



HAM HUM

Published by

AK-SAR-BEN RADIO CLUB, INC. - Omaha, Nebr. 68101
Post Office Box 291 - Downtown Station



Vol. XIX
No. 8

August 1969

NEXT MEETING

WHEN: Friday, August 8, 1969

TIME: 8:00 P.M.

WHERE: Red Cross Chapter House - Club Room
39th and Dewey

WHAT: Bud Henley, WAØPZV, Sales Manager for Galaxy Electronics, will talk about the development of the Galaxy FM210 and will give the why's and wherefore's.

Discussion of Field Day and presentation of plaque to winner for most outstanding effort during 1969 Field Day competition.

Eyeball QSOs and refreshments.

HAM HUM is the official organ of the Ak-Sar-Ben Radio Club, Inc., of Omaha, Nebraska, mailed monthly to all members and to others upon request.



Next copy deadline: August 29th

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CENTRAL NEBRASKA RADIO CLUB PICNIC

The Central Nebraska Radio Club held another successful annual picnic July 26-27 at Victoria Springs State Park.

The XYL and I arrived at the park Friday afternoon and were the first of 103 amateurs that registered for the picnic. Total attendance must have been about 350 and everyone seemed to have a big time.

Two of their club members came around visiting Friday night and there was lots of visiting all day Saturday. A very nice weiner roast was held Saturday night, followed by a community sing led by Bob, WAØ-DHU, and a movie on the Nebraska Sandhills Cattle Association.

Sunday morning church services were held in the park by Larry, KØJXN, and then the big steak fry at noon. Following this was the announcement that William J. Bamer, WØDI, of Friend, Nebraska, had been selected as the 1969 member to the Nebraska Amateur Radio Hall of

Fame, and a plaque was presented to him. (See picture on page 21.)

After that, all that was left was the drive home, which was kind of unpleasant after a large meal.

73's

Royce E. Johnson, WAØKIL

P.S. The Central Nebraska Radio Club has 18 members. What could a club our size do if we tried?

Tekamah, Nebr.
June 21, 1969

Dear Sirs:

Enclosed is check for \$1.50 for which please send me Ham Hum another year. I enjoy this little publication.

Yours truly,
E. A. Stenberg, KØORM

FIELD DAY 1969

By Bob Lockwood, WAØDHU

Hurrah for the Ak-Sar-Ben Radio Club! This sums it up in a few words. The Ak-Sar-Ben Radio Club made one of the best showings it has made in many a year. The success we now enjoy is due strictly to the enthusiastic effort of many people dedicated to

one cause – to keep four rigs going continuously for the Field Day period. We did it and our logs showed the results!

Following is a chart showing this year's record as compared to last year:

<u>Band</u>	<u>No. QSOs</u>	<u>Multiplier</u>	<u>Points</u>	<u>Power</u>
80 CW	32	X 6	192	100W
1968	16			
75 PH	164	X 6	984	190W
1968	147			
40 CW	0	X 6	0	0
1968	48			
40 PH	460	X 6	2760	0
1968	366			
20 CW	7	X 6	42	190W
1968	106			
20 PH	514	X 6	3084	190W
1968	188			
15 CW	6	X 6	36	190W
1968	51			
15 PH	183	X 6	1098	190W
1968	113			
6 PH	95	X 9	855	40W
1968	67			
2 PH	9	X 9	81	30W
1968	10			

Report Totals

	<u>1969</u>	<u>1968</u>
No. QSOs	1470	1114
Points	9132	6915
100% Emergency power	800	800
Publicity	200	200
Message to SCM	200	200
Messages Handled	40	30
Claimed total score	10,372	8,145

Our Field Day exercise this year was conducted on "Norval's Plantation," or is it "Connie's Plantation" — at any rate a spot of high ground overlooking the Platte River. This site proved to be about the best we have had the pleasure of using and from now on can really be known as "Signal Hill," or would you accept "Nor-ConSig Ranch"? On VHF, stations from Kansas, Missouri, Iowa and other long ground wave contacts came in loud and clear. 6 meters opened up real good for short skip for several hours and many of the contacts were because of this opening. Harold McClenahan, WAØDGA, as well as other techs, had a ball with this opening. We also got quite a few 2 meter contacts, thanks to WØYCP.

The site also proved to be favorable to HF with 20 and 40 meters providing new Club records. 20 meters, ramrodded by Chuck Michel, KØQVL, led the pack. We couldn't lose. It seemed as if they were waiting in line to work us. Sunday was also a big day for 20 meters with Tom Moeller, WAØEXQ, getting so many contacts that even two loggers couldn't keep up with him.

Bryce Nelson, WNØTSO, the big gun on 40 meters, set new Club records also. Bryce, who had his first Field Day experience this year, performed admirably. He put in a good many hours operating and had a lot of contacts.

15 and 75 were also very productive. 15 was hot Saturday afternoon and evening. We had a pipeline to Germany with many DL contacts confirmed. 75 was rough with QRN from thunderstorm activity but we still did real well. Connie and

Norval Bowen, WAØMYF and WAØNPF, had a ball on 15 meters Saturday evening.

80 meters CW which was located in the VHF shack had QRN also, but Jim Anderson, KØDNE, made many contacts on this band Saturday night.

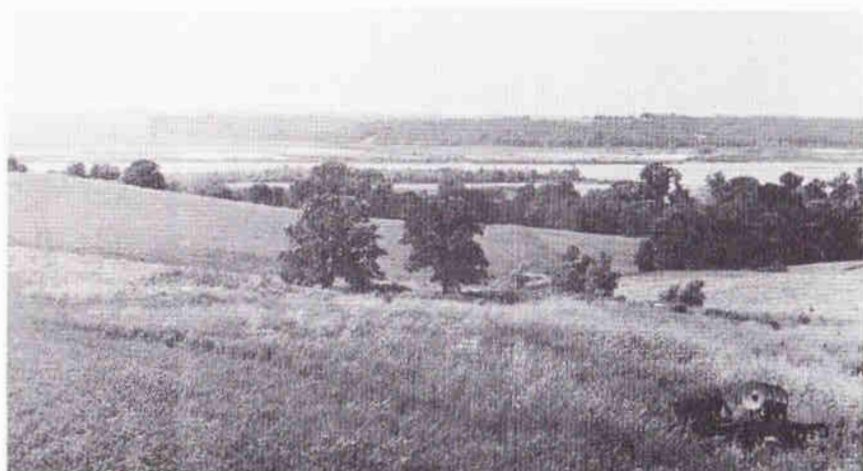
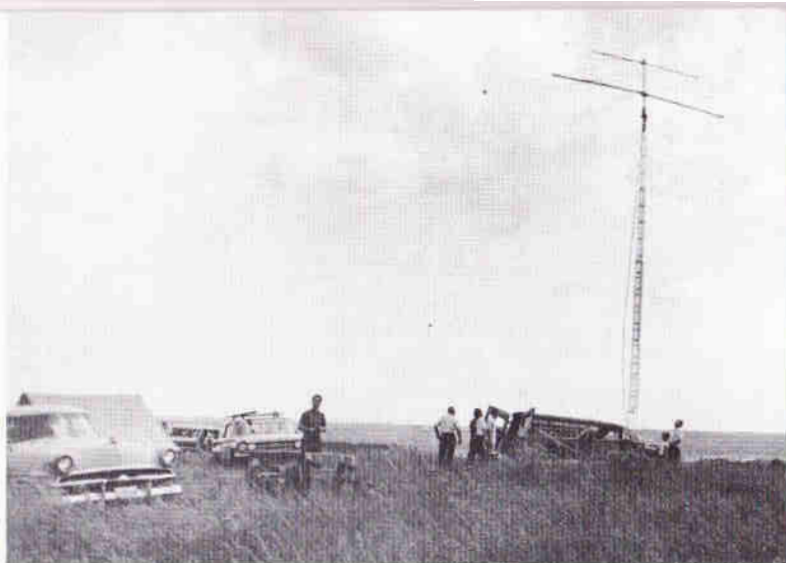
Sharlene, XYL of Jim, KØDNE, logged most of the night in the 75 meter shack with WAØDHU, Bob, operating. Later KØQVL, Chuck, relieved Bob, but Sharlene kept right on logging.

The chefs were Harold McClenahan, WAØDGA, and his XYL Eva. They did an excellent job in the cook shack. Keeping a bunch of hams supplied with food is a big job. Hams like to eat. Many people brought covered dishes, which made the job a lot easier for the cook shack crew. This covered dish idea is a good one and I am sure it will get even more support in the future. Our hats go off to the cook shack crew!

We had an excellent "set-up crew" and "take-down crew." Many people who couldn't stay to operate came for set-up and take-down. These are big jobs in the Field Day exercise and are so necessary. All the credit for Field Day should go to these crews. Without them we have only a bare hilltop. The thanks of our Club go to each who participated.

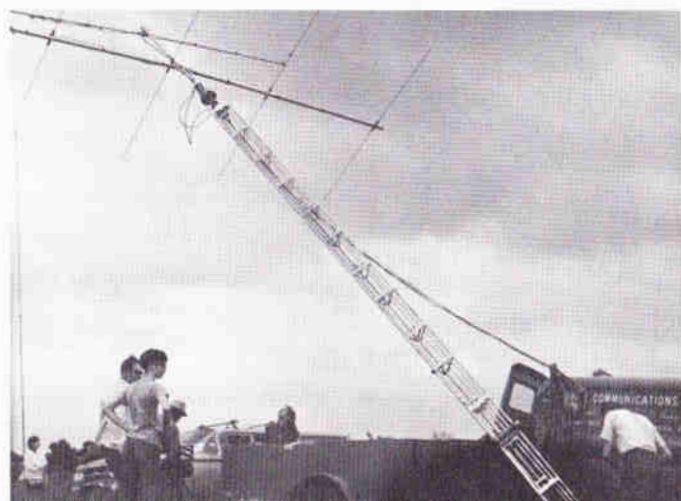
We also had a good response in regard to shelters with a truck for 40 meters donated for use by Dave Bowder, WAØUKE; a truck for VHF donated for use by Jim Droegge, WØYCP; tents donated for use by Boys Town; 75 and 15 meter shelter donated for use by Erv Heinz, WAØEEM; also a tent donated for use by Al McMillan, WØJJK, of WRL.

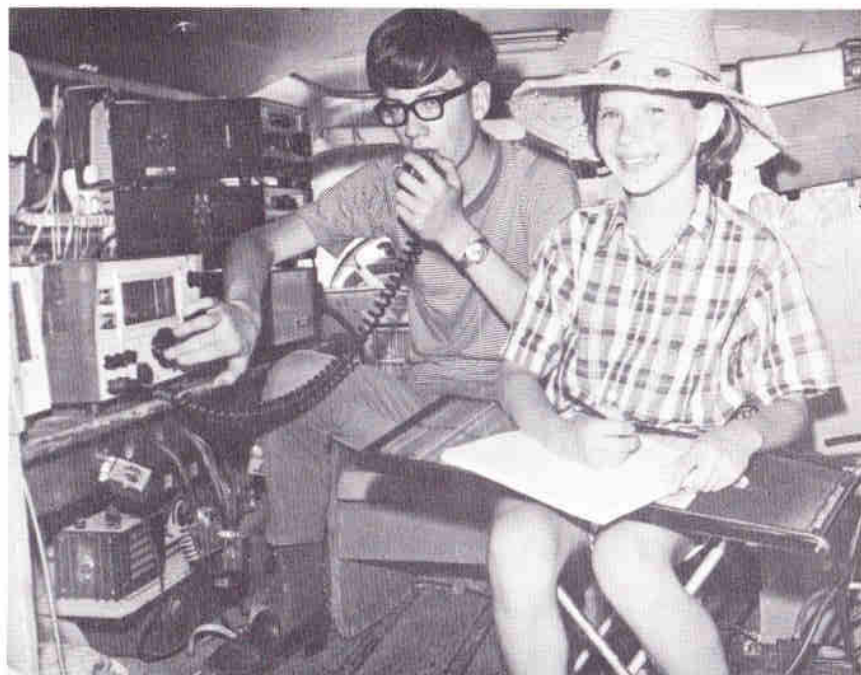
Set-up Crew



View of the Platte River from Signal Hill

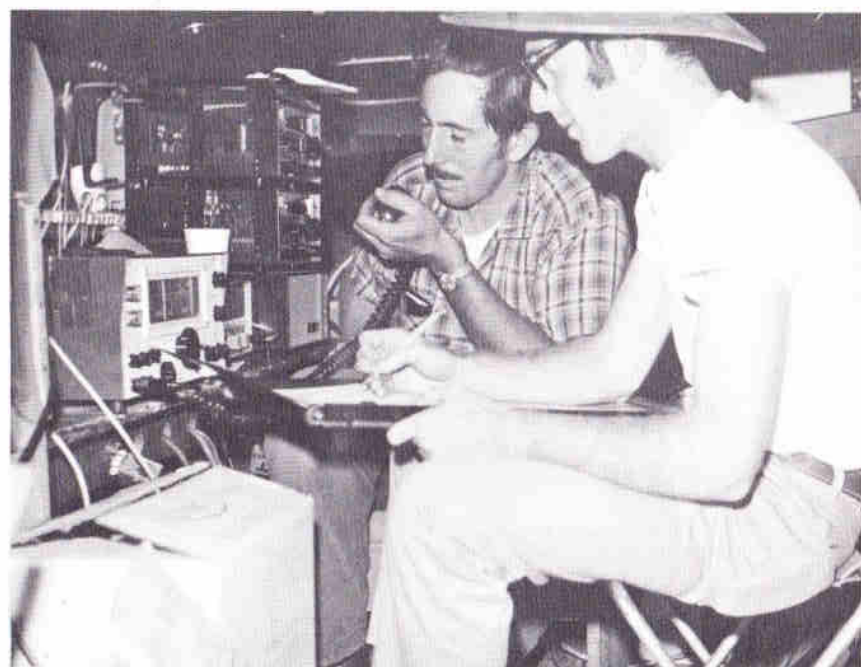
6 meters going up





6 meters, Bob Serlet and Donna Heinz

6 meters, Harold McClenahan and Harry Silver



The rigs used on HF were Galaxy GT550s which we ran at reduced power. These rigs were donated for use by Galaxy Electronics. These rigs did an exceptional job for us and members of the Ak-Sar-Ben Radio Club, Inc. Express appreciation to Galaxy Electronics for the use of them.

Also, a Galaxy V was donated for use by Bryce Nelson, WAØTSS; 2 meter gear was donated for use by Jim Droege, WØYCP; a Clegg Venus and R4A, T4X was donated for use by Bob, WAØDHU.

Generators were donated for use by Fred Fischer, WØEGP, Ed Donze, WØYEV, Bob Lockwood, WAØDHU, and a small one by Jim Droege, WØYCP. The Club's 3kw generator was also used. We weren't hurting for generators this year!

Many other miscellaneous items, too numerous to list here, were donated for use, such as an antenna rotor donated for use by Walter Bowman, WAØHKV.

Excellent publicity coverage was provided by the South Omaha Sun and WOW-TV. When one observes the huge number of clubs and individual hams participating in this simulated emergency exercise, one suddenly realizes what this could mean to our country in the event of an actual emergency. Here is a communications network which can be relied upon. It is to this end the Club appreciates publicity – to let the general public know that in the event of an emergency they can rely on amateur radio operators to apply their communications needs.

Ballots were cast to determine who worked the hardest on the Field Day site. A plaque will be awarded to the winner at our annual picnic in September.

Yes, the Ak-Sar-Ben Radio Club, Inc. really worked as a team in Field Day 1969 to set new records for the Club. We believe we are beginning to realize that Field Day means more than just keeping the rigs going or practicing for an emergency – it means a time of fellowship, a family affair. People can make this a campout where families are brought together – kids having a ball, XYLs getting together, and the OMs operating and enjoying fellowship with others. People working together in a project and having a ball doing it. This is Field Day.

The Ak-Sar-Ben Radio Club was again the winner in the 2-club Field Day competition with the Bellevue Amateur Radio Club, making it two in a row for WØEQU. One more win and we will hold the trophy for all time!

A brief rundown on the terms of the competition is in order. Best three out of five years gets permanent possession of the trophy. The winner is the one who scores the most points in the Club's two highest scoring rigs. This puts the small club on an equal with the large club as the small club can concentrate its efforts on two rigs. Bellevue had trouble this year, primarily with planning and topped off with Murphy's law. Last year we beat them by only a slim margin. The Bellevue Club is capable of giving Ak-Sar-Ben a run for it. Don't underestimate WØWYV. They will under us under if we do.

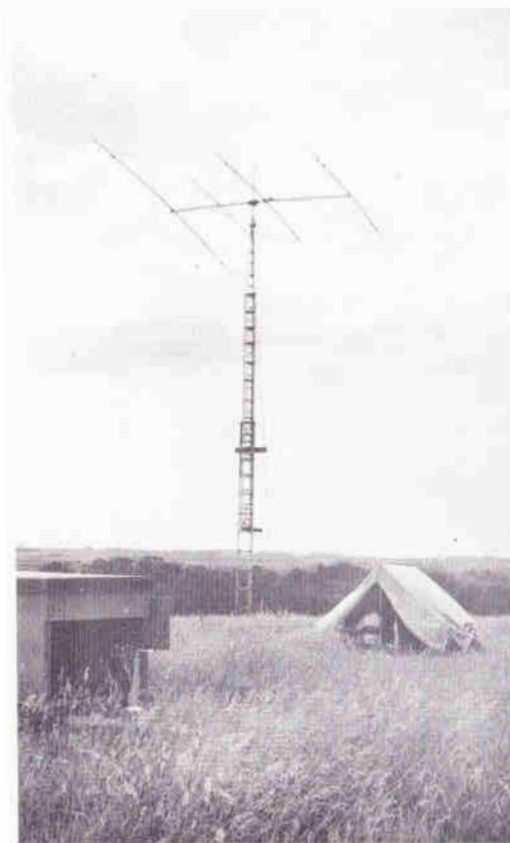
Honorable mention should be given to the young people who came to the site and who are either already novices or going for their novice license. Many of them attended our code and theory classes.



The Bowens
on 15 meters

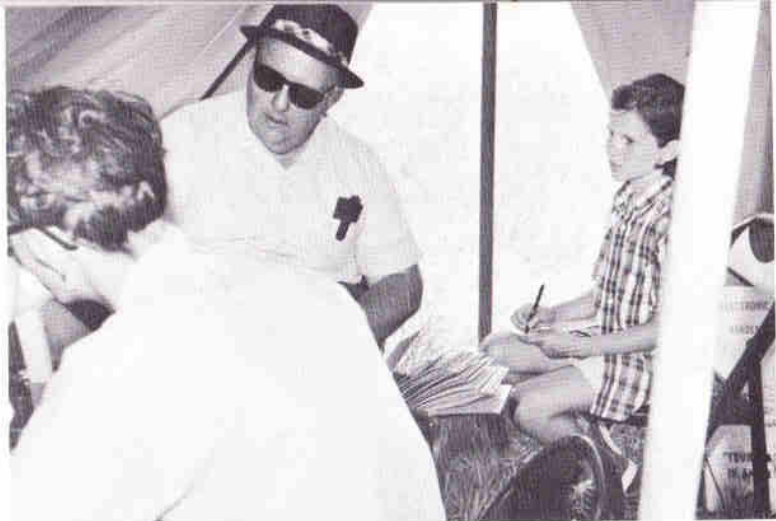
20 meter beam

20 meters ◊



20 meters, Tom Moeller



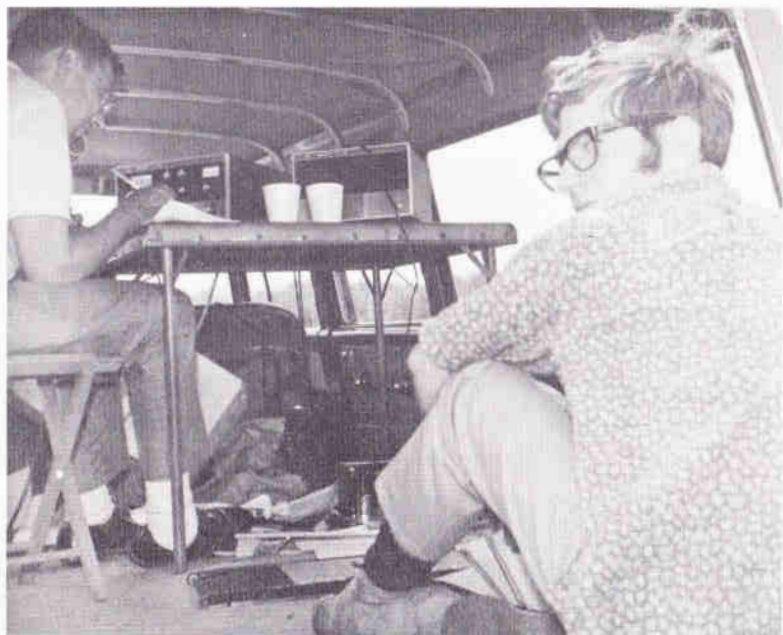


Tom Moeller, Wayne Ablott and Donna Heinz



40 meters, Dave Gautier and Bryce Nelson



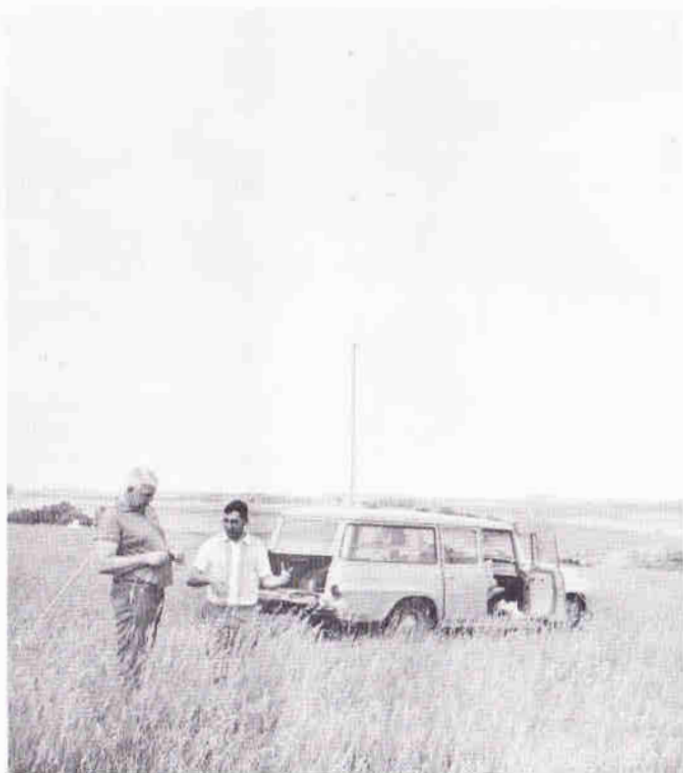


75 meters, Bob Lockwood and Harry Silver

75 meters

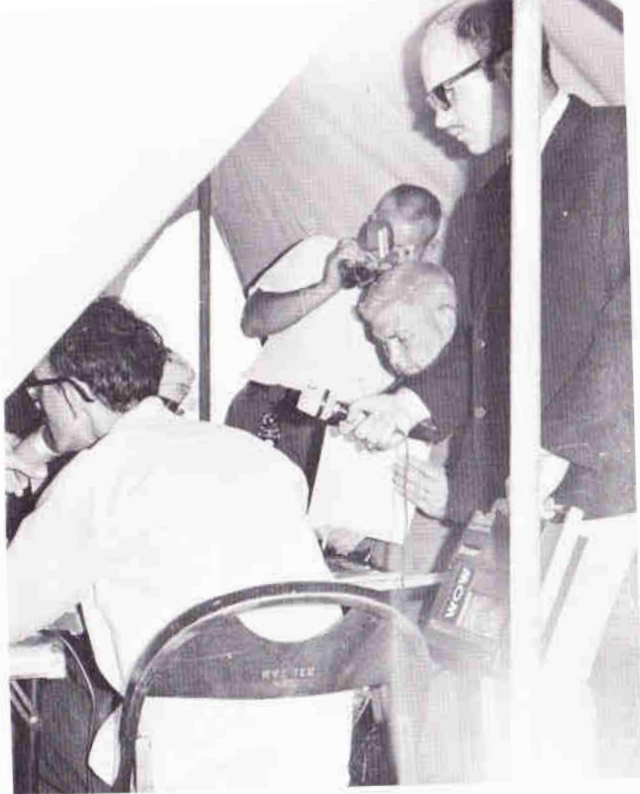


Norval Bowen and
Bob Lockwood



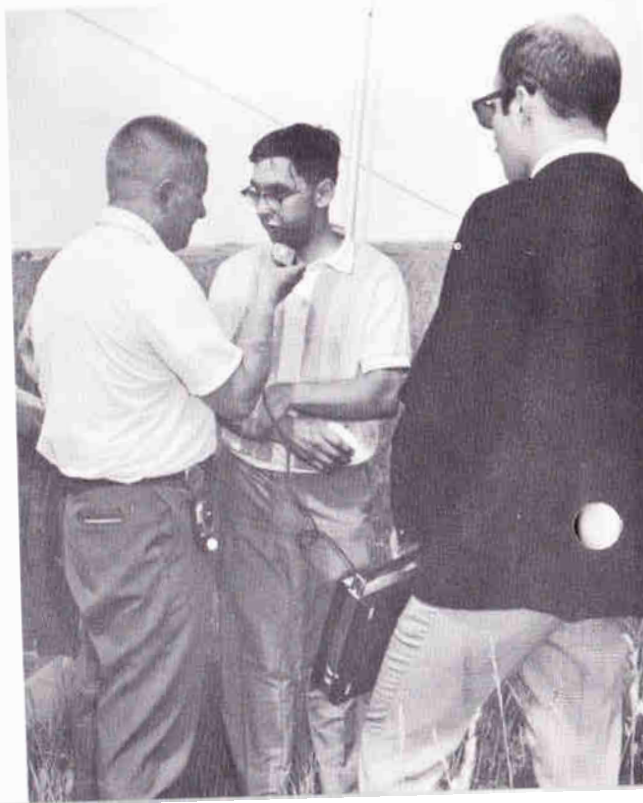
Bryce Nelson,
Norval Bowen,
"haystack" and
Patty McClenahan





WOW-TV at work

WAØDHU being
interviewed
by WOW-TV



The pictures were supplied by Erv Heinz, WAØEEM. We can't determine the names of all persons in the pictures but the list indicates those we do know. There were many new faces on the site this year.

Respectfully submitted,
Robert C. Lockwood,
WAØDHU
Field Day Chairman 1969

**OFFICIAL BULLETIN NR 227
FROM ARRL HEADQUAR-
TERS NEWINGTON CONN
JUNE 26 1969 TO ALL RADIO
AMATEURS BT**

At the conclusion of the 1969 ARRL Field Day, clubs and individuals are urged to report promptly to ARRL. Full information on summarizing results appears on page 60 of May QST. Logs and summary sheets must be postmarked no later than July 27 for QST listing. Photos of your setups identified with call, club name and transmitter class, as well as comments on your activity, are welcomed. Appropriate publicity material and message copies must be attached to your log for bonus credit. Please remember to mail by July 27. Send your entry to ARRL, 225 Main Street, Newington, Connecticut 06111
AR

FOR SALE

Galaxy V Mark 3 - Very clean -
used 6 months - \$300.00.

G. E. Scott, KØWFG
2015 Beverly Blvd.
North Platte, Nebr. 69101

**COLLEGE BOUND
MUST SELL**

Galaxy V and Power Supply
Home Brew Keyer and Monitor
Vibroplex
TA-33 Classic Beam
Ham M Rotor
Free telephone pole, 40 feet above
ground.

Mark W. Kellogg, WAØMSX
2526 Brookside Avenue, Omaha
Phone: 391-5879

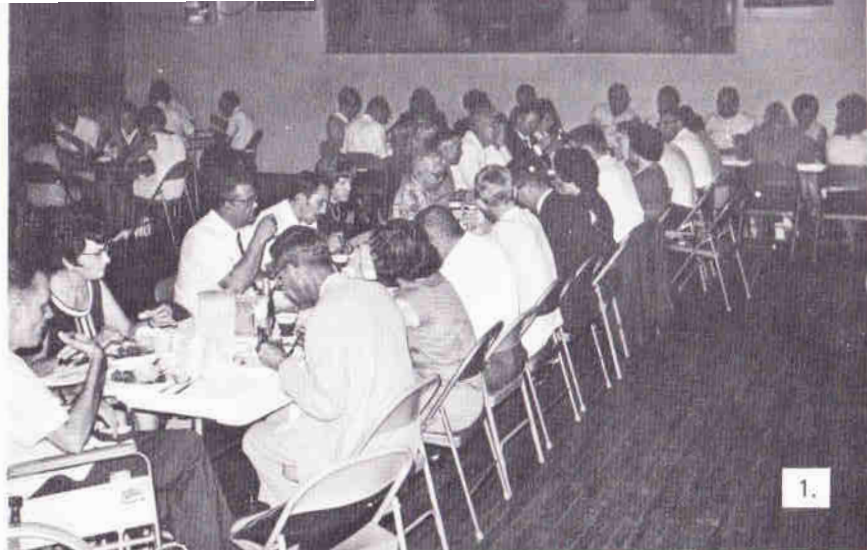
At our last Auction we all were grateful for a donation of an antenna tower by a former Omaha ham, Ernest Erickson, WØLXN, who now resides in Pomona, California. Since the donation enriched our coffers, I think a little poem would be fitt'n for Ham Hum.

Here's the poem -

Galvanized steel, bolts and nuts
Upright angles, cross bar struts
Three sections, plus one-half
The coffers jingle, an epitaph
"As the roll was called,
at the clock's last ticks
The final count was thirty
and six"

Mr. Erickson's address in Pomona, California, 91767, is 1492 Sebrina Street. He is now employed by the U. S. Army Corps of Engineers in Los Angeles, Calif.

Lawrence F. Caccomo, WØNMN



JULY DINNER MEETING

The Ak-Sar-Ben Radio Club, Inc. held its July dinner meeting at the Richfield Cafe, Richfield, Nebraska. It was a joint meeting with the Bellevue Amateur Radio Club, the prime purpose being the awarding of the traveling Field Day trophy to the winning club.

As you can see in picture 1, we had a capacity crowd of hungry hams

(pictures 2 and 3) and tasty food which we all enjoyed. And to put the icing on the cake for dessert, Bob Lockwood, WAØDHU, Field Day Chairman, was presented the coveted Field Day trophy for the Ak-Sar-Ben Radio Club, Inc. by Vern Felthouser, KØZPR, President of the Bellevue Amateur Radio Club (picture 4).





**OFFICIAL BULLETIN NR 228
FROM ARRL HEADQUAR-
TERS NEWINGTON CONN
JULY 3 1969 TO ALL RADIO
AMATEURS BT**

Individuals and clubs alike will be interested in obtaining a copy of the ARRL Safety Code. Designed to be posted, this operating aid furnishes useful safety keyed tips for operating as well as for equipment design and construction. The reverse side of the sheet describes an ideal club safety program. An addressed stamped envelope will help to speed your copy which is available without charge from ARRL, 225 Main Street, Newington, Connecticut 06111 AR

ARRL OBS: Please note that there was no Official Bulletin Number 226.

Hi Royal, KØLYO:

I am happy to hear of your progress — found out thru "Ham Hum" which your fine club sends me each month. It's the finest Club magazine anywhere.

73,

Sumner H. Foster, WØGQ

FOR SALE

NCX-3

A.C. Power Supply
Can get D.C. Supply
Best offer.

Jim Woodford, WAØVJD
1012 Cedar Street
Tipton, Iowa 52772

MARS NEWS — AIR FORCE

A District One meeting was held Sunday, June 8th, at the General Motors Training Center.

The meeting started as Net Manager Bob Andrus, AFAØLUG, discussed the increased effectiveness of the new VHF 3L4Ø net which was reorganized a month ago. Traffic from Transcon-One and Area 3 nets may now easily be dispersed and completed through the new net which operates all nights of the week except Friday and Saturday. (On Friday nights the neighboring Iowa Net, 3L26, may handle any traffic for this area.) Bob reported that the most active net was the Sunday night net with Harold McClenahan, AFBØDGA, at the control spot.

Also discussed was the new two-meter FM Repeater at Beaver Crossing. Interest is mounting as our District One Manager Royal Enders, AFAØLYO, informed the group that arrangements are moving forward in securing FM transceivers to use in conjunction with the Repeater. This is a new and exciting phase of the MARS VHF program and hopefully it will offer Statewide communications to move traffic more effectively.

The 8th annual Midwest Council canoe race was held June 7th with the Ak-Sar-Ben Radio Club furnishing the communications, which this year was two meter FM. MARS members participating in the event were Dick Eilers, AFØYZV, Fred Fischer, AFBØEGP, Royce Johnson, AFBØK, John Snyder, AFØWRT, and Harold McClenahan, AFBØDGA.

The Wednesday night CW net is gaining popularity according to Net

Control Bob Lockwood, AFBØDHU. One of Bob's newest "regulars" is Ted Adams, AFAØRRM, of Fort Calhoun. Welcome aboard, Ted!

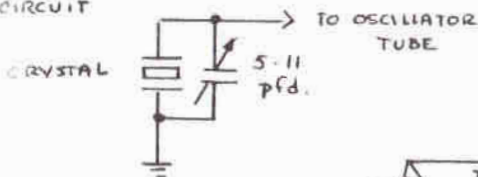
Probably one of the first District One members to pass his MARS CTI test is Fred Fischer, AFØEGP, who

earned a grade of 90%. The test involved basic knowledge of the MARS system, operating procedures and abilities of the MARS member. Congrats on the certificate, Fred!

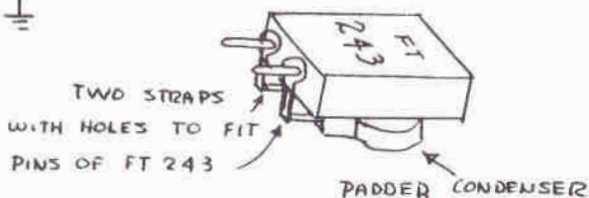
Marty Griffin, AFBØGEH

METHOD OF PUTTING A TRANSMITTER ON FREQUENCY USING COMMON FT-243 CRYSTALS;

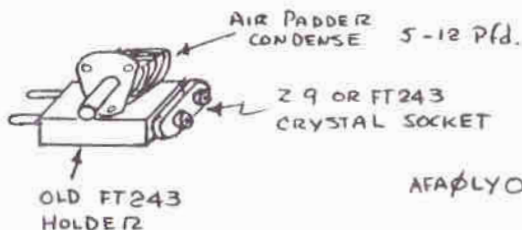
THE CIRCUIT



METHOD NO. 1



METHOD NO. 2



AFAØLYO, AFAØLWQ

FOR SALE

FOR SALE

Ranger II Transmitter . . \$95.00

Galaxy V Mark 3 - excellent condition.

WANTED

Antenna Party.

Harold Abrahamson
WAØORC
7817 Jackson Street
Omaha, Nebraska 68114
Phone: 393-1907

Contact Jay C. McAleer, WAØLLQ
Phone: 339-3448



REPORT OF ANNUAL MEETING NEBRASKA AMATEUR RADIO COUNCIL

By Erv Heinz, WAØEEM

The Nebraska Amateur Radio Council held its annual meeting June 15, 1969 at Centennial Towers East, Kearney State College, Kearney, Nebraska. Club representatives attending were (L to R) Charles Kucera, WØFZZ, North Platte; John Jacobs, WØCSW, Crete; Earle Engstrom, WAØIBB, Hastings; Erv Heinz, WAØEEM, Ak-Sar-Ben, Omaha; Bob Lockwood, WAØDHU, Ak-Sar-Ben, Omaha;

and Curt Smith, WAØEUM, Lincoln.

This commission selected the new member to the Nebraska Amateur Radio Hall of Fame, who will be presented with the award at the Victoria Springs Hamfest on July 27, 1969. (See page 2 for further report.) Cyril B. Wolfe, WØLJO, of the Hastings Club will explain the Hall of Fame program and encourage participation of all Clubs.

Hospitality was enjoyed by everyone. A big "thank you" goes to Barbara Peeks, WAØNFI, and to the Kearney State College.



Dayton L. Phifer, WØVEA
East Tryon Route
North Platte, Neb. 69101

July 12, 1969

Editor Ham Hum

The trend today of using 2 meters and up, offers us an opportunity to develop and build practical antennas that use low impedance transmission line, high gain, and for working mobiles during emergencies, especially, omnidirectional.

Sorry I cannot draw diagrams, but here are tests made with a haywire sort of antenna, using a lunchbox and F.S. meter with the pickup antenna 100' from transmitting antenna, on tripod in the yard, 6' above ground. On other antennas tested in this manner, they showed greater gain when raised 20' above ground.

The R.F. meter on lunch box, usually shows 3 on meter; I made no changes on tuning, though.

I believe that with better construction this antenna can be developed to provide better performance, and as it is, I believe it would give better readings if on a tower.

I connected the directors, 36" long on the ends of the ground plane elements, that is, the ground plane elements are 19" from center; the directors were connected at the center to the ends of the plane elements.

Visiting with John, WØADV, in Denver, he was just back from the Convention in Salt Lake, and all enthused about 2 meters and transcontinental 2 meter F.M. relay.

Joe White, KØCNV, Arvada, Colorado, is hot for 2. Says they use a lot of 2 meters through a relay on Squaw Mountain for emergency work. His 2'er will break the relay ok. He showed me an antenna, something like I have been building, on a 75' tower, except it is store boughten, and uses reflector length elements instead of director length elements. Good gain and omnidirectional.

73,
Dayton

	F.S.¼	R.F.1
Ground Plane vertical		
Ground Plane with dipole element	¼	1
Ground Plane with 1 director	½	1
Ground Plane with 2 directors	¼	1
Ground Plane with 3 directors	¾	1 plus
Ground Plane with 4 directors	1	2

Financial Genius: A man who can earn money faster than his wife can spend it.

Epitaph: Kind words that come along too late for me to live up to them.

Living within your means is apt to make people wonder if there's anything else peculiar about you.

The girl had a long and complicated operation - removal of the telephone from her ear.

(from "LERC Bulletin," Burbank, CA.)

LINCOLN AMATEUR
RADIO CLUB

July 14, 1969

NEWS RELEASE

For Publication: Immediately

Summary: Lincoln Amateur Radio Club will operate station with special commemorative call sign (KØNEB) at Nebraska State Fair Grounds during State Fair August 29 - September 4.

Lincoln, Nebraska

The Lincoln Amateur Radio Club has revealed plans to operate a special commemorative station during Nebraska State Fair August 29th through September 4th at the State Fair Grounds.

Robert Bright, the Club's president announced that the plan calls for the operation of five GT-550 transceivers on 80 through 10 meters. The transceivers are being provided by Galaxy Electronics of Council Bluffs, Iowa. Mono-band beam antennas have been furnished by Hy-Gain Electronics Corporation of Lincoln.

The special commemorative call sign, KØNEB, was issued by the Federal Communication Commission to promote the State Fair and the State of Nebraska throughout the world via Amateur Radio.

Both space and power is being donated by the State Fair Board. All permanent equipment and fixtures have been funded by the Nebraskaland Foundation.

The operation of this station affords amateurs all over the world the opportunity to contact this unique station and have the contact verified by a special commemorative QSL card.

Intended frequencies of operation will be:

SSB	CW
3.980 MHz	approximately 50 KC
7.225+25	from low edge
14.235+25	
21.300+50	
28.600+100	

Amateurs are instructed to send QSL cards to:

Amateur Radio Station KØNEB
Box 1033
Lincoln, Nebraska 68501

All stateside amateurs include a self-addressed, stamped envelope with QSL. Overseas hams will be QSL'd via bureaus.

For further information contact:

John Fuhrman
Hy-Gain Electronics Corporation
N.E. Hwy 6 at Stevens Creek
Lincoln, Nebraska 68501

Diner: I don't like all the flies in here.

Waiter: Okay. If you will point out the ones you don't like, I'll get rid of them for you.

de Auto Call

Reformer: A person who insists on letting his conscience be your guide.

To find out what a poor loser you are, just start dieting.

(from: "LERC Bulletin,"
Burbank, CA.)

NOVICE TRANSCEIVER

by Wm. G. Welsh (W6DDB)

Letters continue to arrive in response to the Novice Transceiver blurb we sent out a few months ago.

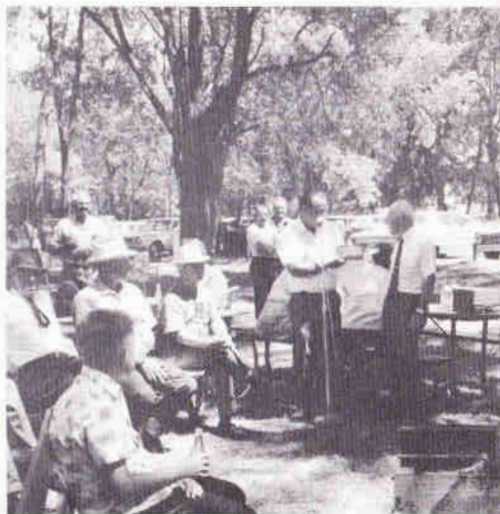
The first outfit that produces this top-quality unit will corner a market which has always been good but is now stronger than ever with "Operation Retread" and the 2-year license term interesting more Novices in the best equipment they can get designed specifically for their use. Novices have been saddled with hand-me-down junk from Generals for 18 years and it's about time they demanded the best possible equipment their money can buy.

If you are interested, promote the cause by sending your individual letters to outfits like Aerotron, Collins, Drake, Galaxy, Hallicrafters, Hammarlund, E. F. Johnson, Signal-One, SBE/Linear Systems, Swan, Yaesu, etc. This has been my campaign for too many years. Novices are discouraged from progressing to higher-class ham tickets when they experience poor results with the inferior equipment on the present market.

Novice 2-meter voice privileges have cost me more Generals than any other single factor during the past 18 years. We've knocked that problem out finally, but the poor selection of Novice gear has been my second worst problem all along and I need help to eliminate this major stumbling block.

How about your help? If you can do so, I'd appreciate receiving a carbon copy of the letters you send.

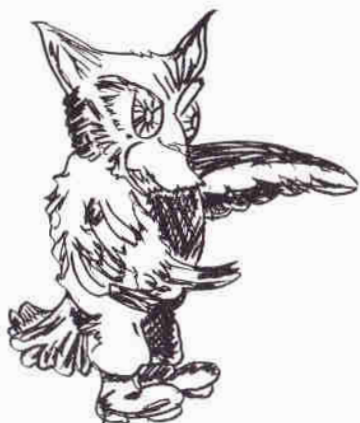
de LERC Bulletin,
W6DDB



Bill Bamer, WØDI, receiving plaque for Amateur Radio Hall of Fame at the Central Nebraska Radio Club's annual picnic at Victoria Springs.

OFFICIAL BULLETIN NR 231 FROM ARRL HEADQUARTERS NEWINGTON CONN JULY 24 1969 TO ALL RADIO AMATEURS BT

Attention DXers. Announcement is hereby made of the deletion of Ifni from the ARRL Countries List. Only contacts made before May 13, 1969 will be creditable toward the Ifni listing. Contacts with stations located in the former Spanish territory of Ifni made after that date will be counted toward the Morocco listing. This deletion will affect Honor Roll totals as of August 1, 1969. Therefore, Honor Roll submissions for the month of September 1969 will be based on deleted totals of 312 CW/F and 311 Phone AR



THE OWL SEZ

Amateur Radio has taken some tremendous strides during the short period between WW2 and today. In most cases, these strides have been forward, but in too many cases the results have been so adverse that they have tended to nullify our forward motion and make the price we have had to pay for our progress so great that one wonders if we are really better off than we were before.

Let's take the case of "power," since it seems to be the biggest offender. The FCC allows hams a maximum power input of 1000 watts. It has always been that, but look at what has been happening--before the war it was downright expensive to put one KW of AM on the air, so the number of phone stations running that kind of power was relatively small. After the war, surplus gear became plentiful at low prices, and the number of "bone crushers" increased rapidly. Then came SSB, and all h_____ broke loose. Legal 1 KW commercial linears can be purchased for about \$350, and

they can be home brewed for much less. As a consequence, our bands, particularly 20M, and 40M next, have become the battlegrounds of the giants, and, in order to keep above the din, many hams are having to resort to even higher powers than 1 KW. The race for power is on, and many of us do not enjoy hamming on the lower bands nearly so much as we used to.

Of course, every coin has two sides, and so does this one labeled "power." Since it was becoming painfully clear that something had to be done if communications were to continue, the logical thing to do was to improve the receivers so that they could discriminate between the giants and the super giants, so more effective filters, better mixer stages, and better detectors were developed. In addition to this, many of the hams who were literally driven off the lower bands, went to the VHF and UHF bands in order to continue their hobby in communications. This resulted in the development of our higher frequency allocations. Also with the advent of "power" came the need for narrower signals to make room for the larger and increasing number of stations on the bands, so the use of SSB was advanced. But, SSB has created its own set of problems and has had a somewhat adverse effect on hamdom. It made "power" at relatively low cost possible, which compounded our crowded band condition problems. Also, because it is relatively complex, many hams have found it easier to purchase commercially designed and built transmitters rather than to build, and, as a consequence, home brew transmitters are becoming a thing of the past. Because of this, our technical and

building skills are rapidly decreasing.

Yes, no one can say that we have not had progress, but the cost has been staggering, and, though we know better, we sometimes wonder whether it is worth it or not, and we wonder where all this is going to lead ham radio.

vy 73's, the OWL
de SKIP, Fresno A.R.C.

HANGOVER: Something that happens to a head that was not used the previous night.

DID YOU HEAR ABOUT THIS?

In almost every home in the country there can be found a remedy that kills pain almost at once, it helps control bleeding, is completely safe, and costs practically nothing. IT IS AN ICE CUBE. Ice is such a powerful anesthetic that surgeons have used it to perform certain types of surgery with the patients wide awake.

DO YOU DO IT?

Apply ice to a burn? It relieves pain and improves healing.

Apply ice to an area where a blow was struck? It diminishes discoloring; it lessens pain.

Apply ice to an area where a sliver is to be removed? It deadens pain.

Some children's doctors use ice over the area where immunization shots are to be given. There are few crying patients in those offices.

de California Division of Highways
and Fresno Skip

OFFICIAL BULLETIN NR 229 FROM ARRL HEADQUARTERS NEWINGTON CONN JULY 10 1969 TO ALL RADIO AMATEURS BT

A new project at ARRL Headquarters involves preparation of introductory amateur radio material for the 12 to 16 age group. Any amateur in this age group, as well as older ones, is invited to participate in this project. Address your ideas on what the publication should contain, what age reading level should be involved, as well as comments on theory coverage to ARRL Headquarters, 225 Main Street, Newington, Connecticut 06111
AR

CREDIT CARD: A convenient way to spend money you wish you had.

OFFICIAL BULLETIN NR 230 FROM ARRL HEADQUARTERS NEWINGTON CONN JULY 17 1969 TO ALL RADIO AMATEURS BT

Effective January 1, 1969, two ARRL Advisory Committees became active in the fields of contests and repeaters. This pilot project is designed to afford a greater opportunity for amateurs to register their ideas and opinions within these specialty areas. Adequate response is vital to help these volunteers reflect the wishes of specialized groups. Information and addresses of members of the Advisory Committees appears on page 62 of March QST
AR

SEMICONDUCTOR POWER SUPPLIES

By W6HHC

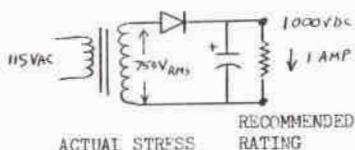
Using semiconductors in power supplies is really the same as designing with vacuum tubes, except that semiconductors operate more efficiently. Except for some very high voltage applications, semiconductors are better because they don't (1) lose power to heat up filaments, (2) lose power in huge voltage drops across the rectifiers, and (3) waste the space consumed by tubes and sockets.

UNREGULATED POWER SUPPLIES

The three basic types of rectification circuits remain the same whether you use vacuum tubes or semiconductors. You still must pay careful attention to the ratings of the devices, because not only will your circuit not work correctly, but you are more likely to destroy the rectifiers if they are semiconductors. The most important ratings are, MAXIMUM

INVERSE VOLTAGE (V_R) and MAXIMUM AVERAGE-FORWARD-CURRENT (I_f). Figures 1, 2, and 3 show the three basic circuits and what kind of voltages and currents the diodes will see in each case.

It is very important to check specifications of the diodes you plan to use in a particular power supply and make sure the ratings are adequate. However, sometimes it is impractical to obtain devices with proper ratings; for example, you may have trouble locating a semiconductor diode with a 2500V V_R rating. However, lower rated devices may be connected in series to give good operation and little loss in efficiency. If, for example, you have diodes rated at $V_R=650V$, then you can put four of these diodes in series to make a rectifier rated at 2600V. The author recommends putting 100k resistors in parallel with each diode to distribute the voltage evenly. Some experts recommend also putting a .05 mfd disc capacitor also across each diode to prevent damage

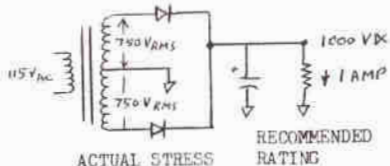


ACTUAL STRESS RECOMMENDED RATING

V_R -- 1060V ----- 1300V

I_f -- 1 AMP ----- 1.5 AMP

FIGURE 1 -- HALF-WAVE RECTIFICATION

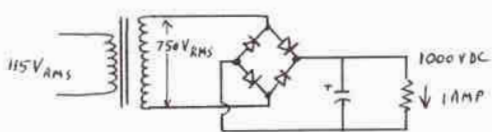


ACTUAL STRESS RECOMMENDED RATING

V_R -- 2120V ----- 2500V

I_f -- 0.5 AMP ----- 0.75 AMP

FIGURE 2 -- FULL-WAVE RECTIFICATION



ACTUAL STRESS RECOMMENDED RATING

V_R -- 1060V ----- 1300V

I_f -- 0.5 AMP ----- 0.75 AMP

FIGURE 3 -- BRIDGE FULL-WAVE RECTIFICATION

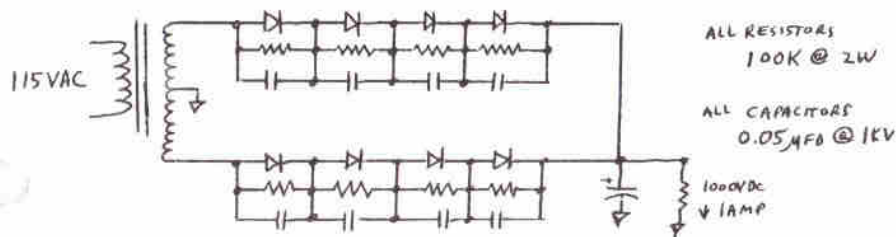


FIGURE 4 -- POWER SUPPLY USING LOW VOLTAGE DIODES

from transient voltage spikes. Figure 4 shows the circuit of Fig. 2 redesigned using lower rating diodes.

RIPPLE IN SIMPLE POWER SUPPLIES

Usually filter chokes are not used in low voltage power supplies (0-75V) and many times not in high voltage supplies. The reason is that the voltage drop across a filter choke is usually excessive. For example, in a one amp supply with a 3Hy choke (100 ohms), 100V will be dropped across the choke. This may be OK with a 1KV supply, but can you imagine what this would do to a 12V power supply? Therefore, a large filter capacitor is the main source of ripple suppression in a simple power supply. The heavy line in Fig. 5 is what the output voltage (voltage on the capacitor) looks like for full-wave rectification. The ripple factor is expressed as the percentage of PEAK-TO-PEAK RIPPLE divided by PEAK VOLTAGE. How large the ripple is, depends on how much the capacitor voltage decays (discharges) between half-cycle peaks. How much the capacitor discharges depends on the value of the time constant formed by the filter capacitor, C_f , and the load resistance, R_l .

For example, if the output voltage is 1000 vdc and the current is 1 amp, then the load resistance is:

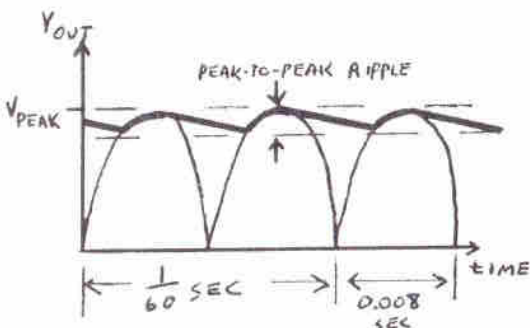


FIGURE 5

If you desire 10% ripple, then make the time period of one half-cycle (.008 sec.) equal 10% of the time constant formed by (R_l) (C_f). Therefore, since $T=R_l C_f=.08$ sec.,

$$\text{then } C_F = \frac{T}{R_l} = \frac{0.08 \text{ sec.}}{1000 \sim} = 80 \text{ MFD}$$

Figure 6 shows what value of capacitor you need, depending on what the load is and what amount of ripple you can tolerate. Use twice the capacitance shown if you are using only half-wave rectification.

PERCENTAGE
OF
RIPPLE
DESIRED

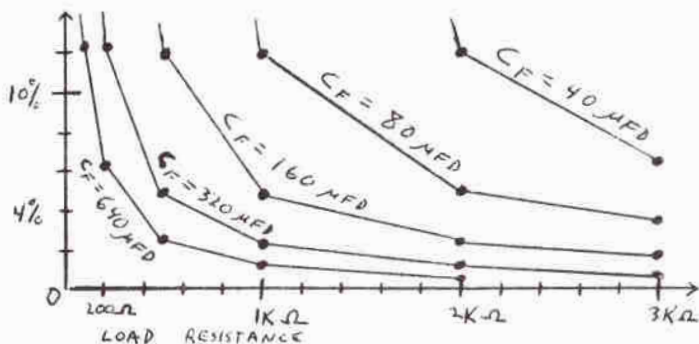


FIGURE 6 — CAPACITANCE VS. RIPPLE CURVES

de RF, Orange Co. ARC

NEW REGULATIONS EFFECTIVE

Well, Chicken Little, the sky isn't falling. November 22 came and went, and it looks as though amateur radio is still going strong. We decided to see what the bottom end of 20 CW was like on the morning of November 22. Apparently the commercial stations were aware of a change in amateur frequency privileges, because there was a commercial with a wheel going strong on 14002, and another station handling some traffic on 14004. Since we weren't sure the latter was a commercial, we sent IMI — to which he replied with the same. Then we asked him "QRA?" — and got no response. So.....we called "CQ DX," and raised a UA9. After concluding a chat with him, several other hams came down to the bottom of 20, and worked the UA9. And wouldn't you know it, the commercials GOT OFF! The traffic man disappeared, and the wheel moved to 13998, which is probably where he should have been in the first place.

That evening we looked over 3500-3525. Heard DL4ZZ in the CQ DX Contest, with scads of stations calling him; also a very busy KV4. Then we decided to give the bottom end of '75 a whirl. We quickly found the familiar voice of W8EGR — at his cabin QTH, WB8BYX. Jim was talking to Joe, W8NWU, of Muskegon and W9SW over in LaGrange. Then along came a WAØ on CW! A few comments were exchanged about CW operation by anyone not holding Extra Class — and the WAØ persisted in sending with an electronic key he obviously could not control. When we suggested taping him, the character disappeared.

This calls to mind that General Class (and Conditional, of course) are NOT permitted to operate *any mode* in segments of the amateur band specifically reserved for higher class licenses. This feature of Docket 15928 was only recently noticed, and should greatly improve phone operation, assuming the percentage of obstructionists is, at its worst, proportional to the respective number of licensees in each class. How many

obstructionists hold Extra Class licenses remains to be seen. We note that an Extra Class licensee was one of the Kentucky hams found guilty of using obscene language, (as reported elsewhere), so it is plain that the license does not make the gentleman.

At present, the higher class licensees are having a lot of fun. As W8NWU put it, "I've waited 16 years for this!" There is some QRM, but not enough to prevent solid QSO's; and this has been the exception rather than the rule since 1952. We sincerely hope that there will be a tremendous influx of new Advanced and Extra Class licensees, to the point where the reserved segments become crowded. At that point, we suspect FCC will call the incentive plan successful — and further enlarge the restricted segments.

(from: "DARA Bulletin," Detroit, MI, and FEARL News)

DISA & DATA

Representative John Dingell (D of Michigan) proposes revamping or replacement of the FCC. Mr. Dingell is a high-ranking member of the House Interstate Commerce Committee, which has jurisdiction over the three related Bills he sponsored. H. R. 3057 would transfer the independent FCC

to the Commerce Department. H. R. 3058 would abolish the FCC. Under H. R. 3058: (1) the Transportation Department would allocate safety and special radio service frequencies; (2) a broadcast regulatory group would be established; (3) a telecommunications common carrier commission would handle common carrier and satellite communications; and (4) a telecommunications resources authority would handle frequency allocations other than those for the special and safety services. H. R. 3059 would authorize a Commerce Department study of the FCC, with recommendations submitted to Congress.

The House Small Business Committee is pushing for more special services radio frequency spectrum. The present 6-MHz TV channel width is again under attack, with technical studies supporting reduction to 3-MHz — a long-overdue change. This shapes up as quite a battle between commercial broadcasting and business communication groups, with the bottom seven UHF channels (470-512 MHz) as the prize. It is hard to argue that TV fare is more important than prompt ambulance, telephone, fire, police, oil delivery, and similar vital services. The broadcasters are using 2167 MHz of prime spectrum between 535 KHz and 13,200 MHz, including:

<u>MHz</u>	<u>MHz</u>	<u>MHz</u>
0.535 — 1.605	25.85 — 26.10	940 — 952
5.950 — 6.200	26.10 — 26.48	1990 — 2110
9.500 — 9.775	54.0 — 72.0	3500 — 3700
11.700 — 11.975	76.0 — 88.0	6425 — 6575
15.100 — 15.450	88.0 — 108.0	6875 — 7125
17.700 — 17.900	174.0 — 216.0	11700 — 12200
21.450 — 21.750	470.0 — 900.0	12700 — 13200

de LERC

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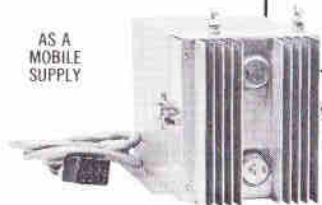
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