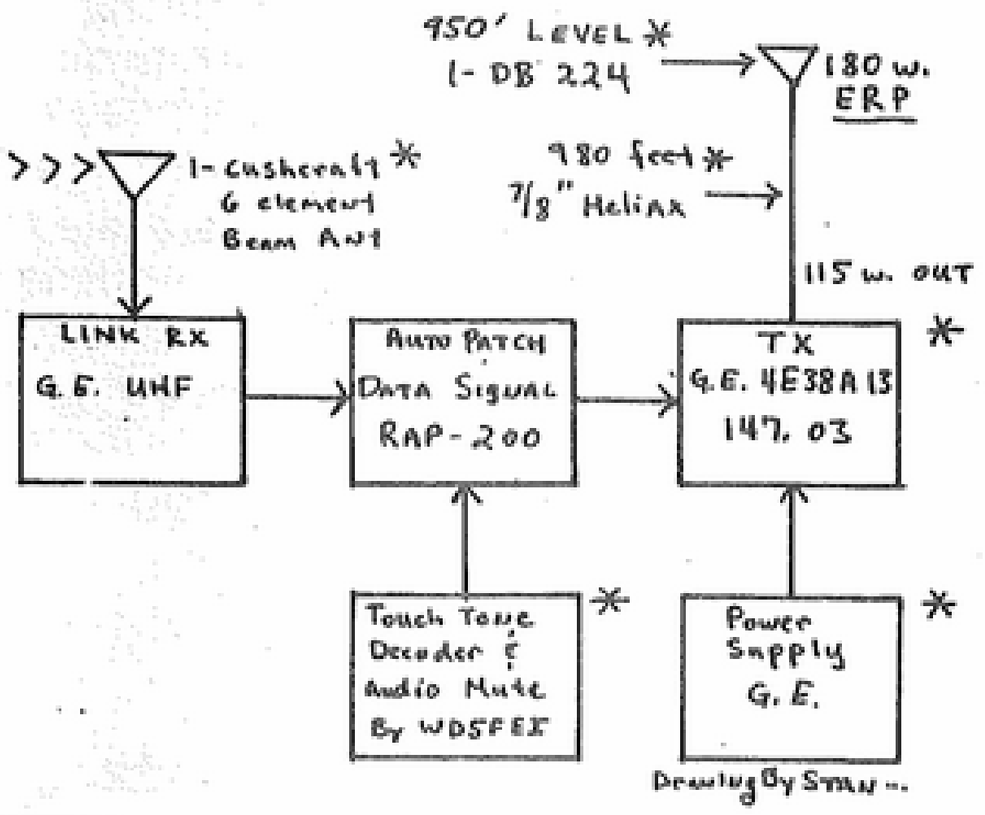
JUNE DINNER MEETING

The July issue is being printed early for the upcoming Ham Holiday, which means the meeting will occur shortly after this has been printed. There are plans being made for a picnic and it should turn out to be very tasty becuase of the good cooks in our club. Watch for a report in the August issue along with a report on the Dallas HamCom.

UPDATE

In the June edition of the C. & E. there was a report of the May meeting which had reference to a block diagram of the 63/03 repeater system. The diagram is printed in this issue for your information. It should be noted that some of the equipment listed is shared with the OKC Autopatch Club. Some equipment is owned by Dennis Orcutt, the club trustee. The blocks indicated with a * is totally owned by our club.





HID-OKLAHOMA REPEATOR, INC.
WA5YTI

Welcome to Ham Holiday! I am sure that most of you will hear that kind of thing, or similiar to it -- because HH-81 is just a month away, and everyone is getting very anxious, because this should be the biggest one ever put on, also the West Coast ARRL members as well as others will be there. In the past I have been to three Ham Holiday conventions and each year, they seem to be better and better. There are so many things to do and to see. I have always enjoyed the programs for the women, some of which have been very informative and interesting. I also like bingo, just as most men (and women too) enjoy the swap meet, and all of the other activities, I always try to participate in as many as I can. I have already been talking to several people and recorded their comments on paper, maybe some of them are yours, or could add to the list.
Rosemary (wife of Ken-K5VVZ) said that she feels it really will be agreat thing and really looking forward into going, and that they really appreciate all of the work that goes into it.
Connie - KA5ERZ: "I can hardly wait to talk face to face with the ones I have already talked to on radio, and the chance to meet some new ones, and see the ones I have already met. -- I also enjoy browsing through the swap meet, some of the equipment is very interesting..."
Marty - KA5JUJ: "This is going to be a Historic Ham Holiday!!"
Sid - W5KOZ: "This is really going to be the best ever, and don't forget to get in your pre-registration early, so that you won't miss out on any of the goodies."
Fred - KA5CXW: "This really is going to be fantastic, and I am really looking forward to it."
My comments - Susie - KA5FED: "I can hardly wait, but I guess that my patience will be rewarded in the best way, and I am also looking forward to seeing old friends, making new ones and much more. Also I might add, hope that Mel - WA5OPP and his train whistle shows up... (you too, Ruby!!)"
There really were many more comments, but I have just about ran out of space to list them all, but some were summed up by one word, as Great! Fantastic! Fun! etc. I really did appreciate hearing them all.

Hope to see a lot of you, 73
Susie KA5FED

As this issue of the Collector And Emitter goes to press I find many pieces of mail stuffing our mailbox in response to Marty's efforts to bring in the biggest aggregation of Commercial Exhibitors ever At Ham Holiday. Marty, KA5JUJ, deserves a pat on the back for all his hard work. He also sent out applications for ads too.

At this time JCOM, Rockwell, Derrick Electonics, Ellards EX EL, [illegible] Radio INC have confirmed and sent thier checks.

I sincerely hope that this will be the big-gest Ham Holiday ever. Surely you can count on the great MORI club fulfilling thier duty as Exhibitions and Prize Committee to make it so to the best of our ability.

We welcome Hams from the Oklahoma Texas and from a extremely wide area. A spirit of joviality and a good time will be had by all.

I read about our first ham fest at Okla. City in our club newspaper dated September 1974 It was held August 3rd and 4th at the [illegible]DOME (Holiday Inn) at Midwest City. 370 attendees registered for the action. The Flea Market, the Commercial vendors and the prize drawing were tops. The beginning of a great tradition.

HOPE TO SEE ALL OF YOU AT HAM HOLIDAY
KA5CXW FRED

Edmond Amateur Radio Society, Inc.

WELCOME to Oklahoma City, a south suburb of beautiful EDMOND, OKLAHOMA.

This copy is being written on a cloudy day in May in anticipation of welcoming hams from far and wide to Ham Holiday and the West Gulf Division meeting on July 24, 25 and 26 at the Myriad Convention Center in Oklahoma City. As you enter the Oklahoma City area you will undoubtedly be working the long range repeaters such a .67 and .82 etc., etc. However, things may get a bit crowded and we hope you will avail yourselves of the 147.72/.12 machine as you come in range.

If you are working mobile with 10 watts or more you can probably work the .12 machine from Chandler to El Reno and from Guthrie to Norman most of the time. If you are working with a handie talkie you will be able to work the repeater throughout most of the northern section of Oklahoma City northward to Guthrie. The repeater trustee (and I.D.) is WD5FEI.

We maintain an open auto patch and you are welcome to use it; you will usually find a member on frequency who will be happy to bring it up for you.

The Edmond Amateur Radio Society is a relatively small group, about 40 members currently, who have as their primary projects: the maintenance and operation of the WD5FEI repeater; the support of City of Edmond Civil Defense by providing supplemental communications; and the annual conduct of a novice training program. Our membership is drawn from Edmond proper (about 60%), from the northern half of Oklahoma City (about 30%) and the balance from nearby communities.

The club has enjoyed many years of close association with Central State University through having various university staff people among its membership; and through the furnishing of meeting rooms, classroom space, and antenna and repeater space on university facilities. At the present time our repeater transmit antenna is at +275 ft. on an old university station transmitter tower; and our receive antenna is at 400 ft. atop a new university FM radio station tower, KCSC radio 90.1.

Club meetings are held at 2:00 p.m. on the third Sunday of each month at the Science Building on the Central State University campus. Our novice classes will be held at 7:00 p.m. Monday starting 2 June 1981 and continuing for approximately 13 weeks.

In closing we say WELCOME again to all our visitors. But do not limit your visitation just to Ham Holiday. Come see us often and when in the area

be sure you have 147.72/.12 programmed into your rig. In the meantime we will see you at the ARRL Booth at Ham Holiday--come by and say hello!

73, Clarence, KB5RR, President.

QST EARS--QST EARS--QST EARS--QST EARS--QST EARS--

Our fine club has always had a great turnout for service activities and we expect that Ham Holiday '81 will be another example of the fine spirit our club enjoys. Remember, staffing the ARRL booth is our responsibility and formal contribution to a outstanding ham event. Let's turn out all hands to make this year's program even more of a success than ever. Yes, we know that not everyone is in sympathy with ARRL, I've had a few choice words to say on that subject too, but our support of CORA and Ham Holiday should transcend all of that.

If you have not already signed up, contact Ken, N5DBM or Clarence, KB5RR and let us know when you can serve. Positions available all hours.

Continued on next page.

The Edmond Amateur Radio Society embarked on such a format for 1981 and it was a great success. A rough outline is as follows:

Set-Up per ARRL Rules
Afternoon operations - ditto
3:00 to 5:00 p.m.--Demonstrate operations to local officials and the media.
6:00 p.m.-- Families and guests arrive for picnic
6:00 to 8:00 p.m.--Fellowship and picnic supper
7:30 to 9:00 p.m.--Demobilize, clean-up the site and proceed home to reflect on a day of accomplishment in a fun environment; and to start planning an even better day next year.

To those who immediately scream NO!--OK, have it your way. This is your privlege. But to the rest of you I say -- TRY IT, YOU MIGHT LIKE IT.

The opinions expressed here are those of your venerable scribe and do not necessarily reflect the attitudes, opinions or positions of the Edmond Amateur Radio Society, CORA or the editors of C&E. However, I have a hunch that there are many out there who agree.

73, Clarence, KB5RR

SERVICE---SERVICE---SERVICE---SERVICE

Just to bring everyone up to date with regard to Civil Defense.....
The Edmond EOC has a new, and much improved location. It is now in the old Armory Building at 5th and Boulevard. Thanks to Western Electric, the amateur radio section of the EOC has a 2 meter rig and power supply; and thanks to Martin WD5FEI, it has a scanner. This equipment is permanently secured at the EOC in order that any licensed amateur, when called upon, can help without having to haul his own equipment down to the EOC. Another tremendous advantage for the new location is that we have a place to set down and spread out our rig, papers etc. Maybe that sounds like a small thing, but try operating an EOC with a talkie while dodging traffic in a fire station lobby. (That's what we've had to do for the past 2 years)

However, the best is yet to come.....
Since the new Post Office is finally under construction, the old Edmond Post Office will be vacated by the end of this year. After a few months of redecorating, we will move into its basement for an even better, and permanent EOC. The club will also be allowed to use this area as a permanent meeting place if we so desire. If anyone is interested in seeing the floor plan for this new EOC give me a call.

Also, if any of you are interested in helping with our Civil Defense activities, and have not already given me your name, call me on 72/12 or at 341-4874.

73, N5DBM

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WHEATSTRAW ARC ®
01-61

HISTORY OF WHEATSTRAW AMATEUR RADIO CLUB

The Wheatstraw Club was organized Feb 7, 1960 at the First Christian Church in Calumet. The President was K5RLM, James Stults. V.P. was K5RER, John Snyder. Sec/treas K5GDE, Fred Tech. There were 11 amateurs joined the club the first meeting. They were from Geary, Dover El Reno, Okarche, Kingfisher, and Calumet.

W5VCJ T.W.[Steve] Stevens conducted the organization of the first meeting and the club name was suggested by Steve. Suggestions for objectives of the club were to promote amateur radio, perform community service help other amateurs get on the air and work during any emergency that might arise.

One of the first activities the club took part in was to operate at the ElReno FarmHome show at the Thunderbird Colliseum. The club set up at the show and gave the attendants an opportunity to send a radio-gram to relatives and friends. The group operated on 6 and 75 meters with antennas on top of the colliseum and 400 messages were sent.

The club has always had a revolving meeting in all the towns that had members in the club and has a good attendance at all meetings.

The club has had a lot of 6 M caravans of one day trips and a few two day trips. The group has been all over the state to see differant points of interest in all directions. In latter years the club has gone to 2 meters like all the rest and find it works better than 6 while mobile. One of the main caravans was the Lawton-Ft Sill Hamfest trip each year. Most wore red jackets with the club patch on the back.

In 1964 Huston Blevins K5VFR sponsored a travelling trophy for field day to promote VHF operation especially on 6 M at that time. Who ever won the trophy 3 times in a row was to keep it. There was much competition from the VHF Club in OKC and others but the Wheatstraw Club took the trophy the first 3 times and retired it. The Wheatstraw Club sponsored another trophy in 73 for field day to try to create some competition on VHF for field day but due to lack of interest it sort of faded away. This year the trophy was revived and was sponsored again. At this time we do not know who the winner is.

The club has been going for 21 years and has always maintained a good membership over the years. The repeater age came along so we had to get into the act too. We now have our repeater going on 146.01-61. It is located N.W. of Calumet.

Our club has enjoyed good fellowship over the years and when we have a picnic the xyl s all turn to and there is not a bad cook among the bunch. The food is always good and every one eats too much.

The Wheatstraw Club invites all to use our repeater when in the area and to join our net on Wed. evening at 0200Z daylight saving time [summer] or 0230Z standard time [winter]. Our club meetings are first Sunday of each month at 2.30 pm. Come see us. We will be happy to have you as our guest.

BICENTENNIAL AMATEUR RADIO CLUB

"To Promote Radio Communications"

Sponsored by Oklahoma Air National Guard
Will Rogers World Airport

The June '81 meeting of the Bicentennial Amateur Radio Club was scheduled for Tuesday, the 9th at 7:00 pm at the Air National Guard Base in Oklahoma City. As this goes to press, that meeting has not been held, so, these are not minutes as such. Rather, for those of you who may not be aware of the Club, allow me the space here to inform you of the Club, its history, membership and goals.

The 76ers, so-called because we operate a two-meter repeater on 16/76 in Oklahoma City and because we were incorporated as a radio amateur club on January 6, 1976, came together "to further amateur radio through fellowship and training." From 35 charter members and Constitution signers the 76ers have grown to over 110 paid, supporting members in six years.

The Club meets at the Air National Guard Base in southern Oklahoma City under sponsorship of the Oklahoma Air National Guard until the local unit moves to Tulsa. The Guard has provided portable generators, tables, tents and their transport for our annual Field Day effort.

Last year, 1980, the 76ers topped Field Day as First in class and Third in Division for low-power and battery operating with two (club) stations. Our special thanks for their assistance went to Industrial Electric Co. erecting portable towers and the Oklahoma City Park Department for the use of Woodson Park before South Oklahoma City Junior College for the use of their grounds in 1980.

Future activities of the Club will find us not only trying to win top spot in Field Day, but learning and experimenting with Direction Finding, public displays of amateur radio operating such as portable set-ups at shopping centers, picnics and other socials and demonstrations to groups like Scouts and schools, while continuing with licensing and upgrading classes throughout the year.

So, if you missed the meeting at which you would have learned all of the above or the July Meeting on the 14th, put us on your calender on the second Tuesday of each month at 7:00 pm and make a note that the people you meet operating the registration desk at this year's Ham Holiday are 76ers. I hope you have an extremely good weekend with us here at the Myriad and win all the goodies you want to. I will be looking forward to meeting you.

Jim N5BE
Secretary

AGE SAGE: HOW TO TELL WHEN YOU'RE GROWING OLDER or IS THERE REALLY LIFE AFTER 40 ? : WHEN A FORTUNE TELLER OFFERS TO READ YOUR FACE .'.

jim n5b

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IT'S SNOW JOKING MATTER
(There's Snow Business like Snow Business)

I was perusing a recent issue of Mobile Times (actually July 1978, just a little behind on my reading) and caught an article on the SNOTEL (Snow Telemetry) system installed in 11 western states by the Soil Conversation Service. The system was basically designed to monitor snow fall and snow pack depth and relay that information by way of 6 meter meteor (40.530 and 41.530 Mhz) scatter to two master stations, one in Boise, Idaho and the other in Odgen, Utah. Now before you think that I am trying to stack (or is it pack?) a snow job on you, let me reassure you that snowfall and snow depth in the western states is snow joking matter. Melting snow provides up to 85% of all water available for all purposes, all seasons for the population--both human and animal. To the residents, snow is for drinking, bathing, crop irrigating, fishing, electricity, river rafting, homebuilding, car washing, the water closet (ahem) and, of course, the Rocky Mountain Spring Water so necessary for our favorite Colorado Kool Aid.

Nothing brought this issue home more than the recent snow drought this past winter that left ski lodges and ski enthusiasts high and dry. Personal, commercial and industrial activities in the Rockies are so dependent upon the runoff of melting snow that they have even coined a new phrase, "snow economics" to describe the "ripple effect" in the regional business cycle caused by below-normal or above-normal snowfall. So it should be snow surprize that measuring snow depths is an important factor in forecasting water supplies.

Previously, the Soil Conversation Service of the Department of Agriculture had depended upon ranchers, airline pilots, and others to head into the wilderness and guage snow depth. This was eventually replaced by snowmobiles, large over-snow vehicles, planes and helicopters. Snow surveys were made by thrusting a hollow metal tube in the snow, bringing the tube to the surface, and weighing the contents. The danger to the person is odvious. In 1970, the SCS decided to build a remote sensing system dependent upon meteor scatter for data transmission by radio. The SCS found that billions of meteor trails occurred in the upper reaches of the atmosphere every day in the 80-120 kilometer height region. The rate varied according to the time of day, season and geographical location.

Now wait! Snow fooling, these guys must be one pickle short of a barrel. You mean that you could take a meteor trail and pass enough information along it to send back all this information? Yup. The duration of the ionized trail averages only 200 milliseconds. Although meteors can not be said to occur at specific intervals (as any good 6 meter man can tell you), they are statistically predictable events. That is, if you are not concerned about when the information is transmitted to you in the next 10 seconds (for example), you can be reasonably certain that it will be transmitted sometime in that interval. If the numbers are against you and the data does not make it because of the lack of a meteor trail, big deal, you just wait another 10 seconds. It will probably make it within that time.

Prior to 1970, the technology for utilizing meteor trails only 200 milliseconds in duration as reflectors for radio signals was not available. The early part of the 1970's brought about an increase of the technology in sensors, communications engineering and data processing that increased the viability of a meteor scatter communications data retrival system. 161 sites of a projected 511 systems have been installed to date in 11 western states, Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming. The system will enable the SCS to predict with 97% accuracy the water supply on a real time basis.

The two master stations function in a polling scheme to recognize each remote site and gather data from each one on a regular basis. The remote sites continously record information received from four sensors that measure air temperature, snow-pack water equivalent, precipitation and voltage of the battery system powering the remote site. A total of 16 sensors, analog or digital, will be available for use on each site. The remote station listens for a command from the master stations. The masters send out coded signals on 40.530 Mhz which bounce off the meteor trails. As each remote site recognizes its code when it finally gets through, it responds by sending stored data from its sensors back to the master, often via the same meteor trail. The return frequency is 41.530 Mhz. Each remote station utilizes 400 watts of power stored in a battery charged by solar cells. The master station tests the data and if it appears correct and not obscured by noise, it send a signal back to the remote site causing it to go back to sleep. The entire exchange takes place in milliseconds and information is sent and received at the rate of 2,000 bits per second.

The direct financial benefit from snow forecasting is calculated to be $43,436,000.00 per year. Who decided this? I dunno, but the predicted cost/benefit ratio is somewhere around 20 to 1, not bad odds, especially for a government agency. The contractor for the equipment was Western Union with help from subcontractors that include Secode Electronics, DB Products, Solarex, Globe Batteries and others. The equipment must be capable of withstanding an altitude of 11,000 feet and -40^{o} weather without freezing or ice-up.

Well, now, if a body wanted to, could he hear these six meter signals? Could be. I got interested in the possiblity earlier in the year. January is the worst time of the year for meteors. The number of meteors drops to 1/4 of what is expected in mid-summer. I tuned up to 40.530 and 41.530 Mhz with my trusty rusty Bearcat 250 and set the count to zero and left the scanner on the frequencies for a day or so. I heard nary a peep on 41.530 Mhz, the frequency for each of the remote sites, but did have a count show up on the 40.530 Mhz frequency for each of the base stations. I had logged about 45 "contacts" in a day or so. Since I was not home during the day, I listened a couple of evenings to see what the signals were like. They sounded very noisy and I could not make out anything that sounded like data. All I heard were short bursts of very noisy signals, impossible to identify. It is possible that what I heard was some local interference, but the signals were consistent with the Snotel system. I did notice that the frequency was disturbed by my cable TV converter box. The local downconversion frequency in this area is channel 3 and I suppose that the output is not too well protected with filtering. I have heard signals however when the cable box was not even engaged and those signals matched the duration and extent of Snotel. I am not sure whether or not I should be able to hear meteor scatter here in Oklahoma, but it might be possible. Anyway, fire up the old Bearcat and give it a whirl. Snow telling what you might hear.

Micheal Salem N5MS

MDS DO'S AND SHOULDN'TS

I am not talking about what you should or shouldn't do. I already know about those clever fellows in the Dallas and Dayton Flea Markets who are selling 2300 Mhz converters hand over fists. I am talking about the basic MDS operator who may have obtained an FCC license to put his common carrier (read that Pay-TV) system, but neglected to obtain the proper authorization certificate from the state and franchise agreement from the city.

Some readers may recall my ramblings in the April 1981 issue of the C & E in which I outlined a discovery I had made while perusing the Oklahoma Statutes that required all radio common carriers (as defined by the Federal Communications Commission) to be defined as public utilities and subject to control by the Oklahoma Corporation Commission as to their rates, services, practices and charges. In addition, each public utility is required to have a "Certificate of Convenience and Necessity" issued by the Corporation Commission before it can construct or operate its transmitter. The application for the Certificate must be in writing and contain an affidavit that notice of the intention to file has been published for two consecutive weeks in a legal newspaper and a copy sent to the holders of all other certificates for furnishing radio common carrier service within the area of normal communications by radios of such base stations, to all landline telephone companies and to the chief executive officer of the city or town in which such base station is proposed to be located.

Now if you are a public utility as defined by state statute, it might not be unreasonable that as such you need to have a franchise from the city or cities in which you operate. O.G. & E has one and so does your local cable TV company, so why shouldn't the common carrier MDS operator not have to pay the cost of a franchise election to transmit their product through the air.

The answer is that there is no reason why these people should not have to toe the line like the cable boys and the other public utilities. So you could imagine my surprize when I called the local Oklahoma Corporation Commission to ask if TVQ and Movie Systems Inc. (MSI) had a certificate of convenience and necessity on file and find out when they made their application. Nobody could find any evidence that they had ever made any application for any such animal. Apparently they just skulked to the top of the Liberty Tower Building and set up shop with their transmitter. I asked one of the attorneys why they did not have a certificate since they were a common carrier and he promised to check it out and get back to me. Well, I didn't hear from him for more than a month, so I decided to write a letter to see if they were still thinking about it. While I was at it, I dashed off a letter to Patience Latting, Mayor of Oklahoma City, to see if TVQ or MSI had ever made application for a franchise from the city. So far, haven't heard from anybody about anything and it has been over another month or so. I hope that they don't think that I will go away on this issue. My next letter will be to one of the commissioners. I didn't even get a phone call or a drop dead. That's gratitude. Because licensing a franchise could mean extra revenue for the city. I will write them again, but I also might write Cox Cable, the local cable franchise in OKC and KAUT, the local pay TV UHF station. They might be interested in finding out that their competition doesn't have a certificate from the Corporation Commission and avoided paying for that expensive franchise election.

And all you guys from out of town who have just heard about this, if you have trouble with the local MDS boys, you might consider checking up on them to determine if their are similiar statutes in your state. I think that you will find out for the most part that there is. Or if you have a little extra bread and want to go into the MDS business, apply for the franchise and certificate yourself. I have seen a couple of the MDS trucks and they don't seem to be doing too badly. If you get the certificate you might be able to buy them out at fire sale prices or better yet, sell the certificate to them. But don't take my word on it. You got to do something for yourself. So if you have any success, remember that you heard it here first. And drop me a line to let me know what happened.

Micheal Salem N5MS

RING A DING RINGER
(A Dead Ringer of a Circuit)

Need a nifty noise maker for the repeater or Selcall for the radio? Have I got a sound for you. It is a direct steal (make that dead ringer) from the IMTS Motorola Pulsa Control Head and will make a wonderful noise that will convince everyone within earshot that you, of all people, have a true mobile telephone in your office, car, home, water closet, etc. I have heard this circuit on a repeater ringout and I must admit that it is not only authentic, but impressive. It also is very distinctive from any other sound you might have in your car so there is no mistaking it.

The Electronic Ringer supplies 1200 Hz and 900 Hz alternating at a 14 Hz rate (71.4 milliseconds). The oscillator starts at 3600 Hertz as an astable multivibrator which is divided by 3 to 1200 Hz or by 4 to 900 Hz. The divide by N (where N is 3 or 4) is programmed by a 14 Hz astable multivibrator that alternates the 900 and 1200 Hz tones. (Figure 1)

U1A and U1B form a 3600 Hz astable multivibrator. When U1B-4 is high, C1 is positively charged. As C1 discharges through R2, U1A-3 goes high and U1A-4 goes low. C1 then charges negatively through R2. At some transfer point, U1A-3 goes low, U1B-4 goes high, and the cycle repeats. Some of you may recognize some variation of this circuit as an audio oscillator presented these pages numerous times before. The circuit is actually a good general purpose audio and low RF oscillator. I have numerous examples as audio oscillators and tone generators.

The 14 Hz Astable Multivibrator works identically to the 3600 Hz oscillator with the exception that the multivibrator is formed by U1C and U1D.

The Two D Flip Flops divide the 3600 Hz output from the oscillator to 1200 or 900 Hz. In U3A, Reset Gate U3A-6 goes momentarily high only when U1D-11 is low and $\overline{Q}$ outputs of the Divider Network are low (after 3 3600 Hz pulses from U1A and U1B The output from the Divider circuit is applied to a Darlington with R5 and R6 selected to lower the drive to the Darlington Q1. Q1 is used to drive Q2 which in turn drives a speaker in the emitter circuit and R7 selected to limit the current through the speaker and transistor. Believe me, the circuit is plenty loud. Try it to spice up the sounds on the local repeater. Cheaper than the Bullet Circuit.

Micheal Salem N5MS

Continued on next pag

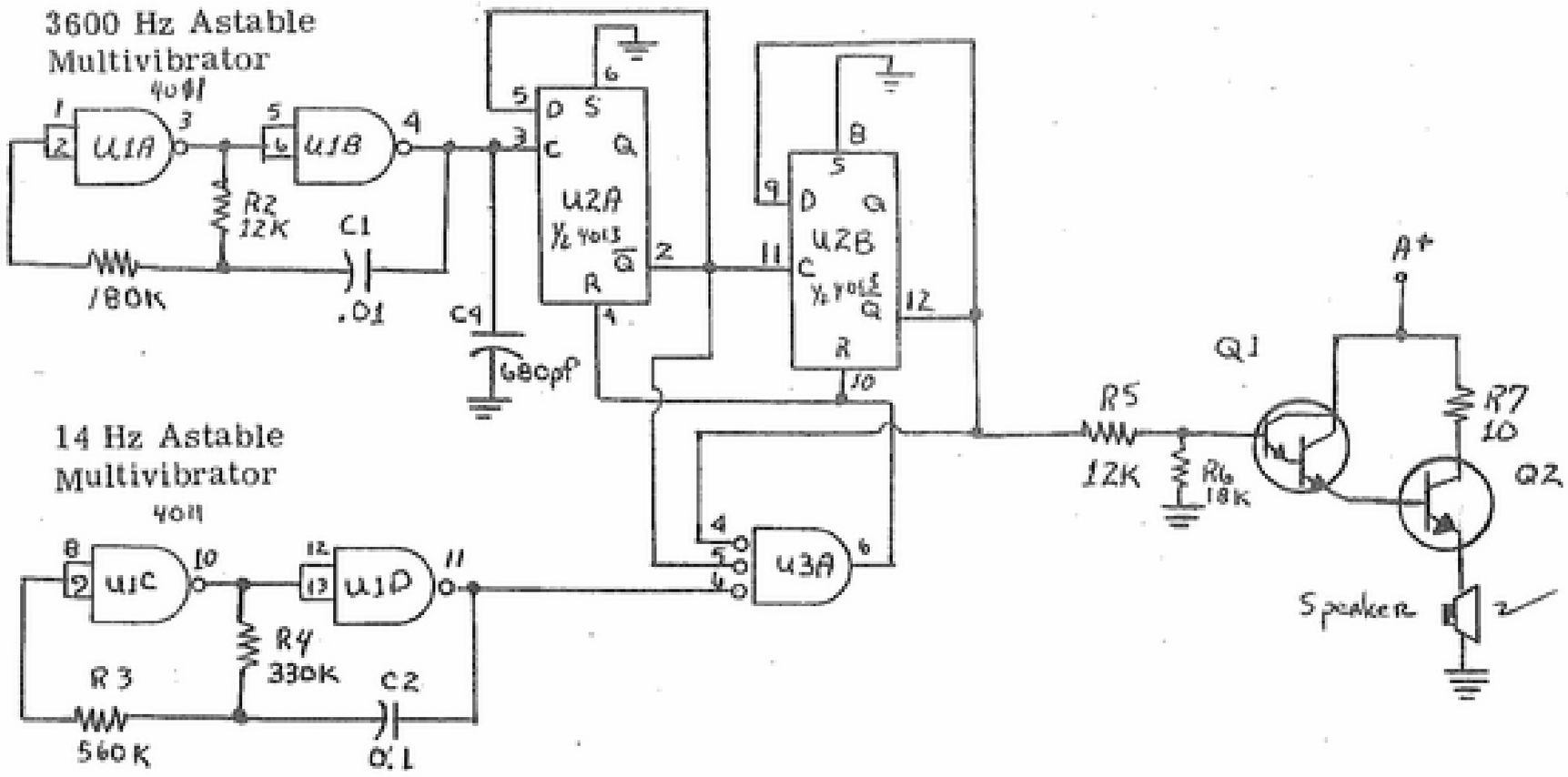

FIGURE 1. Pulsar "Electronic Ringer"

PEP UP FOR A SWAN TRANSCEIVER
(An Accessory after the Fact)

Only a couple of friends of mine know a closely guarded secret and that is that I am a closet HF operator. Oh sure, when I was first licensed many years ago, I made the usual novice rounds and operated CW and eventually graduated to the hard stuff, HF Sideband. I carried the HF rig (after struggling with a Viking II AM transmitter and HQ-129-X, I finally made the scene with a brand new Swan 350, errr, better make that three drifty) to college for one year and managed a couple of decent QSO's to talk with my parents back in the old home town, courtesy of a local amateur. The next year, the rigors of college began to bear down and I never quite got the setup going and besides the local hometown amateur moved. I drifted off to FM under the influence and tutelage of WA5TBB who converted one of the first old Link transmitter and receiver combos I had seen. Many years later, K5JB used to describe the wonderful world of HF to me in vivid terms and contacts. I resisted for sometime out of sheer laziness and determination.

Finally, WB5YWO made me take his HW-8 QRP rig for awhile to "try it out and see how you like it." Humm, this looks like a challenge, so I strung up the old antenna and began to slap a few QRP contacts on 40 meters in the ole logbook. I finally got my Swan 350 back together and began to check into a couple of QSO's and meeting a couple of schedules. My thoughts turned to consideration of a new HF rig, but I wasn't sure that it would last. In the meantime, I thought about a couple of extras that the 350 needed, so I sat down and began to construct a card with the extras I needed.

Most of my HF operation and previous experience had been conducted on the good old 40 meter band. In a fit of frenzy following the purchase of a center insulator, I strung up a 80 meter dipole that barely fit across the lot. Now that I actually was going to be operating on more than one band, I felt that it would be important to have a crystal calibrator, especially since I spent 15 minutes one evening trying to find K5JB and a QSO in progress on 75 meters. Whew! Never realized that the calibration on a band I had never used could be over 50 Kilohertz away. The calibrator definitely became a high priority after that. I am and was a moderate at CW. I generally like it and spent some time practicing with the Accu-Keyer I had built (CMOS low power version) before loosing myself on the bottom end of 40 meters. The results were gratifying and I felt that the only limiting factor was the lack of breakin or at least semi-breakin on CW on the Swan. I knew better than to try to achieve full breakin, so settled for a sidetone monitor and semibreakin.

I felt that the requirements were modest and were certainly applicable to any rig manufactured prior to 1970. After all, I did have a mint version of the Swan. No reason to sell it off if it worked. In fact, now that I have finally acquired a TS-130, I have promised the Swan to WA5JXX for a trial run and then made plans to give it to my brother for his use if he would just take the test. I'll keep working on him.

The CW sidetone generator was the first leg of this triple crown modification. I researched the literature and found a couple of suggestions in the June 1972 issue of ham radio (p. 63). The idea suggested using the -10 volt supply of the radio along with an isolating diode and keying a transistor oscillator simultaneously. After perusal, I felt that I could complicate it by the use of an opto-isolator, but would not have to isolate my sidetone oscillator from ground. The results are as follows:

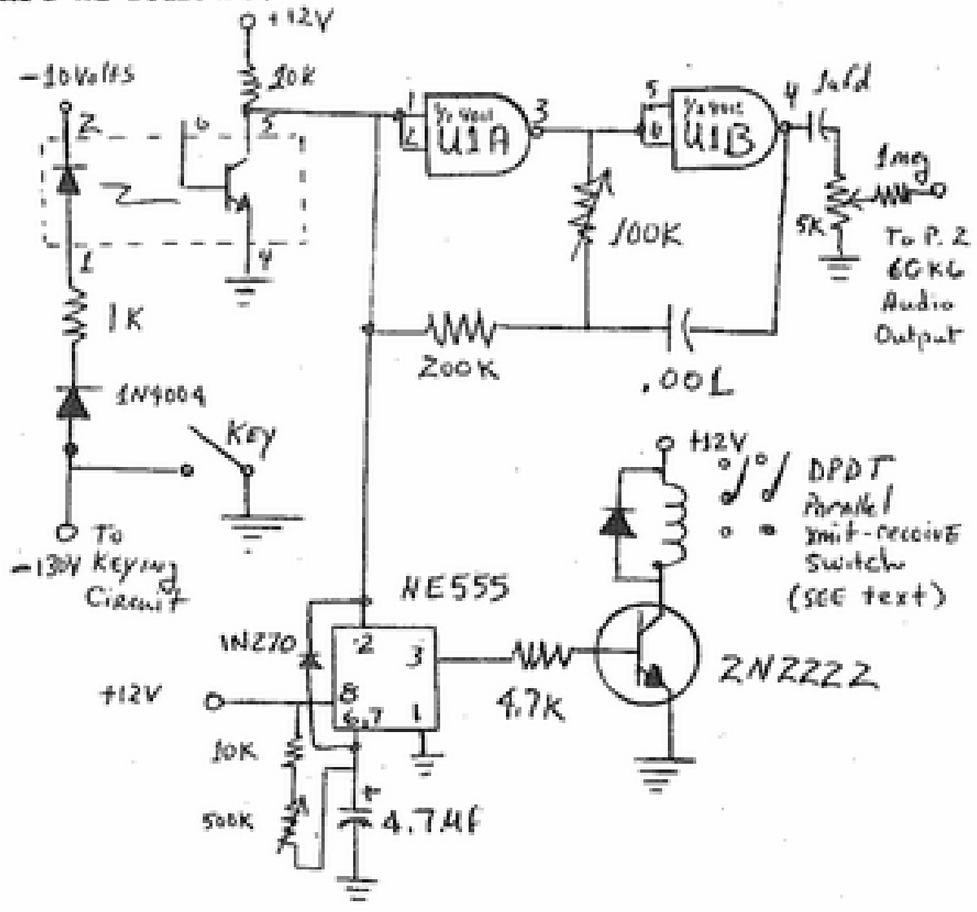

FIGURE 1: Level conversion circuit using opto-isolator for CW sidetone and semibreakin circuit.

If you follow the circuit from the left to the right, you will find that the opto-isolator is used to isolate and level convert the -130 volt grid block keying circuit from the CMOS oscillator that forms the audio oscillator. The secret of the circuit is the 1K resistor and 1N4004 diode which keept the -130 volts outs of the opto-isolator during key up conditions. The 1K resistor of course limits the current to the LED inside the opto-isolator to a safe value. I selected the value arbitrarily and experimentally to ensure good keying characteristic (i.e. good sharp and definite turnon. Higher resistors limited the LED current and prevented it from turning on.

The output of the opto-isolator is pulled up with a 10 K resistor and feeds an audio oscillator similiar to the one described elsewhere in this issue for an electronic ringer. The oscillator can also be gated on and off by breaking the lead between 1 and 2 and keying pin 1 alone while leaving pin 2 connected to the NE555 and 200K resistor. The tone can be varied by changing the 100K pot and output level is simply adjusted by the 5K output pot across pin 4. The audio sidetone is fed to pin 2 of the 6GK6, the audio output tube by coupling through a .01 ufd capacitor and 1 meg resistor. In addition, I removed R1204, R1202, and C1204 to leave the audio tube active all the time so that the sidetone could be heard during transmission and adjusted by the volume control on the front of the radio. The 5K pot is adjusted to provided a comfortable level for listening at normal volume settings of the front panel audio gain control.

The output of the opto-isolator also keys the NE555 shown on the diagram which is designed to key on a relay that I used to parallel the contacts of the receive-tune switch to automatically switch between receive and transmit. The adjustable time delay is provided by the 500K pot and provides semibreakin CW capability for the rig. Although most of the articles that I have seen just say to parallel the switch, I find that this is not the case. I was able to get by just using a DPDT relay. If you look at the switch, you can see that in the tune position, the cathode of V15A, the transmit AF Amplifier is lifted above ground to prevent audio from being transmitted during CW transmissions. To prevent this from happening, turn the mike gain all the way down or unplug the microphone. The circuit then reduces to a DPDT circuit with one circuit pulling in relay K1 and the other circuit switching keying bias.

The crystal oscillator calibrator circuit is just a little more complicated and is shown in the next figure:

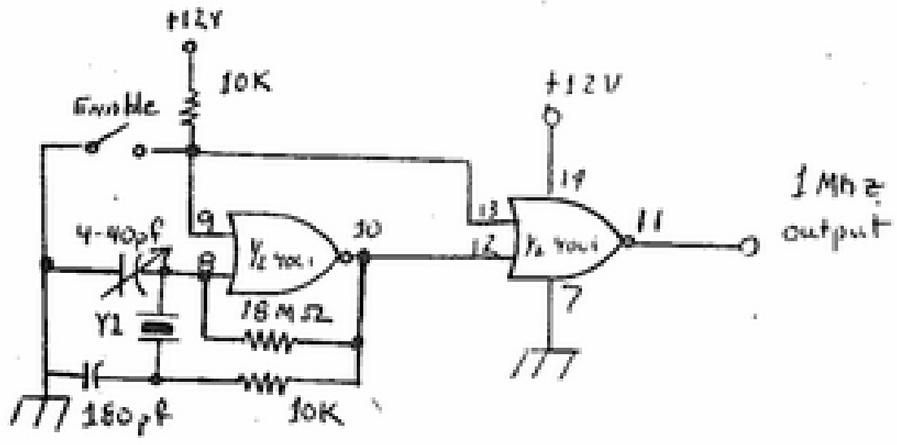

Figure 2: Crystal Calibrator oscillator. Crystal frequency is 1 megahertz. With this circuit, I could adjust the oscillator from 999,961 to 1,000,122 Hertz. Stability appeared to be good and repeatable.

I started with a 1 Mhz oscillator because I felt that it would be a useful checkpoint on 8Ø and 4Ø meters. In addition, it would be simple (I thought) to divide the output by 10 and obtain 100 Khz markers. From there, it would be a hop, skip and a Double D flip flop to 25 Khz after dividing by 4. The Divide by 10 chip was the hardest to find since my first try produced a chip that divided by 10, but did not produce a symetrical output, only a small bump every 10 counts. I finally settled on a 4029 which produced a symetrical output. The divider is as follows:

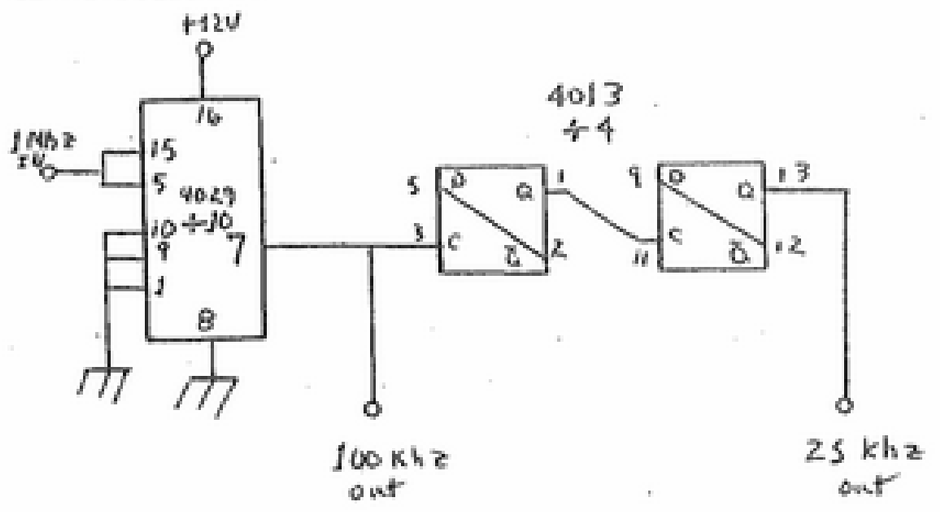

Figure 3: Divide by 10 and Divide by 4 Circuit

Had enough? Well, actually, to this point, the circuit is only piecemeal. I still found some trouble with the output since I didn't want to switch from the various outputs by switch or shield the whole thing to avoid distortion of the calibrated signal by propagation changes through the gates so I dreamed up the following diode matrix and switching arrangment. This method was necessary because of the propagation delays and mixing in the gates distorted the signal. The inputs are show along with a single output and switched as follows:

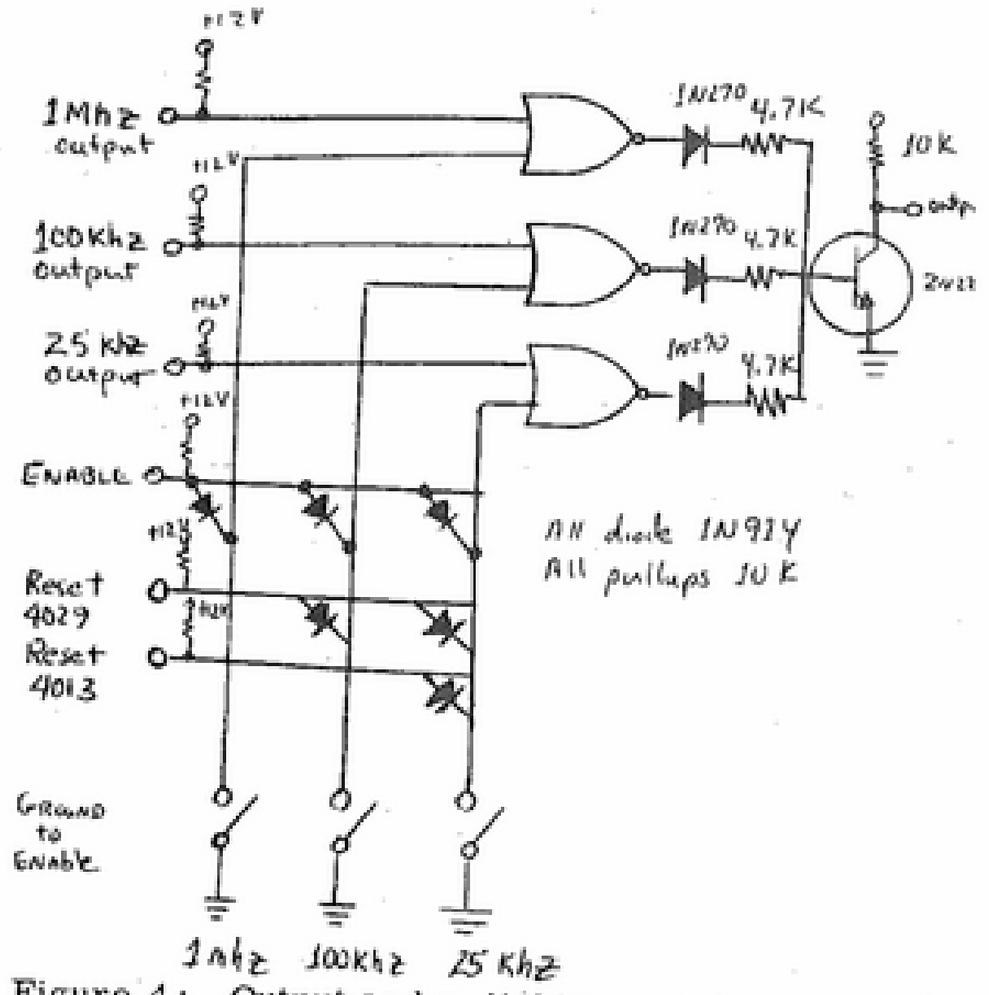

Figure 4: Output and switching matrix

The output and switching matrix switches each of of the calibrator outputs through a group of gates to provide a single output which then goes to the receiver input (past the TR switch) and "gimmicked' coupled. I experienced considerable difficulty with the 1 Mhz signal being distorted, for example, because the other divide chips were always enabled and accordingly produced phase differences which summed together to produce a distorted wave. The solution was to add the lower matrix which enables only those dividers that are needed. For example in the 1 Mhz calibrated output, the 4029 and 4013 are disabled by having their resets pulled up and off. When the 100 Khz signal is enabled, the 4029 reset is pulled low and the 4013 reset is left high. When the 25 Khz signal is activated, both the 4029 and 4013 resets are pulled low and enabled.

The circuits here are adaptable to any calibrated circuit that uses CMOS, but I am partial to the oscillator and divide circuits here since all you have is a single output and no divide circuit is enabled unless it is needed. This is almost a necessity to prevent distortion of the output signal. Although it has been a couple of months since I built up this circuit, it still works fine. Micheal Salem N5MS

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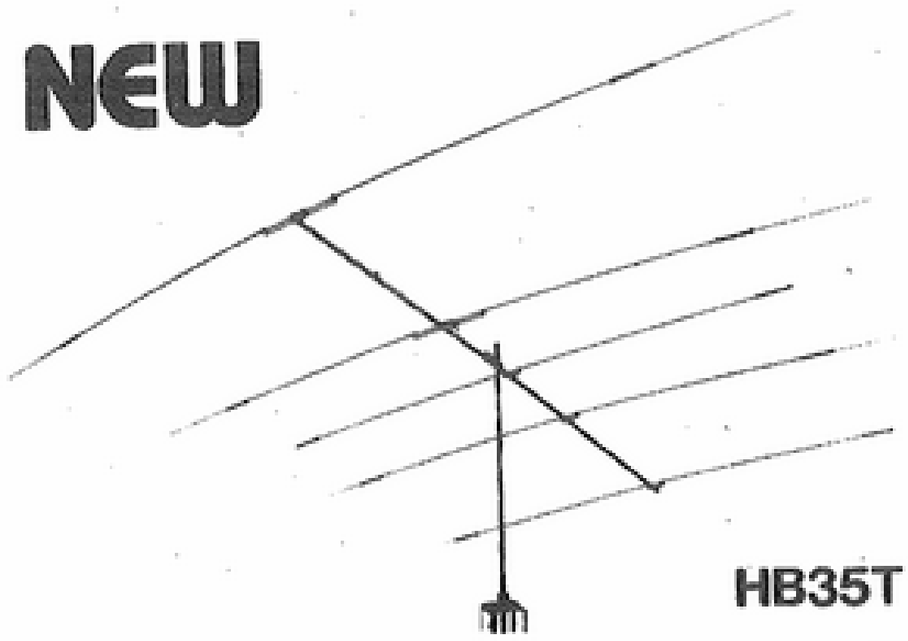

HB35T

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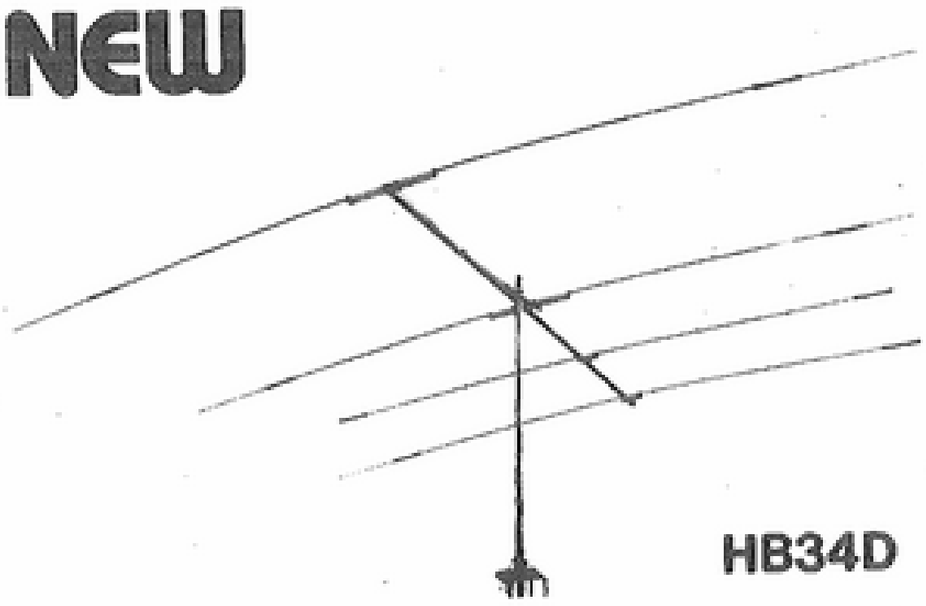
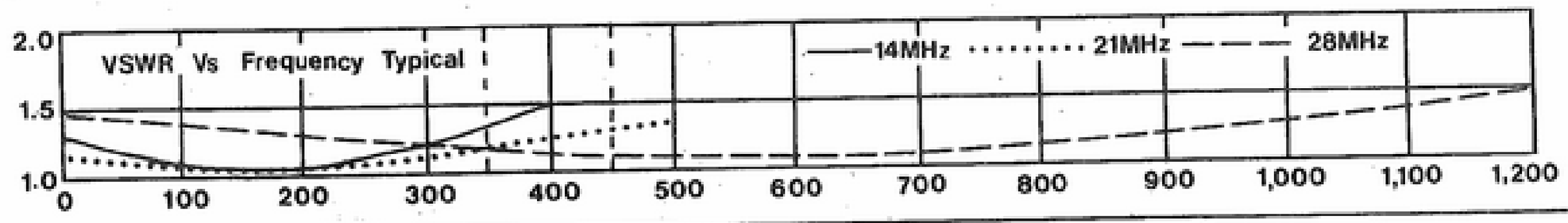


HB34D



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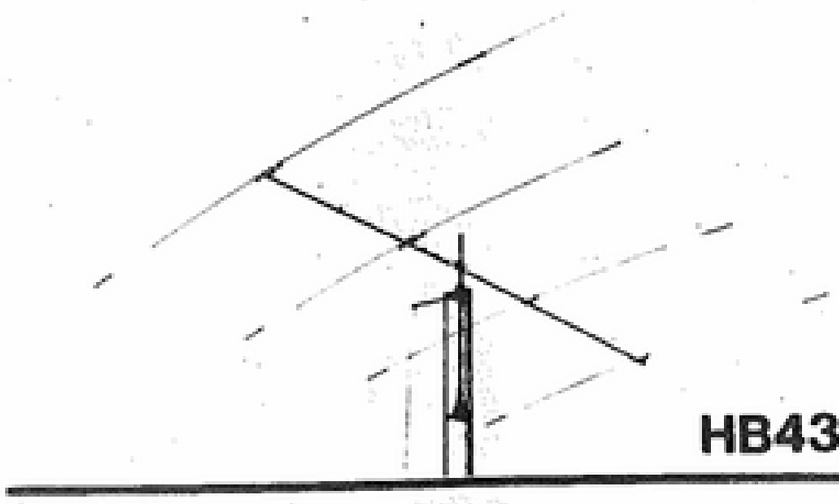
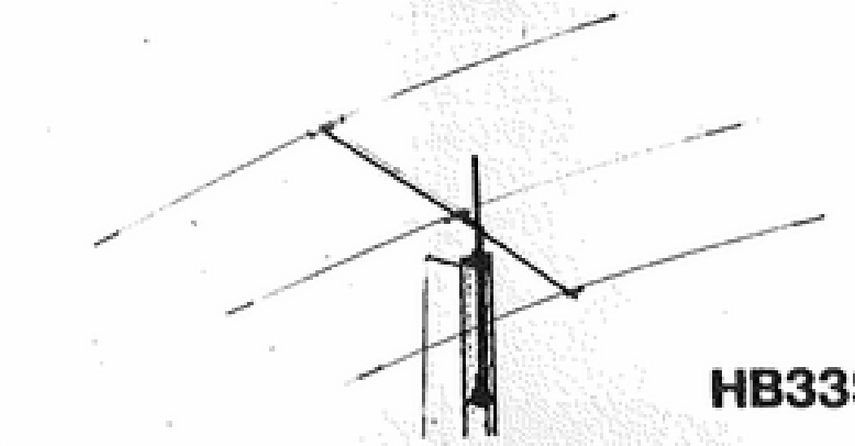


HB43SP



HB33SP

	HB35T	HB43sp.	HB34D	HB33sp
Bands	10/15/20	10/15/20	10/15/20	10/15/20
Elements/Band	5 5 4	4 4 4	4 4 3	3 3 3
Max Pwr PEP	3KW	3KW	3KW	3KW
VSWR	1.5	1.5	1.5	1.5
Impedance Ohms	50	50	50	50
Max E1 Length	27'	27'	27'	27'
Boom Length	26'3"	19'8"	16'5"	13'2"
Turn Radius	18'10"	16'9"	15'10"	15'
Wind Area Ft²	7.93	6.62	6.04	4.73
Wind Load (lbs.) @ 80mph	160	132	121	102
Boom Diameter	2"	2"	2"	1 9/16"
Mast Size	1½-2"	1½-2"	1½-2"	1½-2"
Weight Lbs	50	38	34	27
Max Wind MPH	100	100	100	100
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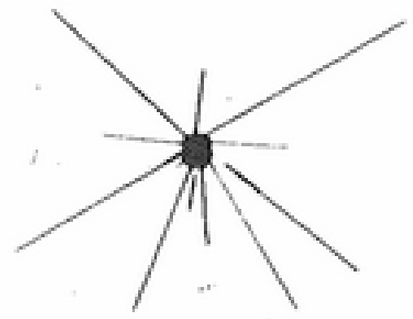

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W5 PAA

TRS-80C Memory Expansion Board

When recently given an opportunity to operate and experiment with the new TRS-80C, Color Computer from Radio Shack, I was pleasantly surprised. In this authors opinion, the TRS-80C is an excellent choice for an inexpensive computer system, especially for the beginning computer enthusiast. It combines a low price tag with very good graphics, a built in cassette tape interface, keyboard and joystick controls, a Motorola MC6809 Microprocessor, growing software support, and ease of expansion.

The "expansion port" located in the side of the computer turned out to be a point of special interest to several computer hobbyists in the area. This "expansion port" was designed as a convenient receptical for the pre-programmed ROM game cartridges marketed by Radio Shack. These cartridges sell anywhere from $35.00 to $45.00, and although their contents can be "CSAVE'd" on cassette tape, this programming is not relocatable, and cannot be reloaded and executed without plugging in the actual ROM cartridge. This means that one must have the cartridge to play the game. Feeling that having to purchase the ROM cartridges, and then being unable to trade the software (without giving up your own capability) was a great disadvantage, we set out to find a convenient way to load and execute these programs, while at the same time expanding the overall capabilities of the computer. The 16K RAM/ROM memory expansion board shown below is our solution to the problem.

There are several unique advantages this memory expansion board. Probably the popular advantage is that it allows the " game cartridge" programming to be "CSAVE" on cassette tape which can then be "CLOAD into a memory expansion board equipped TR computer, and executed without the "ROM cartridge." This make trading and duplica of software a snap!

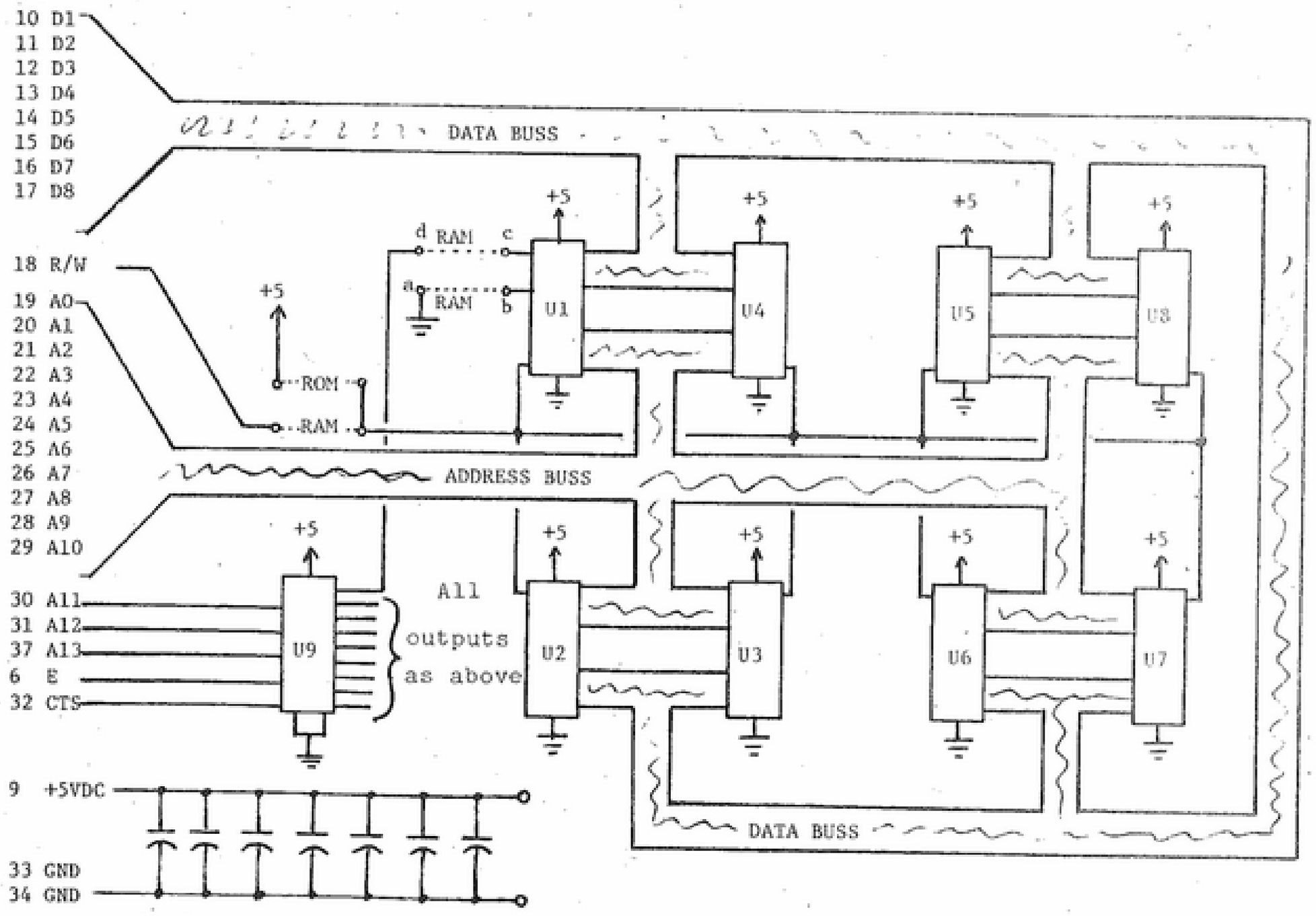
Another popular advantage to the mem expansion board is the ease in which ROM be interchanged with RAM in any 2K increm Simply unplug the TMM2016 RAM IC for the address location that you wish to change, in a programmed (Intel) 2716 ROM IC, chan two jumpers, and you've done it. This fea allows random access and read only memori to be intermixed throughout the entire 16 memory from address location C000 (Hex) t FF00 (Hex) at the users discretion.

Still another advantage to the memor expansion board is its "single IC" addres decoding. Because Radio Shack saw fit to include some address decoding for the expansion port internal to the TRS-80C, memory expansion board address decoding i easily handled by only one IC. For the ho this greatly simplifies any troubleshooti that might be required.

Bob, WB5NSV

All parts are easily available from r of the mail order houses. A complete lis parts follows:

- U1-U8 TMM2016 Static RAMS or
- U1-U8 Intel 2716 (TI 2516) ROMS
- U9 SN74138 Address Decoder
- All capacitors .1 uF 15V
- Printed circuit board and detailed instructions available from Bob Grat WB5NSV, 3317 SE 24, Del City, Ok, 7



RANDOM WORDS FROM THE PRESIDENT:

I WOULD LIKE TO SAY WELCOME TO ALL THE AMATEURS FROM THE WEST GULF DIVISION OF THE ARRL. I HOPE TO SEE A LOT OF MY FRIENDS FROM HOUSTON AND SAN ANTONIO , AND MANY OTHER CITIES IN TEXAS HERE FOR THE CONVENTION AND ALL THE GOOD TIMES WE ARE GONING TO HAVE. HAM HOLIDAY 1981 IS GOING TO BE THE BEST ONE YET. ALL YOU GUY'S BRING YOUR WIFES ALONG AND LET THEM ENJOY A FEW DAY'S AWAY FROM HOME WE HAVE PLENTY OF GOOD PROGRAMS FOR THEM TO ENJOY..WE ALSO HAVE MANY GOOD PRIZES FOR THEM INCLUDING A MICROWAVE OVEN FOR THE GRAND PRIZE.

73, BOB, WA5CJG

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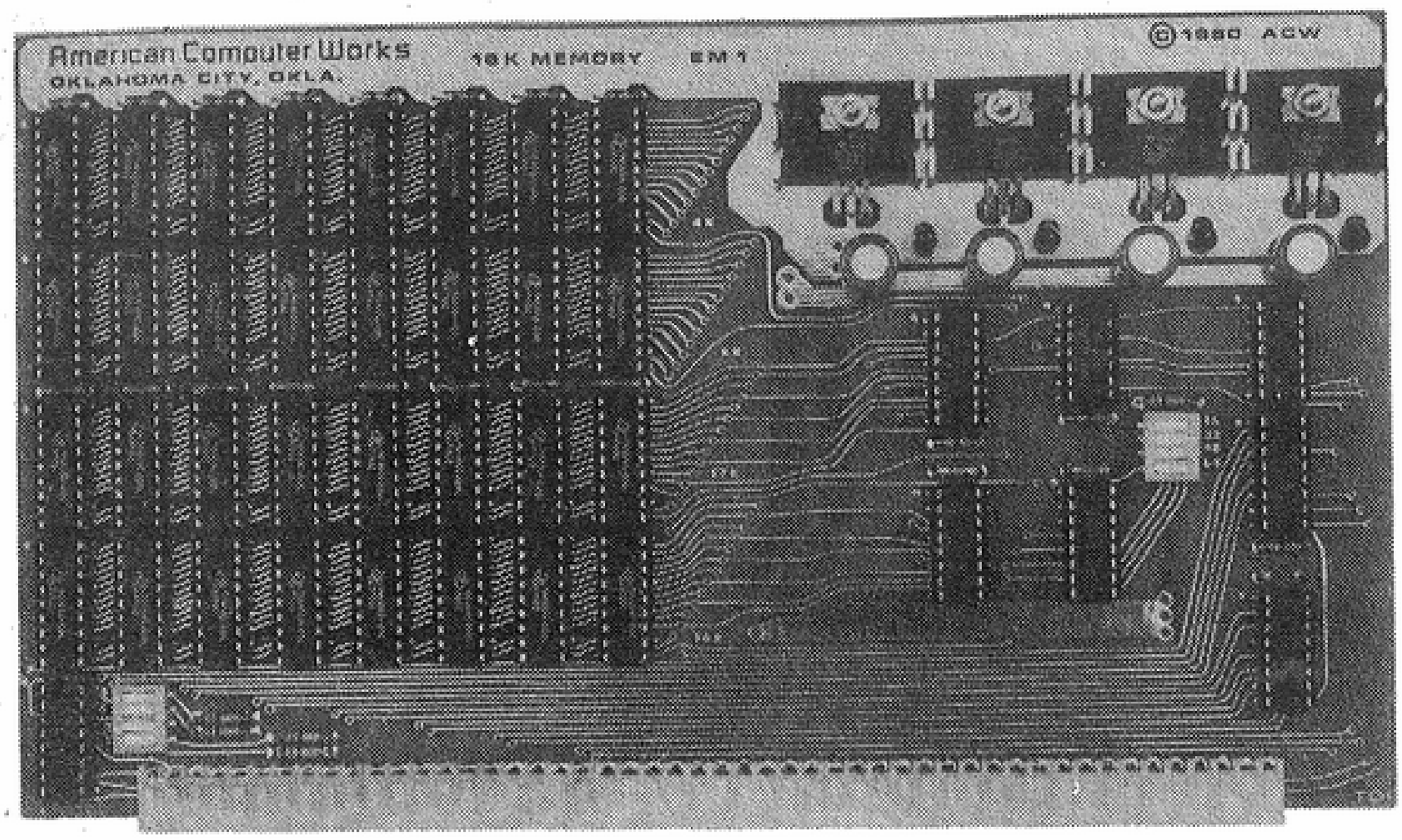

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NEWS

WELCOME TO HAM HOLIDAY

SINCE THIS ISSUE OF C&E IS GOING TO APPEAR IN THE MAILBOX OF A NUMBER OF PEOPLE WHO DON'T REGULARLY SEE IT, I THOUGHT I HAD BETTER MAKE SOME EXCUSES. SEVERAL CLUBS MAKE UP CORA AND THE C&E REFLECTS THE HETROGENEOUS PERSONALITIES OF MANY PEOPLE AND CLUBS WHICH MAKE UP CORA. I ENJOY READING THE WHOLE THING, PARTIALLY BECAUSE I KNOW WHAT IT TAKES TO SWEAT IT OUT EACH MONTH.

THIS ISSUE IS AN EXCEPTION IN THE ROUTINE OF OF THINGS BECAUSE WE ARE GOING TO HAVE TO PUT OUT TWO ISSUES THIS MONTH. I DON'T KNOW ABOUT THE OTHER WRITERS BUT I'M REALLY SWEATING IT. I JUST DON'T HAVE TWO MONTH'S WORTH OF IDEAS THIS MONTH. THE SOLUTION I HAVE IS TO LOOK BACK THROUGH A FEW BACK ISSUES FOR SOME OF THE ARTICLES THAT WERE MORE POPULAR AND REWORK 'EM.

I WISH TO EXPRESS MY APPRECIATION TO JOE, WA5ZNF, WHO MAKES ALL THIS POSSIBLE, TO BOB, WB5NSV, AND THE OTHERS WHO MAKE MAILING PRACTICAL AND ECONOMICAL, AND TO ALL THE CONTRIBUTORS WHO CRANK THIS RAG OUT EVERY MONTH. I AM PROUD OF THEM AND I HOPE YOU NON-REGULAR READERS CAN MAKE IT TO HAM HOLIDAY, ENJOY YOURSELVES, AND MEET SOME OF THE CHARACTERS OF WHOM I SPEAK. THEY'RE GOOD PEOPLE. ENJOY. JOE, K5JB

MIKE OF A MIKE - IMPROVED - ELECTRET

NOVEMBER 1980 C&E CONTAINED A HOW TO DO IT ARTICLE ON MODIFICATION OF A RADIO SHACK TIE CLIP MIKE CAT. NO. 33-1058 TO MAKE IT WORK ON AN IC-2A WALKIE TALKIE. LEE, N5CPN, PICKED UP ON IT, CAST A COLD CALCULATING EYE ON THE PROJECT AND CAME UP WITH A VASTLY IMPROVED VERSION OF THE THING. I LIKED HIS VERSION MORE THAN MINE SO I THOUGHT IT OUGHT TO BE PASSED ALONG.

THE ICOM WALKIE TALKIE HAS A UNIQUE MIKE AND KEYING CIRCUIT. WHEN A DC PATH IS CREATED FROM THE MIKE CIRCUIT AND GROUND, A SMALL CURRENT FLOWS IN THE KEYING CIRCUIT SWITCHING THE RIG OVER TO TRANSMIT. A SINGLE SHIELDED CONDUCTOR FROM THE MIKE JACK CAN HANDLE AUDIO AND THE PTT CIRCUIT. THE TIE TACK MIKE IS A NATURAL BECAUSE IT COMES EQUIPPED WITH MORE THAN ENOUGH SINGLE CONDUCTOR SHIELDED CABLE, SIX FEET OR SO AND IT IS SUITABLY SCALED TO MATCH THE RADIO BEING LITTLE AND CUTE, AND WITH LEE'S METHOD OF MODIFICATION, OPERATES SLICKER THAN A WHISTLE.

IN THE ORIGINAL VERSION, I CRAFTED A PTT SWITCH OUT OF SOME BRASS AND A PIECE OF PLASTIC STRAW BECAUSE I COULDN'T FIND A SWITCH SMALL ENOUGH. LEE FOUND SUCH A SWITCH AT WORLDWIDE. I FOUND A SIMILAR SWITCH AT TRICE ON A BLISTER PACK MARKETED BY ELECTROCRAFT WITH THE CAT. NO 35-400. REFER TO THE FIGURES TO SEE HOW LEE PERFORMED THE MOD.

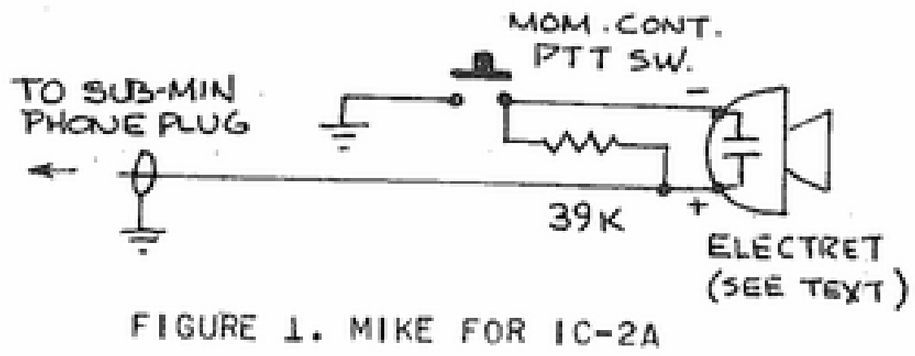


FIGURE 1. MIKE FOR IC-2A

FIGURE 1 SHOWS A SCHEMATIC OF THE COMPLETED MODIFICATION. I SUPPOSE ONE COULD GET ONE OF THE ELECTRET ELEMENTS, ALSO AVAILABLE FROM RADIO SNACK, INSTALL IT IN A FAT BALL POINT PEN AND REALLY PLAY "I SPY". I THINK THE 39K RESISTOR MAY BE A LITTLE MODIFICATION TO LEES MODIFICATION BECAUSE WE FOUND THAT IF ONE BLOWS INTO THE MIKE, OR YELLS REAL LOUD, THE RADIO WILL UNKEY. THE ELECTRET ELEMENT HAS A FET IN IT THAT WILL GO TO HIGH ENOUGH IMPEDANCE TO LOWER THE PTT CURRENT TO TOO LOW A LEVEL. STEP BY STEP INSTRUCTIONS FOLLOW:

UNSCREW THE TWO CASE HALVES AND WORK FIRST THE HALF CONTAINING THE CORD. PRY THE DISC WITH THE LITTLE BATTERY CONTACT OUT OF THE HOUSING. PUSH THE CORD IN TO GIVE IT RELIEF REMOVE THE DISC AND PARTS LEAVING THE SHIELD CONNECTED TO THE METAL CLIP. SOLDER A PIECE OF SMALL GAGE STRANDED WIRE TO THE CENTER CONDUCTOR OF THE SHIELDED WIRE AND SLIP SOME SLEEVING OVER THE SOLDER JOINT. PULL THE SHIELDED WIRE BACK INTO PLACE WITH THE METAL CLIP MAKING SOLID CONTACT WITH THE INTERIOR OF THE HOUSING.

REMOVE THE MICROPHONE ELEMENT, HOLDER AND SPRING FROM THE OTHER CASE HALF. USE HEMOSTAT OR TWO HOOKED WIRES TO GRASP AND EXTRACT PARTS. SEE FIGURE 2 WHICH SHOWS WHAT THE PARTS SHOULD LOOK LIKE. MARK THE SIDE OF THE MIKE ELEMENT WITH THE BRASS CONTACT WITH A + AND REMOVE BOTH THE BRASS CONTACT AND WIRE FROM THE ELEMENT. IN SOME MODELS OF THE MIKE THERE MAY BE A FOIL TRACE FROM THE CONTACT TO THE OUTER SHELL OF THE ELEMENT. IF THERE IS, CUT IT LOOSE WITH A SHARP KNIFE. WITH AN OHMMETER, CHECK FROM THIS CONTACT AND THE CASE FOR SHORTS. IF ONE STILL EXISTS IT WILL BE NECESSARY TO WRAP ONE LAYER OF TAPE AROUND THE ELEMENT, OVERLAPPING THE FRONT OF THE THING TO PREVENT SHORT CIRCUIT WITH THE MIKE HOUSING. IF NO GROUND FAULTS PERSIST, PROCEED BY CONNECTING THE WIRE FROM THE SHIELDED CABLE TO THE + TERMINAL OF THE ELEMENT.

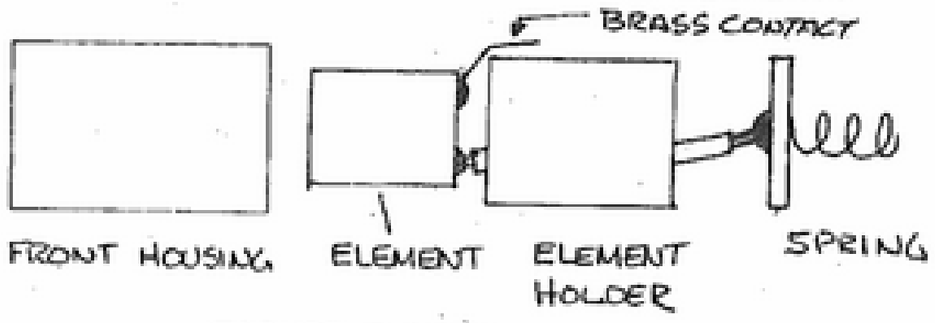


FIGURE 2 MICROPHONE PARTS

CONNECTION OF THE 39K RESISTOR IS SOMEWHAT OPTIONAL. IF IT LOOKS LIKE A HASSLE, FORGET IT. IT SHOULDN'T BE TOO DIFFICULT IF AN 1/8 WATT RESISTOR IS AVAILABLE. THE FRONT HOUSING GETS PRETTY BUSY WHEN THE SWITCH IS INSTALLED BUT A 1/4 WATT RESISTOR CAN BE CRAMMED IN THE SPACE AVAILABLE. ONE END OF THE RESISTOR IS CUT SHORT AND ATTACHED WITH THE WIRE MENTIONED ABOVE TO THE + TERMINAL OF MIKE ELEMENT. THE OTHER LEAD OF THE RESISTOR IS DOUBLED BACK, INSULATED WITH SLEEVING AND CONNECTED TO THE REMAINING TERMINAL OF THE ELEMENT, ALONG WITH A SHORT PIECE OF HOOK-UP WIRE. SEE THE SKETCH IN FIGURE 3.

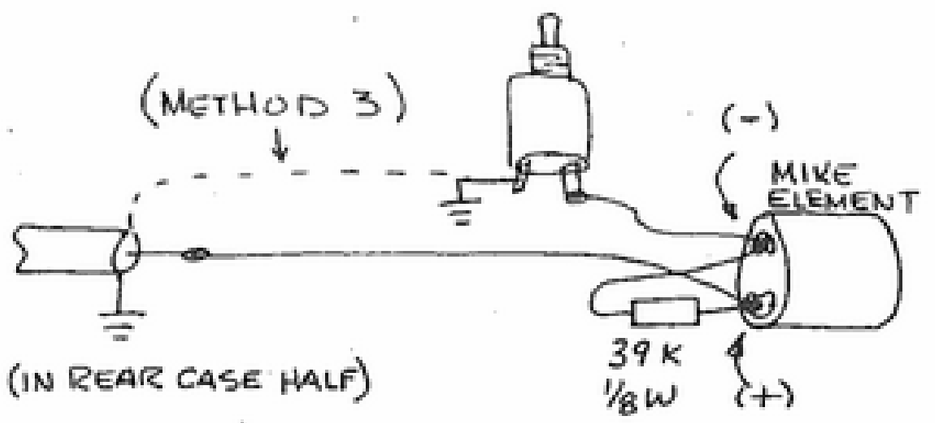


FIGURE 3. MICROPHONE PARTS SKETCH

NEXT, PREPARE THE SWITCH BY GROUNDING ONE LUG TO THE SWITCH HOUSING. LEE WAS SUCCESSFUL IN SOLDERING THE LUG TO THE ALUMINUM HOUSING OF THE SWITCH BUT HE WAS LUCKY. TWO WAYS I WOULD SUGGEST ARE EITHER WRAP A TURN OR TWO OF SOLID WIRE AROUND THE HOUSING, TWIST IT TO GET A GOOD MECHANICAL JOINT AND SOLDER IT TO ONE CONTACT, OR SOLDER A STRIP OF SHIM STOCK TO ONE TERMINAL, FOLD IT OVER THE SIDE AND OTHER END OF THE SWITCH HOUSING AND PLAN ON SANDWICHING IT BETWEEN THE MIKE HOUSING AND SWITCH BODY WHEN INSTALLING IT. A THIRD METHOD WOULD BE TO SIMPLY CONNECT A WIRE AFTER THE SWITCH IS INSTALLED AND RUN IT TO THE GROUND CLIP IN THE OTHER HOUSING HALF.

THE FRONT HOUSING MUST BE DRILLED TO ACCEPT THE SWITCH. THE HOUSING IS PLASTIC WITH A METALLIZED SURFACE. LOCATE THE CENTER OF THE HOLE FAR ENOUGH FROM THE THREADS TO PREVENT INTERFERENCE WITH THE OTHER CASE HALF AND THE BODY OF THE SWITCH. START THE HOLE WITH THE POINT OF A KNIFE BLADE, AND FINISH IT IF YOU DONT HAVE A DRILL. A 3/16 DRILL BIT CAN BE TWISTED BY HAND TO MAKE A NEAT HOLE.

THE MIKE ELEMENT, MIKE ELEMENT HOLDER AND SWITCH CAN NOW BE INSTALLED. SOLDER THE WIRE PREVIOUSLY ATTACHED TO THE - TERMINAL OF THE ELEMENT TO THE SWITCH AS SHOWN IN FIGURE 3. IF METHOD THREE OF SWITCH GROUNDING IS USED, SOLDER THE GROUNDING WIRE TO THE CLIP IN THE OTHER CASE HALF. ROTATE THE CASE PARTS A FEW TURNS COUNTERCLOCKWISE WITH RESPECT TO EACH OTHER AND SCREW THE TWO HALVES TOGETHER.

AS SOON AS THE ASSEMBLY IS TESTED AND A SUITABLE SUB-MINIATURE PHONE PLUG IS INSTALLED, IT IS READY TO GO ON THE AIR. MEASURE THE DISTANCE FROM RADIO TO YOUR MOUTH AND CUT THE CORD TO THIS LENGTH, OR MORE, AND INSTALL THE PLUG. WITH POSITIVE LEAD OF AN OHMMETER ON THE PLUG TIP, AND NEGATIVE LEAD ON THE SHIELD TEST SHOULD SHOW OPEN CIRCUIT UNTIL PTT BUTTON IS DEPRESSED. WHEN THE BUTTON IS PUSHED, AN OHMMETER SET ON X1ØØ SCALE WILL SHOW A LITTLE LESS THAN 1OK.

NOW WHEN YOU WANT TO TALK ON THE RADIO YOU DON'T HAVE TO ACT LIKE YOU'RE LOOKING FOR SOMETHING IN YOUR COAT POCKET. YOU CAN JUST ACT LIKE YOU'RE COUGHING INTO YOUR HAND OR WIPING YOUR MOUTH ON YOUR TIE. JOE, K5JB

A REGULAR REGULATOR - LM 334

WHILE THINKING OF SOME OVER SOPHISTICATED WAY TO BUILD A CURRENT REGULATOR TO PERMIT CHARGING WALKIE TALKIE BATTERIES IN THE CAR, I CAME ACROSS A DEVICE IN THE RADIO SHACK STOCK OF BLISTER PACKED INTEGRATED CIRCUITS THAT LOOKED PRETTY INTERESTING, SO I BOUGHT IT. IN THE CLEVER MARKETING STYLE OF R-S, I WAS DRAWN INTO BUYING THE THING BECAUSE THE DATA ON THE BACK OF THE CARD LEFT OUT ONE OR TWO MINOR THINGS, LIKE HOW MUCH CURRENT IT WOULD REGULATE, HOW DO ONE WIRE IT UP, ETC. I MIGHT HAVE PASSED IT UP IF THE CARD HAD SAID IT WOULD ONLY HANDLE 1Ø MA. THE BIG QUESTION IN MY MIND WAS "HOW MUCH VOLTAGE IS NEEDED TO PUT IT INTO ACTION?" MOST OF THE MICKEY MOUSE AUTO CHARGING ADAPTERS HAVE HORRIBLE CURRENT REGULATION. IF THE AUTO BATTERY SWINGS FROM 12.6 TO 14.4 AND THE BATTERY IN YOUR RADIO HAS 11.5 VOLTS ON IT, THERE IS GOING TO BE QUITE A SWING IN CURRENT IF ALL THAT IS USED TO THROTTLE THE CURRENT IS A LITTLE OLE RESISTOR.

THE CIRCUIT IN FIGURE 1 IS ONE WHICH IS COMMONLY USED WHEN IT IS DESIRED TO LIMIT THE AMOUNT OF CURRENT FLOWING IN A CIRCUIT. I HAVE USED IT A FEW TIMES BUT ONLY WHEN THERE WAS AN ABUNDANCE OF VOLTAGE AVAILABLE TO OPERATE THE THING.

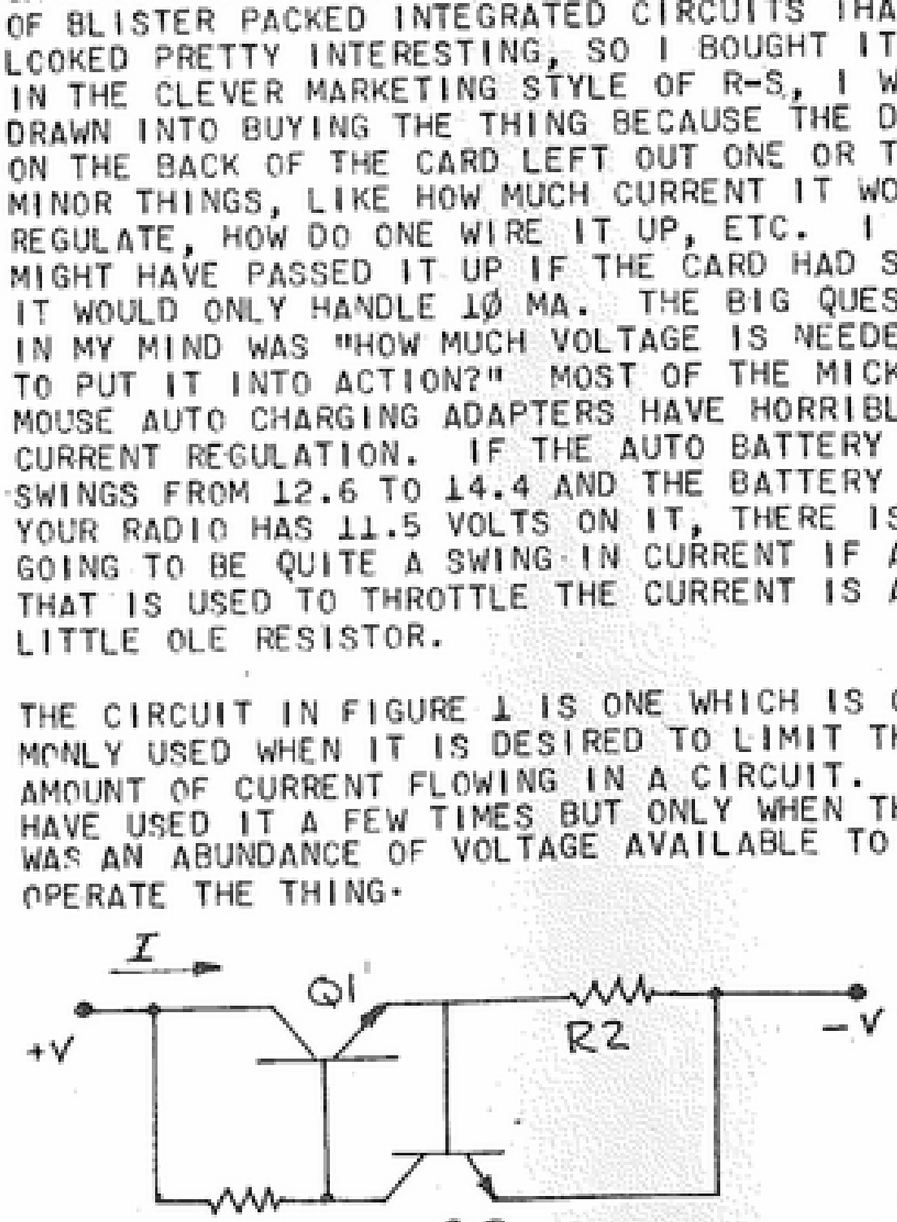


FIGURE 1. BASIC CURRENT REGULATOR

IN THE CIRCUIT, Q1 IS THE BASIC CURRENT PASS TRANSISTOR, POSSIBLY SERVING IN THE REGULATOR CIRCUIT OF A VOLTAGE REGULATOR. R1 IS RELATIVELY LARGE BECAUSE IT IS ONLY SUPPLYING DRIVE CURRENT FOR Q1. R2 IS RELATIVELY SMALL SOMETIMES LESS THAN ONE OHM. ITS FUNCTION IS TO MEASURE THE CURRENT FLOWING IN THE COLLECTOR-EMITTER CIRCUIT OF Q1. WHEN THE CURRENT IS LARGE ENOUGH TO CAUSE A DROP OF APPROXIMATELY .7 VOLTS, Q2 WILL BE TURNED ON, CAUSING IT TO SUCK AVAILABLE CURRENT AWAY FROM THE BASE OF Q1. THE ONLY SIGNIFICANT DRAWBACK TO THIS CIRCUIT IS TEMPERATURE SENSITIVITY. AS Q2 HEATS UP, THE VOLTAGE DROP ACROSS ITS BASE-EMITTER JUNCTION DECREASES AND THE REGULATED CURRENT DECREASES. THIS IS NO BIG DEAL. R2, SINCE IT IS SO LOW A VALUE, USUALLY HAS TO BE HAND MADE, AND THIS IS A BIT OF A HASSLE.

SO IN COMES THE LM-334 WITH THE PROMISE OF SUPERIOR TEMPERATURE PERFORMANCE. ONE OF THE CIRCUITS ON THE BACK OF THE CARD CLAIMED THAT ZERO TEMPERATURE COEFFICIENT CURRENT REGULATION COULD BE OBTAINED WITH ADDITION OF A DIODE AND RESISTOR. YOU KNOW WHAT YOU DO IF YOU MANUFACTURE A PRODUCT AND FIND OUT IT HAS WILD REACTIONS TO TEMPERATURE? YOU CALL IT A TEMPERATURE SENSOR! THAT IS EXACTLY WHAT NATIONAL DID WITH THIS ONE. OH WELL, NO BIG DEAL. ON WITH THE EXPERIMENTS. I STILL WANTED TO SEE WHAT IT WOULD DO IN MY CAR.

THE CIRCUIT IN FIGURE 2 IS THE BASIC APPLICATION OF THE THING, USING THE SYMBOL ON THE BACK OF THE CARD FOR CURRENT SOURCE. R IS A PROGRAMMING RESISTOR. UNFORTUNATELY, THE DATA ON THE BACK OF THE CARD IS NOT CLEAR ON HOW IT IS SELECTED. AFTER FOUR CURRENT AND RESISTANCE MEASUREMENTS, I CAME UP WITH THE RELATIONSHIP THAT R IS EQUAL TO APPROXIMATELY .Ø7Ø DIVIDED BY THE DESIRED CURRENT. NOT KNOWING AT THE TIME WHAT CURRENT WAS SAFE, I HELD IT UNDER 1 MA. I FOUND OUT LATER THAT IT IS GOOD FOR 1Ø MA, WHICH STILL ISN'T ENOUGH TO CHARGE A BATTERY OF ANY RESPECTABLE SIZE.

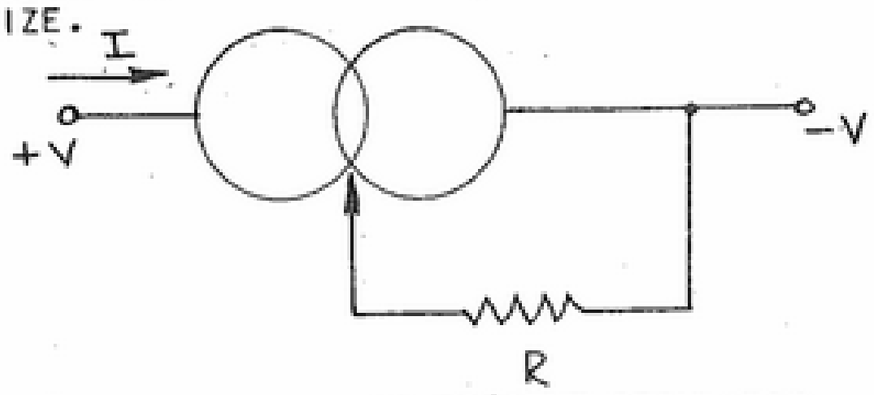


FIGURE 2. BASIC CURRENT REGULATOR

THE FIGURE 3 SKETCH IS THE FINAL RESULT AND PURPOSE OF THIS ARTICLE. THE TRANSISTOR WAS ADDED AS A CURRENT AMPLIFIER AND THE 68Ø OHM RESISTOR WAS ADDED TO SIMULATE THE CIRCUIT ON THE BACK OF THE CARD THAT WAS SUPPOSED TO HAVE ZERO TEMPERATURE COEFFICIENT. WHERE IT HAD SPECIFIED A DIODE, I PUT A BASE-EMITTER JUNCTION OF A POWERHOUSE TRANSISTOR. THE 5ØØ OHM POT WAS INSTALLED BECAUSE I REALLY WASN'T SURE WHAT THE THING WAS GOING TO BE USED FOR WHEN I FINISHED IT, AND I'M STILL NOT.

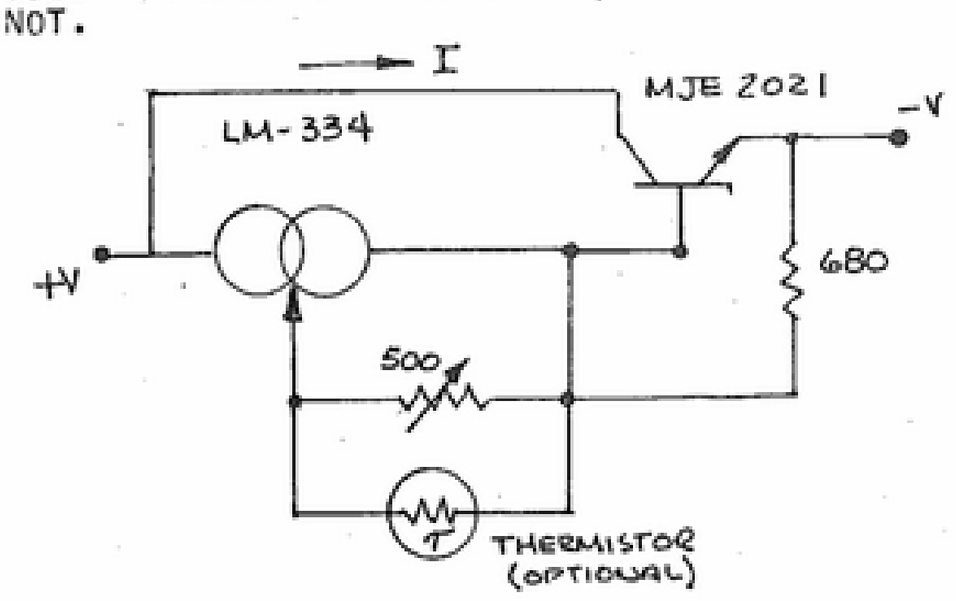


FIGURE 3. HIGH CURRENT REGULATOR

THE THERMISTER WAS ADDED AS AN EXPERIMENT BECAUSE THE TEMPERATURE COEFFICIENT WASN'T ALL THAT TERRIBLE, BUT I THOUGHT IT COULD BE IMPROVED. THE ONLY THERMISTORS I HAVE ARE ONES OUT OF MOTOROLA RAPID CHARGE BATTERIES THAT HAVE GONE SOUTH. I HAD NO IDEA HOW VALUABLE THESE THINGS ARE UNTIL I LOOKED UP SOME PRICES IN THE CATALOG IN PREPARATION FOR THIS ARTICLE. WOW! SEVEN OR EIGHT BUCKS FOR SOME OF THEM. THOSE WERE THE CHEAP ONES THAT ACTED LIKE THE ONES IN THE BATTERIES. SOME OF THE LAB GRADE ONES WERE OVER THIRTY BUCKS! NOW YOU SEE THE REASON FOR THE NOTE ON FIGURE 3 THAT THE THERMISTOR IS OPTIONAL.

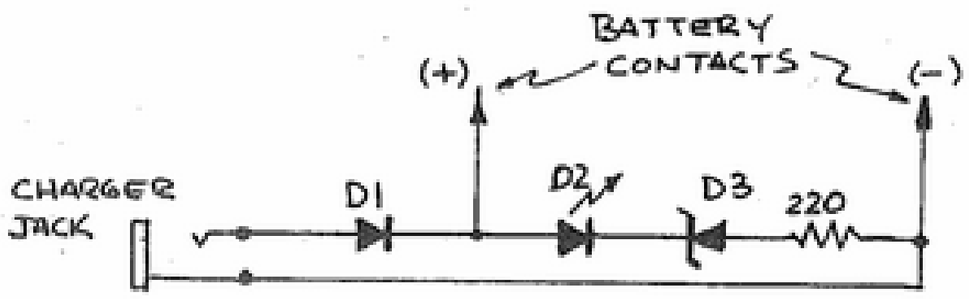
I HAVE NO EXPERIENCE WITH THERMISTORS USED IN TV SETS BUT THEY MIGHT COME A BIT CHEAPER AND IF THE VALUES ARE RIGHT, BUT AS PIA SAYS, "I DUNNO". THE THERMISTOR IN THE MOTOROLA BATTERY HAS ABOUT 7Ø OHMS AT A COOL ROOM TEMPERATURE, GOING TO ABOUT 15K IN A REAL HOT CUP OF COFFEE...THATS ABOUT AS SERIOUS I'M GOING TO BE ABOUT THE THINGS UNTIL I DISCOVER A VALUABLE USE FOR THEM, BESIDES PREVENTING BATTERY BLOW-UP.

NOW DOWN TO THE BOTTOM LINE. TESTS WERE RUN ON MY YAESU FT-2Ø7R WHICH HAS NINE CELLS IN THE BATTERY AND A SERIES DIODE BETWEEN THE BATTERY AND THE SUBMINIATURE CHARGING SOCKET IN THE BOTTOM OF THE RADIO. WHEN FULLY CHARGED, THE BATTERY HAS A LITTLE OVER 12 VOLTS ON IT. WITH THE DIODE DROP, THERE MUST BE AT LEAST 12.7 VOLTS AVAILABLE AT THE SOCKET TO CHARGE THE RADIO. I KNEW I WAS ALREADY IN TROUBLE BECAUSE MY CAR BATTERY HAS ONLY 12.6 VOLTS ON IT WHEN THE ENGINE IS OFF AND THE SUPERFICIAL CHARGE HAS BLED OFF. THINKING I MIGHT WANT TO USE THE CIRCUIT ANYWAY, JUST HAVING TO RACE THE ENGINE WHEN CHARGING THE RADIO BATTERY, I CRANKED UP THE VOLTAGE OF THE POWER SUPPLY AND MEASURED WHAT WAS NEEDED. AT 1.5 VOLTS ABOVE THE BATTERY VOLTAGE, THE REGULATOR ALLOWED 5Ø MA TO PASS. AS THE VOLTAGE WAS RAISED, THE CURRENT DROPPED TO THE SET POINT OF 45 MA. THAT'S NEGATIVE RESISTANCE, FOLKS, A KINKY CHARACTERISTIC THAT IS USED TO BUILD OSCILLATORS. ANYWAY, SOLID REGULATION WAS ACHIEVED WITH 1.9 VOLTS ACROSS THE CIRCUIT. THE LM 334 HAD ABOUT 1.5 VOLTS ACROSS IT. THIS ISN'T BAD PERFORMANCE FOR A CURRENT REGULATOR.

LIKE I SAID, I DON'T KNOW WHAT I WILL ULTIDO WITH THE THING I BUILT BUT I PUT IT IN AN ALUMINUM 35 MM FILM CAN WITH SUITABLE SOCKET AND PLUG CONFIGURATION TO PERMIT IT TO KEEP THE RADIO CHARGED WHEN I'M RUNNING DOWN THE ROAD ANYWAY. I SUSPECT IT WILL COME IN HANDY FOR CONTROLLING CHARGE ON VARIOUS BATTERIES WHILE USING POWER SUPPLIES THAT ARE OTHERWISE UNREGULATED. I HAVE ALREADY FOUND THE LITTLE FELLA HANDY FOR CHARGING ONE ORPHAN BATTERY AT THE FIVE HOUR CHARGE RATE OF 9Ø MA. WHO KNOWS, THE THING MIGHT BE MORE USEFUL THAN I ORIGINALLY THOUGHT. JOE, K5JB

HOW DO YOU CHARGE A NEKKED BATTERY - RERUN

FRED, KA5CXW, CLAIMS THE CIRCUIT FROM FEB. 8Ø C&E THAT TOLD HOW I CHARGE THE FT-2Ø7R BATTERY OUT OF THE RADIO, WAS HANDY AS POCKET ON A SHIRT. HE WANTED ME TO RE-RUN IT IN THIS ISSUE SO HERE IT IS.



BATTERY CHARGING STAND

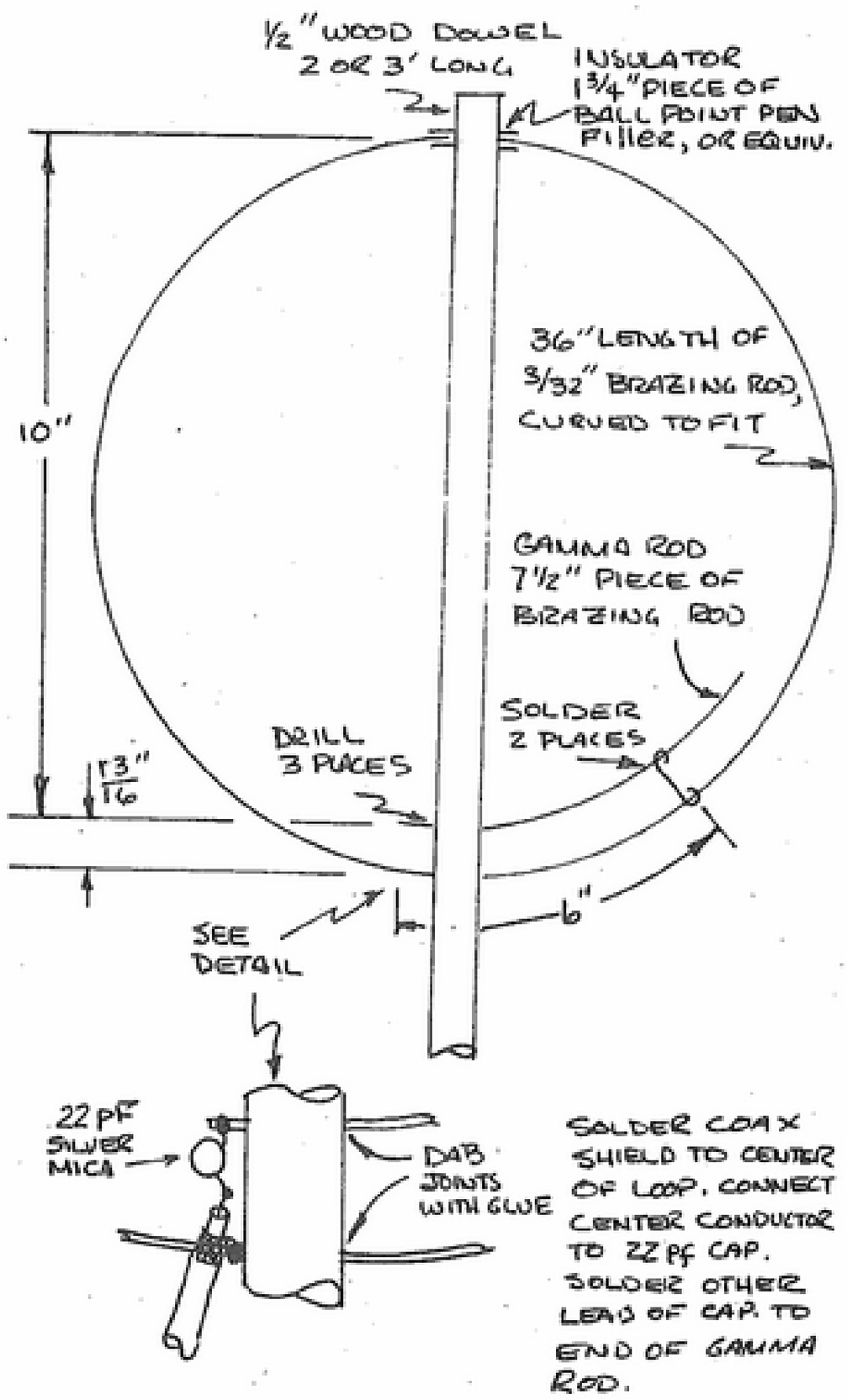
THE CIRCUIT DOES TWO THINGS. IT PERMITS A SPARE BATTERY TO BE CHARGED, WITH CERTAINTY THAT A CHARGE IS TAKING PLACE, AND, IT PERMITS A LIMITED TEST TO BE MADE ON CONDITION OF CHARGE ON THE BATTERY.

FROM LEFT TO RIGHT, THE CHARGER JACK IS A SUBMINIATURE ONE TO MATCH THE CHARGER FOR THE RADIO. DIODE D1 PREVENTS DISCHARGE OF THE BATTERY INTO AN EXTERNAL CIRCUIT AND SIMULATES THE INTERNAL WIRING OF THE RADIO. DIODE D2 IS A LIGHT EMITTING DIODE. IT WILL LIGHT DIMLY IF A FULLY CHARGED BATTERY IS PLACED ON THE CHARGING CONTACTS WITHOUT POWER APPLIED TO THE JACK. IT WILL GLOW BRIGHTLY IF POWER IS APPLIED AND THE BATTERY IS NOT MAKING GOOD CONTACT. A DISCHARGED BATTERY WILL EXTINGUISH THE LED WHEN GOOD CONTACT IS MADE WITH THE CHARGING CONTACTS. D3 IS A ZENER WHICH WAS EXPERIMENTALLY SELECTED TO CAUSE ALL OF THE ABOVE TO HAPPEN. MINE HAPPENS TO HAVE A ZENER BREAKDOWN VOLTAGE OF 1Ø.4 VOLTS. EITHER A 1Ø OR 11 VOLT ZENER WOULD PROBABLY WORK WELL, AS LONG AS THE USER BECAME FAMILIAR WITH ITS CHARACTERISTICS. THE 220 OHM RESISTOR LIMITS CURRENT THROUGH THE LED AND ZENER DIODE.

THE CHARGING CONTACTS IN MY ADAPTER ARE LITTLE INSULATED SOLDER TERMINALS. A COUPLE OF SPRINGS, OR ONE CUT IN HALF TO MAKE TWO, FROM A BALL POINT PEN SHOULD WORK FINE. FRED MADE HIS IN SOME KIND OF CUTE LITTLE BOX BUT I DIDN'T HAVE A CHANCE TO LOOK AT IT BEFORE DEADLINE OF THIS ISSUE. CHECK WITH FRED FOR DETAILS. JOE, K5JB.

SID'S LOOP - AGAIN

THE ANTENNA ILLUSTRATED HERE IS BROUGHT TO YOU BY POPULAR DEMAND FROM ARCHIVES OF THE C&E. ONE FEATURE OF SID'S LOOP IS THAT IT HAS MORE OR LESS A SINGLE NULL SOMEWHAT LIKE A CARDOID. IT IS SIMPLE, RUGGED AND HANDY TO HAVE AROUND WHEN SNAKE HUNTING. A REFLECTOMETER CAN BE USED TO PLACE THE GAMMA MATCHING SHORT WHERE MINIMUM REFLECTED POWER IS MEASURED BUT I DON'T KNOW THAT IT WOULD WORK ANY BETTER, EXCEPT FOR TRANSMITTING. TOM, K5LDI, AND I RAN SOME TESTS ONE DAY AND DISCOVERED THAT, WHEN TUNED, THIS ANTENNA IS A TERRIFIC IMPROVEMENT OVER A RUBBER DUCKIE. NULL APPEARS BROADSIDE TO THE ANTENNA JUST LIKE A CLASSIC LOOP, EXCEPT FOR DIFFERENT REASONS. K9JTW HAS INFORMATION ON SOURCE OF LOOPS OF THE RIGHT SIZE USED IN HOBBY CRAFTS. HE HAS ALSO "SQUISHED" THE SHAPE OF THE THING TO ENHANCE THE SINGLE NULL CHARACTERISTIC. ASK HIM FOR THE LATEST DETAILS. JOE, K5JB



W5KOZ DF ANTENNA
(SID'S LOOP)

TRI-CITY AMATEUR RADIO CLUB

Holdenville - Shawnee - Wewoka

The regular meeting of the TCARC was called to order by Pres. WB5UBB. Roll call was answered by 18 members present. Summer plans were made for the club with an ice cream and hamburger fry in the making with WB5OFC and WB5TYW as a commettie of two to plan. Our pro gram for the evening was WB5OFC wáth a very interesting talk and a film about "Self defen se for Women".

Election of officers or the "railroad ran again" was held with the same old faces to be the leaders for another year. President: WB5UBB John; V.P. WB5VLT J B: Sec.Treas FA5FOA Nancy and reporter WB5TYW Yvonne. Our directors are W5ADC Reedy; K5ZDB Walt and WB5TFX Ben.

Nightriders N5CPN;and XYL; WB5TFX; WB5TFY; WD5CGN; WB5VLT; WB5TYW and WB5UBB coffee braeking and invading Sambo's in Shawnee at odd hours recently. N5CJH finally getting all his gear in proper operating condition. W5ADC busy printing some very nice QSL lately.

WD5CGN, Jeff won the grand prize at the Lawton Hamfest. a Kenwood 130-S. Jeff is allowing his father WB5TFX to buy a half interest in the rig.They left their tickets with WA5FSN to win and pick up the goodies. "Thanks Leonard" P.S WB5TFY gets to use it also.

"TCARC Member"

K5ZDB Walter Graves better known as "Walt" and a charter member of TCARC is a veteran Morse Telegraph Operator, having his beginning with trying to use parts from his mothers alarm clock to build his first telegraph set, after two clocks and tries he gave up the effort but did not loose his entheuism to learn the Morse code and be a Morse Telegrapher. Walt attended McAlester Public Schools and worked at various jobs. Using the railroad as transportation he worked around Okla Texas and Kansas and finall at 19 was strolling along Main street in Ft. Worth when suddenly he heard a telegraph inst rument sounding overhead,checked it out and found it was coming from the "Draughons School of Telegraphy where he enrolled as a student and after a few months of school he became a Telegrapher for Western Union at Coal Gate, O K and later at Grandfield, Alva and Durant. Aftre W U changed to Simplex he resigned and worked as a Telegrapher for the Texas Pipe-Line Co. and about 20 years with Texaco, after 39 years as a Telegrapher Walt retired and is now happily retired and enjoying"Ham Radio" some gardening but mostly "HAMMING" Walt is also a member of the Morse Telegraph Club of OKC, a yearly meeting in OKC each April to celebrate Prof. Morse's birthday.The club met April 25,1981 at Queen Ann's cafeter ia where W U Had a wire setup for all Ex W U Railroad and all other Morse operators to try out their skill with the old American Morse code.... Walt licensed in Texas about 20 yrs ago and enjoys working the International Morse Code as much as the American Morse Code and invites any one who hears him on the band to give him a call.....

73
WB5TYW
Yvonne

PROGRAM

4:00 pm	FRIDAY	REGISTRATION OPENS
7:30 pm	Q L F CONTEST We furnish the key, you use it.	EYEBALL QSO's
8:30 pm	Q S O PARTY Alias QRM Contest ot Intermod City	
	SATURDAY	
9:00 am	WINDPOWER GENERATION Karl Bergey of Bergy Windpower Co.	
10:00 am	COMPUTERS AND HAM RADIO + ASCII Randy Stafford of Microlithics, Inc.	
11:00 am	OKLAHOMA REPEATOR SOCIETY MEETING	
11:00 am	DX FORUM Headed by Coy Day, N5OK	by the OK DX Assoc.
NOON BREAK	NOON BREAK	NOON BREAK
1:00 pm	CENTRAL OKLAHOMA RADIO AMATEURS, Annual meeting of clubs.	
2:00 pm	MICRONAVE RECEIVING TECHNIQUES Dr. Fagan of Oklahoma University	
4:00 pm	ROCKWELL COLLINS PRESENTS	
7:00 pm	BANQUET Speaker, Harry Dannals ARRL pres. Magician, Martin, KA5JUJ will saw Kay, WD5DYJ in half. Other acts. DANCE Country & Western	
10:30 pm	NIGHT OWL NET MEETING	
MIDNIGHT	WOUFF HONG	
	SUNDAY	
8:00 am	Q. C. W. A. BREAKFAST	
9:00 am	M A R S Meetings	SMIRK Meeting
10:00 am	A R R L FORUM	
1:00 pm	DRAWING	

LADIES PROGRAMS

FRIDAY		
7:30 pm	DRY FLOWER ARRANGEMENTS By Hobby Lobby	
8:30 pm	MANAGING EMERGENCY SITUATIONS AROUND THE HOME Dr. Danny Cassidy	
SATURDAY		
9:30 am	SKIN CARE CLASS AND DEMONSTRATION Mary & Bob Wanless	
11:00 am	MICROWAVE COOKING Shingleton Appliances	
NOON BREAH	NOON BREAK	NOON BREAK
1:30 pm	B I N G O .	
3:30 pm	SEWING ROGRAM Singer Sewing Co.	
SUNDAY		
10:00 am	B I N G O	

Ladies grand prize a MICROWAVE OVEN.

The South Canadian Amateur Radio Society

THE ADVENTURES OF Q.R. MARY AND HER LAMB

(EDITOR'S NOTE: The Author is a life member of ARRL and has never had any trouble with the FCC... up until now, anyway.)

I've spent some time lately looking over the new "plain language" regulations as prepared by our good friends at the FCC, and the schedule has allowed more time than usual with some of our popular ham magazines, QST especially. I've concluded that somewhere between the two, there must be an English language.

You remember the nursery rhyme:

Mary had a little lamb,
Its fleece was white as snow,
And everywhere that Mary went
The lamb was sure to go.
It followed her to school one day,
Which was against the rule.
It made the children laugh and sing
To see a lamb at school.

Did you ever wonder what that little classic might look like if it were done in the new FCC style, or as a tech article for QST?

Well...

RULE 10 -- MARY AND THE LAMB

97.30 -- General principles
97.31 -- Q. Are there people in our story?
A. Yes! There are people in our story!
97.32 -- Q. Who are these people in our story?
A. Actually (and you will find this very interesting), only one person is identified by name. This is a female named Mary. In addition, "children" are mentioned.
97.33 -- Q. So the story is about a girl named Mary and some "children"?
A. Yes.
97.34 -- Q. Are there any other major figures in this story?
A. Yes. There is a lamb.
97.35 -- Q. How darling!! Does the lamb have a name?
A. While it is tempting to speculate, actually we do not have evidence of the name. We do know, however, that the lamb had white fleece.
97.36 -- Q. I see. Are there any other general elements we should remember?
A. Yes. The lamb followed Mary around. Understanding of this fact is crucial to understanding of the story in general.

(PARTS 97.37, 97.38, and 97.39 LEFT INTENTIONALLY BLANK IN THIS PRINTING.)

97.40 -- Details about Mary and lamb.
97.41 -- Q. Who was Mary?
A. Mary was a little girl of school age and she was characterized by the fact that she had a lamb.
97.42 -- Q. A lamb! How sweet! What did the lamb look like?
A. Its fleece was white as snow.
97.43 -- Q. Did the lamb have any other identifying characteristics?
A. Yes. It followed Mary everywhere.
97.44 -- Q. Did the lamb follow Mary to the bathroom?
A. This is a common misconception which the Commission has taken steps to eliminate in proposed rule-making. Actually, what the lamb did was follow Mary to school.
97.45 -- Q. When?
A. One day.
97.46 -- Q. Oh, dear! Was this allowed?
A. No. Lambs following children to school generally, and Mary's lamb following Mary to school specifically, are both forbidden by the rules.
97.47 -- Q. What resulted from the lamb's illegal operations?
A. In this case, the children laughed and sang. Some versions say they danced and sang.
97.48 -- Q. Why did they do that?
A. Evidently the children found it odd that a lamb would be at school. As is sometimes the case with any of us when confronted by surprise, their response was levity. This is a reaction well rooted in Adlerian psychology.
97.49 -- Q. If I take a lamb to school, will the FCC laugh?
A. Not if you hold an Amateur Extra Class license. Other license grades, however, are not authorized to operate in school zones or in the lower 25 KHz of the good bands. In any case you must have both the principal and the lamb sign off your log book. (See: "What Is Third Party Treffic?", Section 814.)

The ARRL, meanwhile, would do it a little bit differently...

BUILD YOUR OWN INFLATABLE LAMB

By Joe ("Old Timer") Jones, W1A

Since the time of Hiram Percy Maxim and the invention of electricity and sunlight by the ARRL, we have always been first to report new and exciting news in our beloved h; . . This month is no exception as we bring to the astonished world the first word of Mary and her little lamb.

Since time immemorial, paradoxes in long-range communications have been probed by the radio amateur, and solved through experimentation and application of recognized engineering principles. Understanding of the story of Mary and her lamb is no different. It is in fact a classic illustration of the inverse relationship between expectation and result when child and animal [(c) + (a)] juxtapose with children and rules [(ch) + (r)]. The simple result, as univeral as Ohms Law (See the groundbreaking article, "ARRL Announces A New Law," in the January, 1980, QST, page 63), can best be expressed through the simple equation:

$$[(c) + (a)] + [(ch) + (r)] - 381x6 = V^2$$

where the (c), (a), (ch) and (r) have been defined, there are 381 children in the school (in 6 grades), and the answer is expressed as V, viz., the response of the (ch) to the (a) at school.

At the outset it must be remembered that the child (c) had a LAMB (in this case (a). Beginners too often overlook this, and are confused the rest of their lives. Understanding of the story is in direct proportion to remembering of this essential information and inversely related to the square of the number of times it is forgotten. Write it on your forehead if you have to. Also remember that the child is named MARY. This is *crucial*. If you have a computer, put this in it somewhere:

```
STOP?          YES
GO?            NO
SKIP TO FORTRAN B?  MAYBE
MARY =  (c)    YES    BLOW FUSE
LAMB =  (a)    I THINK SO
or (simplified program):
(c) HAD (a)    PRINT THIS!
END PROGRAM 23567$%¢&**  STOP
```

We can ignore the experimental data indicating that the lamb had fleece the coloration of which is said to have strongly resembled frozen precipitate in the common (except in transequatorial circuits) crystalline structure and move directly to the next major principle, viz., *"Everywhere that Mary went, the lamb was sure to go."*

continued on next page

This, too, is important to remember.

The lamb's predeliction toward ambulatory pursuit of Mary is critical Factor No. 2 (CF#2) in any meaningful exegesis of the narrative. Vector analysis shows the factor as follows:

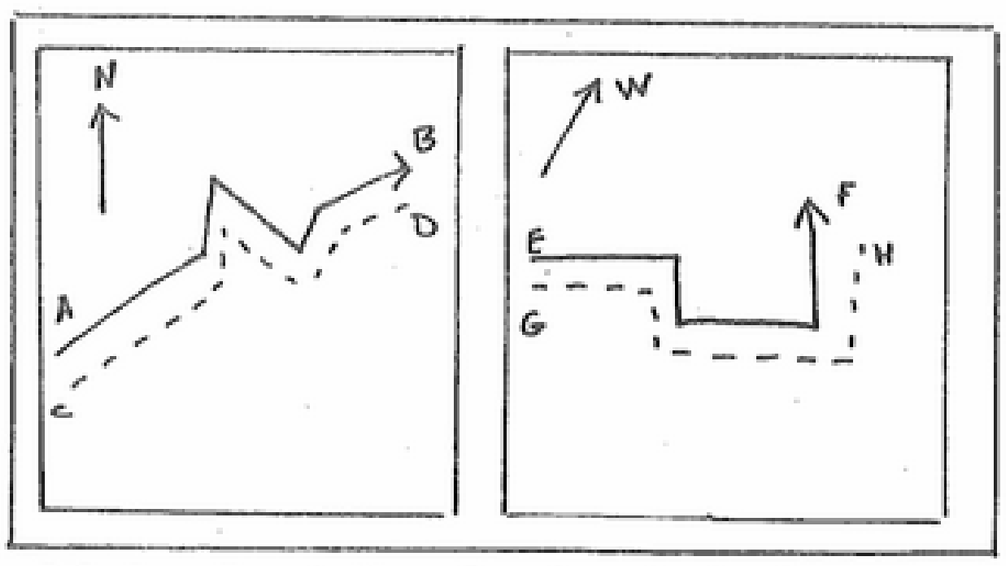


FIG. 1 -- Two studies of vectors in Mary's walks and the lamb's following actions. Note that in both cases the lamb's path (C to D and G to H) parallels Mary's path (A to B and E to F), but with a time lag not shown in the figure. (Lamb path actually lagged Mary path by 30°, where one hour = 360°.)

The school attended by Mary had codified a rule which stated, "Extraneous Animals Will be Identified and Removed," (E=IxR), but clearly given virtually infinite time domain potentiality, all things not only can happen, but will. Therefore, as might be guessed, the lamb followed Mary to school one day. (The inevitability of this can be seen where:

A -- Mary goes to school (M+S)
B -- The lamb follows Mary everywhere $\frac{L}{M} \times \frac{M}{E}$
and C -- School is part of everywhere -- [Sch =(E-X)

So that --

$$[M+S] + \left[\frac{L}{M} \times \frac{M}{E}\right] + [S = (E-X)] = ?$$

Where M= Mary
S= School
L= Lamb
E=Everywhere
X= Something less than everywhere

Simple substitution reduces the formula to

[M+S] + LE + [E-X] == ?

or

MS + LE + [E-X] == ?

or $\sqrt{\frac{1}{MS + LE}} = X$

And, of course, the answer can only put the stupid lamb smack-dab in the middle of the school yard.

Experimenters may wish to verify the data by empirical means. They should be aware that the formula does not work with goats.

The fact that the children laughed is irrelevant. There is far too much horsing around in amateur radio today. We are in danger of running out of professional amateurs. Unless levity is reduced sharply, our bands will be crammed full of people having fun instead of passing traffic, and then where would we be? Think about it!

The author wishes to thank Dick Baldwin, Micheal Salem, Jess Speer, and Blackie, near San Francisco, (listening 14.190 to 14.197) for their technical assistance and inspiration in the preparation of this article. A special thanks should go to Mary's meat market for the lamb chops. Yummy, Mary!

-- WB5TZZ

Central Oklahoma Radio Amateurs

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.

What began as affiliated clubs from the metropolitan Oklahoma City area has branched into a statewide organization, with affiliated clubs in Altus, Woodward and Ponca City. A complete list of our member clubs can be found elsewhere in this issue.

CORA's yearly project has been Ham Holiday, and this year, in conjunction with Ham Holiday, we are proud to host the A.R.R.L. West Gulf Coast Division Convention.

Alongside the planning and preparation for Ham Holiday CORA publishes this newsletter, Collector and Emitter. If you are a member of a CORA affiliated club, a portion of your club dues goes to pay for your subscription to C & E. However, if you are not a member of a CORA affiliated club and wish to subscribe to C & E, check elsewhere in this issue for prices and a mailing address. The C & E let's you know what's happening with other amateurs, combines technical knowledge, and provides for a wider span of interests, plus an interchange of ideas.

We extend a hearty invitation to each of you to attend the A.R.R.L. West Gulf Coast Division Convention and Ham Holiday. There will be something for everyone! See you there!

-73- Kay, WD5DYJ, CORA Secretary

LEONARD HOLLAR, WA5FSN
SECTION COMMUNICATIONS MANAGER

I am going to forego my usual Collector and Emitter column, and instead, use the space to:

Extend my personal invitation to all of our Friends south of the Red River as well as all of our Friends north of the Red River to attend the West Gulf Convention and Ham Holiday '81 that is being advertised in this issue of Collector and Emitter.

This year we will be in the Myriad Convention Center with larger and better facilities than ever before. We feel that the "Downtown" location will be to your advantage with the easy access by Interstate Hi-ways and the close proximity to the Downtown Shopping area and hotels, many of which are within walking distance. Some of these are connected to the Myriad by an underground passage-way for all weather use.

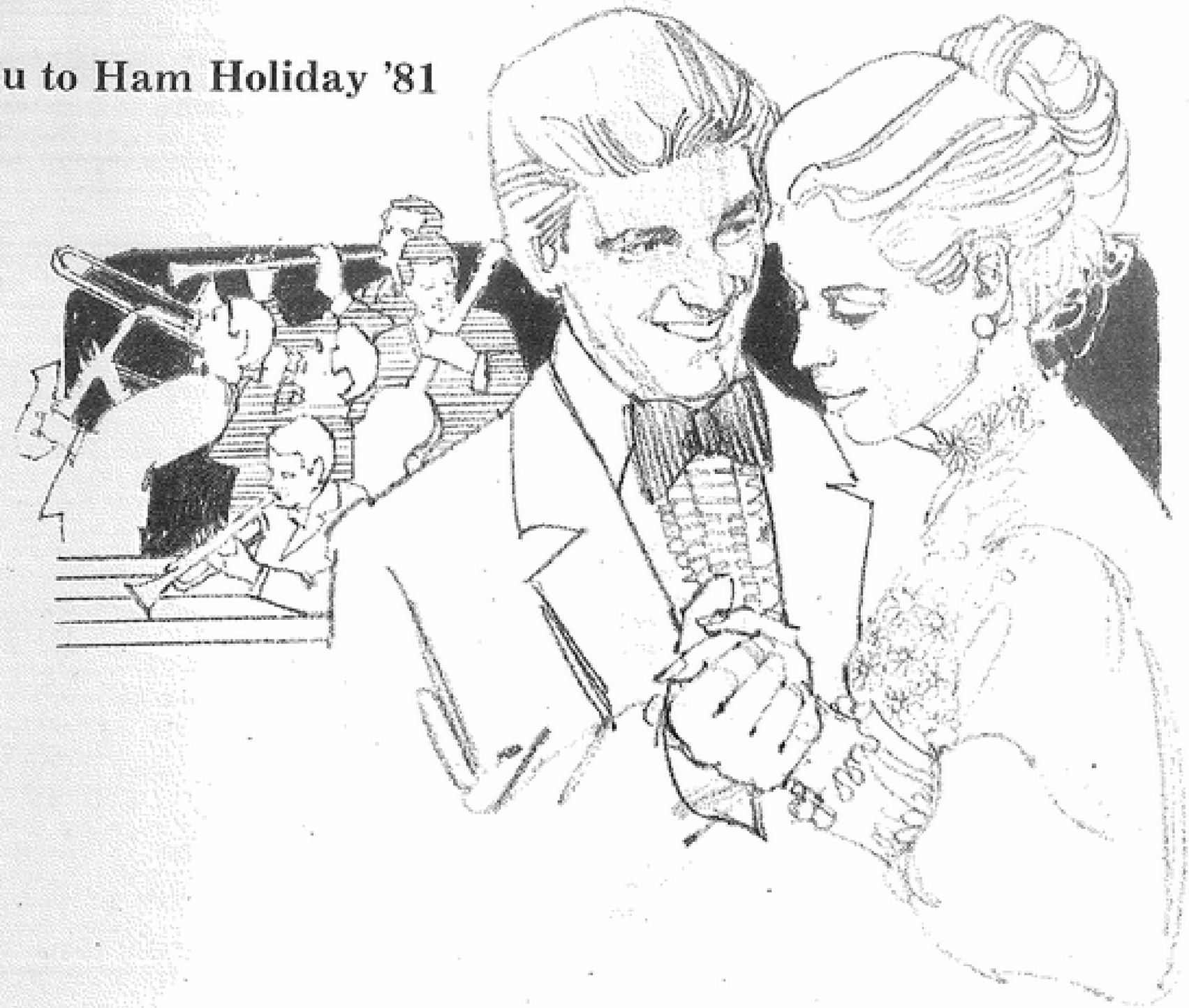
All of our committies have been working very hard to provide the best possible programs for both the Ladies and the Gentlemen as well as a larger "Flea Market". Truly an "all out" effort to provide something for everyone.

Looking forward to seeing you July 24th through 26th in Oklahoma City.

Leonard Hollar, WA5FSN
SCM, Oklahoma

The Peppermill

Welcomes you to Ham Holiday '81



At

The Peppermill

you can relax over your favorite drink.

And try some new steps on our dance floor.

You'll find your kind of dancing

and your kind of people.

Present this ad for a complimentary drink

3600 N.W. 58th Street

Oklahoma City, Oklahoma 73442

PARKING - There are 1500 inside parking places under the Myriad and if there is no other major event there while HAM HOLIDAY? WEST GULF CONVENTION is going on they will all be free. If we are If we are unlucky enough to have a competing event (None as of this writing) and they have to hire attendants the cost will be $1 per day. We knocked a dollar off of the reg istration fee to help you there, so if you get to park free you will have an extra dollar to buy a chance on the ICOM 2-A/T raffle. Several pay parking lots surround the Myriad. Parking meters need to be fed Friday and Saturday until 6:00pm but not on Sunday.

Actual show and demonstration of a Satellite reciever in operation. This program will be given by Dr. John Fagan who is the Asst. Professor of Electrical Engineering at Oklahoma University. He will be showing his system so will be able to answer our questions with first hand knowledge on his Hints and Kinks of constructing one of our own.

FACILITY - We moved to the MYRIAD convention center in downtown Oklahoma City.
1. More room.
2. Cost. It will cost about 1500.00 less than last years location, that's $1500.00 more in prizes on Sunday's drawing on top of the whoppers we had before because HAM HOLIDAY is strictly a non-profit operation. After the actual expenses - all volunteer help - are counted up we spend all the money paid in by registrants for prizes. Lat year over $5000 was given away - add the $1500 to that or more and with the expected increase in registrations the prizes should be fantastic. Every prize will have a value of at least $10.00. The Grand prize is a Kenwood TS-830S and the pre-registration prize will be an ICOM 260. Other major prizes will be bought from exhibitors on Saturday night when we see how much we have left. It will be yours.

Q R M Contest or Intermod City

WHEN	Friday night July 24,1981
FREQUENCY:	any legal frequency between 50.0 MhZ and visible light
MODE:	any legal mode for the freq. used
NEEDED EQUIP:	Battery powered radio or light

Your equipment must actually emit such energy when you are talking. If your battery goes dead you are finished.
All operation during the contest will be from inside the room. Your complete station? will be in the room, including antenna and battery.
Contest will last one hour only

P R I Z E S P R I Z E S P R I Z E S

HAM HOLIDAY DANCE

Country & Western music from Oklahoma City, the "Cowboy Dancin' Capitol of the West."

Wear your boots and jeans for a fun "urban cowboy" evening at Ham Holiday.

Lots of today's most popular music, PLUS dance lessons will be given by George, AD1S and Vicki, KA5KWA. You will have a chance to learn some of the new "cowboy" dance steps.

ARRL FORUM

The ARRL Forum has become a popular part of all Convention Programs because it gives the membership and interested amateurs an opportunity to get together with your League officials and discuss activities of the League.

We are fortunate, this year that Mr. Harry Dannals,W2HD, President of ARRL will be the principal speaker and moderator. He will be ably assisted by Mr. Ray Wangler,W5EDZ, West Gulf Director and Mr. Thomas Comstock, N5TC, Vice Director, West Gulf Division. as well as other League Officials present.

The Amateur Television Club, better known as the ATV club will demonstrate fast scan television operation. Bob Edlun W5 DS and Bob Demand K5SKA will stage the demonstration They will have 2 systems set up and actually transmitting between them. W5DS will use a computer to store information to be rebroadcast to K5SKA's station.

The ATV club meets the second Thrusday at 7:30 in the Communications Building on the Central State University campus in Edmond.

The clubs repeater and antenna are also located on the CSU campus. Their transmit antenna is on the 170 foot level while the recieve antenna is at 270 foot level. Presently they running just 15 watts of power, but plans are in the making to increase this to 100 watts real soon. Input frequency to their repeater is 437.25 and output is 425.25 Visitors are always welcome so come to Ham Holiday '81 and bring your mobile ATV station with you. The club President is John Lewis WB5YJP.

FOR SALE: 1980 HONDA CX-500. like brand new. 1700 miles by an adult. My friend can't ride any more and he needs the money. $2200 will take it. Call Joe, WA5ZNF, (405) 737-1044. Great touring bike. Great street bike.

REGISTRATION INFORMATION

WEST GULF DIVISION CONVENTION

HAM HOLIDAY 81

JULY 24-26, 1981

MYRIAD CONVENTION CENTER

OKLAHOMA CITY

TECH PROGRAMS
ARRL FORUM
QCWA BREAKFAST

SATURDAY NIGHT BANQUET
HARRY J. DANNALS, W2HD, SPEAKER
PRESIDENT, ARRL

DEALERS DISPLAYS
INDOOR FLEA MARKET
LADIES PROGRAMS
EYE BALL QSO'S

WOUFF HONG

PRIZE DRAWING SUNDAY NOON
GRAND PRIZE: KENWOOD TS-830S
PRE-REGISTRATION PRIZE: ICOM 260
SPECIAL PRIZE: IC 2 AT

SHERATON-CENTURY HOTEL NEXT DOOR WITH COVERED PARKING
AND WALKWAY TO MYRIAD.

REGISTRATION REQUIRED FOR ADMISSION TO FLEA MARKET
AND ALL FUNCTIONS.
CHILDREN UNDER 12 MUST BE ACCOMPANIED BY A PARENT.

Tri-city Amateur Radio Club

Mewoka---Holdenville---Seminole

HAM HOLIDAYS
Through The Eyes Of A New Amateur

Friday, July 25, this new amateur (a little over a year) hangs a 2 meter rig in the XYL's car and gets an early start to Oklahoma City and Ham Holiday. I visited with WBØPGD, KB5XI, W5HGH, WB5DGT, and WA5OUV in route. I arrived at Oklahoma City and by some miracle got in the right lane on Classen Circle, went down 50th to Lincoln Boulevard and then to Lincoln Plaza Inn! I stowed the luggage, my XYL, Judy and the harmonics Tammy and Levi in our room. HAM HOLIDAY HERE I COME! Next I go to the registration desk and check in. Then I start meeting many amateurs. I have the evening meal with my XYL and the kids, also KB5XI, Gordon and his XYL, Joy. Then more visiting.

And what's this? An intermod party? Ok lets give it a try. Lets see, put the Talkie on low power. (Don't want to interfere). Got call and name, what was the birth month! Ok got it. Wow too much QRM on 52, will try a repeater. That didn't work. Back to 52. Oh my, only 5 contacts and half hour into the contest. K2GKK yelled, "Hey what frequency are you on?" He could not hear me, so he came down and grabbed my borrowed talkie, flipped the switch to high power and back to simplex. Then made some comment about learning how to use it! Wise Guy! Hey people are answering me! Jac why didn't you come by a half hour sooner! It was all great fun and I hope to do it again. More visiting then off to bed because the swap tables open at 8AM.

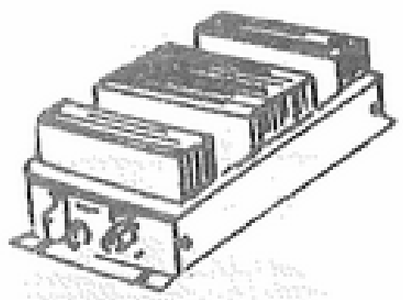
I was awake at 8 sharp, Oh No! The tables are open now! I sneak out of the room since my family is still asleep. It's 8:15 AM, EUREKA! SWAPFEST 80! Its enough to shock any amature amateur, so many goodies! Just what I need a HF vertical antenna. Better check around for prices and see three more, all higher priced. I rushed back, oh no, its gone. I will get the next higher: gone, gone, gone. That same thing happened several times with other items. Oh well, I am learning what a bargain is. I gathered up several goodies and my XYL catches me stashing same in our room. She has a worried look on her face. Back to swap tables! W5HGH, Lee mentions its about time for lunch. Lunch! I just got here! ——→

FOR SALE: KSR "BETA" MODEL PRINTER (SYNER DATA CORP.) 300 BAUD, RS-232 INTERFACE, SERIAL I/O. MAKE OFFER. BOB GRAHAM, WB5ISV (405) 677-8685. 3317 SE 24, DEL CITY OK 73115

As we left the restaurant we met Gordon KB5-XI and he "suggested" we had been missing meetings all morning. Meetings! Oh my word! They do have meetings at Hamfests. Ok we rush to repeater society meeting. We new amateurs appreciate the efforts these gentlemen have put into this organization, great job fellows! I attended ARRL forum. I really enjoyed comments from W5UDZ, Ray Brengler, WA3NIC Dale Clift, and WA5PSW Leonard Hollar. These gentlemen are energetic, dedicated, and receptive to input from amateurs. I should attend more meetings, but for a new ham with limited finances the swap fest has a magnetic attraction. I have been looking at call tags on every ham who looks over 40 for KA5ABO, Earl Snyder. Earl was my 5th contact as a novice then later my first double contact. Earl manufactures a very nice keyer which I wanted to inspect and possibly purchase. WA2ZBL, Jes hollered, "Hey Gerald, here's Earl!" Boy this was a highlight of my day! Earl is 80 years old and a fine gentleman and amateur. Wes and I are both now proud owners of Snyder KP2 key paddles. Back to the tables. Hmm, there's a good buy on a business band rig. I'll wait, maybe it will be cheaper at closing time. I came back 30 minutes till-------- Oh No! Its Gone! I did it again. All part of an educational

HEATHKIT
VL-2280 & VL-1180
VHF ALL-MODE AMPLIFIERS

SPECIFICATIONS



VL-1180 Amplifer

Frequency Range
144 to 148 MHz (aligned at 146 MHz).

Power Output
75 watts nominal (@13.6 volts dc) with 10 watts drive.

Power Input
1 to 15 watts.

Input/Output Impedance
50 ohms.

Input VSWR
2:1 maximum.

Maximum Stable VSWR
2:1, referenced to 50 ohms.

Insertion Loss
0.6 decibels current.

Conducted Spurious and Harmonics
-60 decibels current or better.

Third Order Distortion
-24 dB referenced to one of two tones.

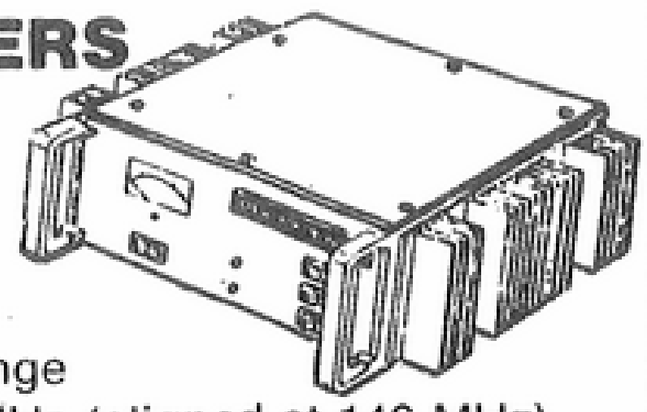
Mode of Operation
SSB, FM, RTTY and CW.

Operating Temperature Range
-4° F to +104° F)-20° C to +40° C).

Power Requirements
120 volts ac, 50/60 Hz at 7 amperes max.
240 volts ac, 50/60 Hz at 3½ amperes maximum.

Dimensions (Overall)
5½" high x 12¼" deep x 13½" wide (14.0 x 31.1 x 34.3 cm).

Net Weight
27 lbs. (12.3 kg).



VL-2280 Amplifier

Frequency Range
144 to 148 MHz (aligned at 146 MHz).

Power Output
75 watts nominal (@13.6 volts dc) with 10 watts drive.

Power Input
1 to 15 watts.

Input/Output Impedance
50 ohms.

Input VSWR
2:1 maximum.

Maximum Stable VSWR
2:1, referenced to 50 ohms.

Insertion Loss
0.6 decibels current.

Conducted Spurious and Harmonics
-60 decibels current or better.

Third Order Distortion
-24 dB referenced to one of two tones or -30 dB referenced to CW power.

Supply Voltage Range
11.5 to 15 volts dc negative ground.

Mode of Operation
SSB, FM, RTTY and CW.

Current Drain (@13.6 volts dc and 75 watts output power)
11 amperes maximum.

Standby Current
3 milliamperes.

Operating Temperature Range
-30° to +140° F (-34° to +60° C).

Dimensions (Overall)
2¾" high x 10¾" deep x 4¾ wide (7.0 x 27.3 x 12.1 cm).

Net Weight
3¼ lbs. (1.5 kg).

2727 Northwest Expressway
Oklahoma City, Oklahoma 73112
405/848-7993

Store Hours

Sunday, Monday	Closed
Tuesday, Wednesday, Friday	9:30 a.m. - 6:00 p.m.
Thursday	9:30 a.m. - 9:00 p.m.
Saturday	9:30 - 5:00 p.m.

HAM HAPPENINGS REFER TO CLUB SECTION FOR SPECIFICS

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
JULY			1	2	ACARC Meets 3	
WHEATSTRAW Meets 5	EDMOND CLUB TRI_CITY Meet 6	NORI GREAT PLAINS Meet 7	8	ALTUS Meets 9	10	11
12	CIOCTAU Meets 13	76'ERS SHAWNEE OC Meet 14	15	KAY COUNTY Meets 16	VHF Meets 17	SCARS Meets 18
EARS Meets 19	A 20	AUTOPATCH Meets 21	22	EDIT C&E Forms close at 8:00 pm 23	HAM HOLIDAY OKLAHOMA & West Gulf Convention	HAM HOLIDAY OKLAHOMA & West Gulf Convention
HAM HOLIDAY OKLAHOMA & West Gulf Convention	27	SHAWNEE Meets No CORA meet 28	29	30	31	