

WØEQU

November 1958 P.O. 626

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PROGRAM - November 14th

Quote from the Anchorage Daily Times, July 18, 1958:

RADIO HAMS GATHER FOR THREE DAY MEETING

More than 40 amateur radio operators from throughout Alaska and one from California have made reservations for the three-day all Alaska amateur radio convention which will open here this afternoon.

Here from California for the convention is William T. (Temp) Campbell, Sr. of Oakland, California who is visiting his son M/Sgt. William T. Campbell in Nunaka Valley."

While Temp was visiting in Alaska and attending this convention he took a series of slides of the convention plus a look at the 49th State: Seward, Anchorage, Fairbanks, Mount McKinnley National Park, fish and game scenes. All this in 35 mm. color slides and with W6ELW, Temp himself not in person, not by Ham radio, but by specially prepared magnetic tape recording. (Editor's note: Much cheaper to mail the tape than to mail Temp.)

This program was arranged through the efforts of our secretary, Dave Hollander. Along with the films Dave received a copy of the Anchorage Daily Times plus other mementos of the convention. In-

cluded was the picture shown herd of KL7BID of Spennard, Alaska, with a note on the bl "Very active XYL operator. Runs KW." She must be active otherwise than on the air as we see her picture in the Northern Lights Carrier serving coffee at the convention and note also that she is one of the officers of the Anchorage Amateur Radio Club. This issue of the Northern Lights Carrier gives a complete run down of the convention and whereas it is eight pages long we notice one paragraph describing the convention as follows:

"We have too few gear displays and too limited a choice of speakers to put ourselves in the category of stateside productions. Notwithstanding these limitations our hamfests have something better than statesiders. We have SPIRIT. To those coming in from the bush for an annual reunion with friends, to YL's and XYL's who have at best a vein interest in hamming, and to ragchewers who do best with ashtray and glass at hand, the Alaska hamfest has some elements unique and valuable." "e paper makes interesting read g but too lengthy to print here. We'll have it at the meeting.

MOONLET

The following has been gathered from here, there, and rywhere, by Cecil DeWitt, warm, and at the time of going to press we do not know as to the success or failure or even postponement. By the time you read this you will know.

The U.S. is going to make another try at the moon shot. The next try is scheduled for the week of November 3rd. The moonlet to be sent up on the next shot will be equipped to check six channels of information and transmit the information to receiving stations on earth. It will check radiation, influence of magnetic fields upon itself. micrometeorites, temperature inside the moonlet, cosmic radiation, and will send TV pictures. The moonler's transmitter will be of the continuous sending type as there is no room either space wise or weight wise for any tape storage equipment. One of the forseen difficulties is the possible blanking effect as the moonlet passes around the other side unless a corona electromagnetic radiation effect will bend the radio waves to a point where reception is possible. This blanking effect should not of too great a consequence for with the speed of the moonlet and the distance from the moon, the shadow will last a very short time, possibly short enough to be measured in seconds. Receiving stations are located at Jordan Bank, England, Singapore, Hawaii, Milestone Hill, and Cape Canaveral. The information is teletyped from these stations to Inglewood, California and to the 704 IBM computers.

The transmitter on the moonlet will be sending our a frequency modulated signal with a center frequency at 108,09 megacycles. It will be sub-carrier modulated by six frequencies. The sub-carriers are as follows: 400 cycles per second for radiation; 560 cycles per second for magnetic field detection; 730 cycles per second for TV: 960 cycles per second for micrometeorite and internal temperature; 1300 cycles per second for cosmic radiation; 1700 cycles per second for cosmic radiation and ATC. The moonlet contains power sources that are expected to keep the transmitter in operation for a period of 7 to 10 days. It will go through a sterilizing procedure in its assembly that would be more appropriate to the hospital operating room. A team of three men make it a point to sterilize the dismantled moonlet as completely as possible with the use of ultraviolet radiation. This is being done to satisfy

3

the scientific pleas to keep the moonlet free of mundane ills and thus in the event of a landing of the moonlet onto the surface of the moon there would be no spreading of germs before the first visit for the purpose of studying the actual conditions to be found there.

The moonlet will be made to spin on its own axis. Photo diode lens assemblies will provide a crude picture of the moon. This picture will not be the one we would normally expect to see but will record the infrared radiation, and will be of the flying disc type. The horizontal scan will depend upon the speed and rotation of the moonlet itself. The vertical scan will depend upon the time and sweep path of the moonlet as it rotates around the moon. The moonlet of the United States will try for a speed of about 23,456 miles per hour. This is not an escape velocity (25,500 miles per hour) but a speed high enough to permit the moonlet to loop the moon and return to earth. The Thor able rocket that is to put the moonlet into orbit is 88 feet long. The moonlet and nosecone will weigh 82.7 pounds. After 5 minutes of power and speed of 23,456 miles per hour it should be able to rende yous with the moon in approximately 62 hours. It will have to approach within 50,000 miles of the moon so that the infrared or heat seeking television eye will be able to send its information back. It is expected that TV will reveal a picture not unlike the side of the moon we now see. The pock marked lunar moon face with its desolation will still be a beal ful sight for it will be the end of wishes and mean the freedom of earthly bounds. The moonlet will have to travel better than half a million miles to achieve the round trip. The moon what next? Anyone now and interested in more information regarding this moonlet, please contact me, WURMB, REgent 4619.

STATION WAGON WINNER

The grand prize of the 10th National ARRL Convention in Washington, D. C. a Chevy Station Wagon with a Gonset G-66B and a G-77A was won by James J. Faye, K4IIU. An interesting note picked up from Auto-Call, October, is that Jim obtained his general class license at the Convention and the next day was notified of his prize. Even though lim had a novice license in 1956 and a technician license in 1958. this was not his first license. His first license was obtained the influence of none other than Hiram Percy Maxim. He and several associates 'ecame interested and got cir tickets from the Department of Commerce in 1921.

SINGLE SIDEBAND - Part 6

Now that a single sideband signal has been generated, by either the filter method or the phasing method, the only renaining problems are how to put he SSB signal at the output frequency and how to amplify it. Most of us have been used to using class "C" amplifiers in our A.M. transmitters. The reason, of course, is that the class "C" amplifier is the most efficient amplifier that we know. The plate efficiency of a properly designed and operated class "C" stage will be about 75%. But a class "C" stage has two major limitations, the first being that it must work into a tuned circuit. Since any R.F. amplifier, regardless of what class of operation is used, must work into a tuned circuit the class "C" amplifier doesn't show a disadvantage on this count. The second limitation is that a class "C" amplifier must have a constant input signal. The output signal of a class stage will be constant amplitude, whether or not the input signal is, so that its application is limited to C.W. and A.M. transmitters.

In an A.M. transmitter the only portion of the signal that is handled by class "C" amplirs is the carrier, and it is of constant amplitude. In a "plate modulated" A.M. rig the final class "C" stage amplifies the

carrier signal only. The audio signal from the speech amplifier is mixed, or hetrodyned, in the plate circuit with the carrier signal, but is not amplified. If grid or cathode modulation is used the final amplifier cannot be operated class "C". And since a single sideband signal is not constant amplitude the use of class "C" amplifiers is ruled out in this application. If a SSB signal is used to drive a class "C" amplifier the SSB signal will be completely destroved. Also, since all trefrequency multipliers operate in class "C" their use is excluded. What then can be used to change frequencies and to amplify a single sideband signal? Any LINEAR amplifier can be used to amplify a SSB signal. A linear amplifier is one in which the output signal is a faithful reproduction of the input signal. This could be a class "A", class "AB", or class "B" stage. The most distortion free amplifier is one that is operated class "A", while the most efficient linear amplifier is a class "B" stage. A linear class "AB2" amplifier is about 60-65% efficient, as compared to the 75% efficiency of a class "C" stage. Either the class "AB1" or class "AB2 type operation offers a good compromise between plate circuit efficiency and low distortion. A linear

(Cont'd on page 13)

VHF NEWS

Here is the VHF news from the past month. Most newcomers on the VHF bands are in doubt as to where to operate in these 4 mc. wide bands. Because of this great amount of bandwidth it is common practice to use the first 500 kc. in both the 2 and the 6 meter bands. In other words, when you order your crystal for either 6 or 2 it's a good idea to stay below 50.5 mc. or 144.5 mc. if you intend to work the DX portion of either band. Otherwise, you can generally work up to as high as 51 mc. on 6 and 145.5 mc. on 2 and still probably be heard by someone. Since many licensed do not even know amateurs where the 2 and 6 meter bands are, in respect to frequency, it might be a fine idea to list these frequencies at this time -6 meters from 50 to 54 megacycles. 2 meters from 144 to 148 megacycles. Consult the ARRL or the Radio handbook for any further information as to modes of emission etc.

The use of the VFO on the VHF bands has not come into wide use as yet. We will probably be seeing more VFO operation in the future although there is some question of a VFO having enough frequency stability for C.W. on VHF oper-

ation. Remember, you are multiplying 18 times the fundamental frequency to get up to 144 . and any drift is accumulative when using a conventional osc. multiplier arrangement.

By mutual agreement in the more active VHF areas in the world the first 50 or 100 kc. of each band is used for CW. I personally hope that FCC will the League's recent to create 100 proposal 'CW only' sub-bands. I feel that this should be left on a strictly voluntary basis and if more of the ham fraternity would co-operate in this respect it then wouldn't be necessary to have this legislation for 6 and 2 meters.

With the long dry spell our local power line noise is again at a peak. It would indeed be a boom to radio communications all flourescent lamps and other noise making appliances were required to be equipped suitable and efficient with filters. This reminds me of the time I visited a certain novice ham in Council Bluffs who had a flourescent desk lamp sitting right on top of his receiver and was wondering why he had so much buzz on 40 meters. Sh ag the lamp off completely eliminated the 'buzz'.

Two meter converter builders and Gonset owners in the Omaha area usually will notice an annoving signal and associated sidebands right at 144.5 mc. 'his has been labeled as the IV blurp. The question is, how do we get rid of this blurp? First of all, the blurp is the result of the two video carriers of channels 3 and 6, at both 61.25 mc. and 83.25 mc. heterodyning together in the mixer stage of your converter. The signal is then passed on through the I.F. and audio stages of the receiver. About the easiest way to get rid of it is to use a co-ax 'T' fitting right on the input of the converter and to make up a quarter wave OPEN ended trap and you cut this for either of the TV carrier frequencies. It figures about 31 inches to cut out the channel 3 carrier and this is allowing for the propagation factor of any standard co-ax cable such as RG-8/U or RG-59/U etc. In some locations around Omaha this will not completely eliminate the blurp, but it will knock it down quite a bit from the original strength.

> John D. Snyder, WOWRT 2402 So. 43 St. Omaha 5, Nebr. RE 1538

Frank Cooper, W11OS/2 is operating again on 10 meters from his new location in Short Hills, New Jersey - sends his regards to all the gang back in Omaha. He can be found on weekends, possibly on SSB, between 28600 and 28700.

73's Ed, WØMKP

OFFICIAL BULLETIN NR 677
FROM ARRL HEADQUARTERS
WEST HARTFORD CONN
OCTOBER 30 1958 TO ALL
RADIO AMATEURS BT

Registrations for the annual cross indexed ARRL net directory will be closed out shortly after November 1 in order to get it in circulation in good season. Many nets registered last year have not been reregistered since August 1, 1958 and will be ommitted from the directory if not registered by November 10. Net managers and net control stations are urged to see that their nets are registered. Any that have changed time since original registration are requested to put the change on file so that the directory will be accurate. See September QST page 82 for full details on registering your net AR

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Unfortunately our 420 mc transmitter at the picnic was a dud. After the picnic, examination of the transmitter showed that old IJK had "goofed" in hooking up the modulator. The necessary changes were made and the 420 "bug" found to be in FB operating condition. To keep the batteries from being a total loss we will have a 420 hunt at the next club meeting so bring your loop or There will be a nice prize for the one who finds the "bunny" and this time you will need a snooper to find it as it will be out of sight.

It is drawing near to the time when you will have to be a member in good standing to vote on the annual election of officers and also to stay on the club roster. Our membership has increased noticably in the past year and naturally we would like to see all those names that were added stay on the roster. The board now has before it over 60 names of members whose dues are not paid. Many of the names are old members that have actively participated in club functions and no doubt will bring their dues to date soon. To those have given thought to dropping out our editorial is directed. Fellows, participation in the club is the only way that we can build a club that can be

an enjoyable function to all. Each of us certainly have our small gripes as to what's wrong about and with the club. This Editor is probably one of the gripingest. I for one feel the each is entitled to a good gri IF that person takes an active part in the affairs of the club and will put his gripe in the open so that other members can have a chance to know what's wrong and perhaps do something about Bring your gripe's to the meeting and if enough fellows feel the same way, you can change things to your way. You can't do anything about it by griping to your buddy. Gripe to your board. (After you pay your dues - naturally).

This editor was very sorry to read an editor's article in another club paper on the subject of DSB. Any amateur or amateur paper is entitled to comment and reflect their opinion on a subject dealing with a mode of transmission and this is certainly not disputed. However, the very poor wording and bad taste used in attacking a manufacturer SOLELY because that company makes the equipment offering a mode of transmission not comparable with that persons opinions is pretty low on list of amateur ethics.

ARRL has requested information concerning the phonetic list commonly used by amateurs today. Please make a note of the list you commonly use on the enclosed card and send it to Box 626.

ICAO List

| Alfa | Juliett | Sierra |
|---------|----------|---------|
| Bravo | Kilo | Tango |
| Charlie | Lima | Uniform |
| Delta | Mike | Victor |
| Echo | November | Whisky |
| Foxtrot | Oscar | Xray |
| Golf | Papa | Yankee |
| Hotel | Quebec | Zulu |
| India | Romeo | |
| | | |

ARRL Word List

| Adam | John | Susan |
|---------|--------|---------|
| Baker | King | Thomas |
| Charlie | Lewis | Union |
| David | Mary | Victor |
| Edward | Nancy | William |
| Frank | Otto | X ray |
| George | Peter | Young |
| Henry | Queen | Zebra |
| Ida | Robert | |

Other?

If your list varies from any of the above, please write your list down on the card and mail to P. 9. Box 626.

J AN-CCB List

| Able | Jig | Sugar |
|---------|-------|---------|
| Baker | King | Tare |
| Charlie | Love | Uncle |
| Dog | Mike | Victor |
| Easy | Nancy | William |
| Fox | Oboe | Xray |
| George | Peter | Yoke |
| / w | Queen | Zebra |
| .m | Roger | |
| | | |

ALL FOR \$3

(de CKRC lnk)

"Why, in some parts of the world you can get a pound of coffee, two loaves of bread, a quart of whiskey and a wife for three dollars."

"Huh---can't be very good whiskey."

Earle Olson and XYL Marion are now active in Puerto Rico. We are relying on memory for Earle's call but believe it is KP4APW and Marion's KP4APX. 15 meters is the most likely band to spot Earle or Marion using their Ranger and Hy-Gain 12AV vertical antenna.

Our auction went over just 'so-so. Maybe the first ones' gear auctioned was just lucky, but those parts went fairly good. A lot of parts for those future projects at bargain prices. A lot of the later items on the block did not go very well. I am inclined to believe that gear of too high a cost was the main reason. Certainly there were some good buys of \$30.00 items for \$20.00 but I for one feel that is not what the fellows are looking for. A fellow brings perhaps \$5.00 tops for a bargain and may buy a couple parts totaling that. Our suggestion for the next auction is as follows: Bring one to five items. Make them that have some real items "Junkbox" appeal. Don't set a minimum of more than \$1.00 on any item. Be prepared to sell at the minimum (or less). Maybe these few rules of a sort will make our next auction a big success.

A note in the "Lincoln Log" asks if anyone is using a hoola-hoop antenna. Just take a look in the November QST.

If we were to kick the personsible for most of our troubles, we wouldn't sit down for six months.

On Sun. July 20, KØCBV, Louie, and fam. of Beatrice, left the ham radio picnic at 5:45 in Lincoln to take their daughter Marjorie to the bus at 6:10 for Omaha where she is employed. Finding there would be no buses, KOCBV thought he'd have to drive to Omaha. Then WOAOO. Lee, a passenger in the car, suggested contacting the picnic grounds, so CBV called via mobile ham radio to the picnic grounds and immediately reached KØLDP, Chuck. Thanks to Chuck's prompt action on the PA system, he was able to obtain transportation to Omaha for Marge with WOYEV, Ed, who who just leaving for Council Bluffs. KOCBV and fam. wish to thank the hams for their prompt and valuable assistance

Mrs. Louie Fink

Don't forget and oper 11 meters. We don't have anymore.

XYL'S LAMENT

(Tune of "Beautiful Beautiful Brown Eyes.")

Eighteen long years I've been married Might as well be single again A woman never knows of her troubles Till her hubby becomes a ham.

Those beautiful beautiful blue eyes
Used to take me into view
But now they can't see past the receiver,
Especially when it's calling "CQ".

"Don't iron, don't sew, keep the kids quiet You cause so much "qrm," If there's "TVI" Little Darlin, You can always just twiddle your thumbs."

Meals get cold while we wait For him his earphones to nix His voice booms on in excitement He's getting some valuable "DX"!

At last to my kitchen he staggers
And falls down by the door
"Oh hand me my dinner, my Darlin,
For strength to ham some more.

In the wee small hours he retires,
Then in a voice sweet and low,
''Oh hand me my handbook, my Darling,
So I can study some more.''

Won't someone tell me, please tell me, How to win him back again, Don't tell me it's hopeless -- there's surely A way to cure a ham!

(I wrote this 2 years ago, and since then I decided if I can't whip 'em, might as well join 'em, so my call is KNØKJH.) -- "Els"

Mrs. Louie Fink

11

The Norfolk Radio Club has 8 of its 10 new BC-1335 -10 meter FM Transceivers in operation. The boys are organizing a Civil Defense and Emergency Mobile Net for Norfolk and Madison County. Plans are to operate the two channel rigs on 29.240 and 29.600 mc. Tests have shown that the little 2 watt transmitter will give reliable communications up to 15 miles between ground mobiles and over 25 miles between ground and aeronautical mobiles all using the BC-1335. Hams participating are HKE, GHM, YSK, RHI, HMZ, ABT, APS and NBO. WODHO, Wisner, WOZUT, Stanton and WOJED, Wayne have also purchased sets to tie in with Norfolk and Fremont nets

Hope U can make some intelegents of this.

Thanks for Ham Hum.

WØYSK

Everytime' I take a drive around town I see a dozen new towers and beams that have sprouted since I was last by that location. Come on fellows, if you have put up a new antenna or tower of any sort in the last 4 months put that free postage card you get with HAM HUM to use and let us have the details on the new sky-hook.

The following officers took office October 10, 1958 and will be responsible for directing the activities of the Johnson County Radio Amateurs Club. WØERH, Mission, Kansas for the next 12 months: President-lack White -KOIDI: Vice-President-Bob H. Lanvon WØRXD; Secretary--- John N. Clark - KØKNG; Treasurer---James L. McCov - WOLUV; Publicity Chairman---Bob E. Whitmer - WONCK; Technical Chairman---Bill H. Hailey -WØEDB; Activities Manager---Carl R. Rollert - WONIA.

I enjoy your fine publication very much and wish to congratulate all concerned.

73, Wilbur E. Goll - WØDEL

FOR SALE OR TRADE: Complete 600 watt linear amplifier and power supply in delux cabinet rack on caster; 813, regular screen supply, 50 mfd filter, TVI'd, and 3 meters - \$150.00. Hallicrafters SX-28 vy gud & vy clean, looks and works like new, \$135.00. Central Electronics Model B Sideband Slicer used with above rcvr., \$50.00. Slicer and Receiver for \$175.00.

WANTED: 75A2 or Drake revr. Bill Gettman, WOYSK Norfolk, Nebra amplifier will show some small amount of plate current even when there is no grid driving signal. This is known as idle current, and is determined by there the amplifier is operated at its characteristic curve. Of course a linear R.F. amplifier must have some sort of tuned plate circuit.

But what about changing bands in a single sideband exciter? Frequency multiplication is ruled out, because even if a multiplier could be made to operate linearly, it would change the basic frequency relationships of the SSB signal, and complex frequency divider circuits would be needed at the receiver. A much simpler method of band switching is to use mixer, or converters. These mixers operate in exactly the same manner as the mixers in a receiver do, that is, to shift a signal in the R.F. spectrum without changing its characteristics. The mixing process is exactly the same as the modulation process. In a mixer circuit, two signals are applied to the mixer tube, namely, an oscillator signal, and a SSB signal, in the case of a SSB exciter. The output signals consist of both the original signals, and the sum and differice signals. A tuned circuit is used to select which output signal will be amplified by the following linear amplifier.

To sum up, a filter type single sideband exciter operates in the following manner: a DSB signal is generated in the balanced modulator, then converted to an SSB signal in the filter. It is then hetrodyned, or mixed, up to the output frequency in a mixer stage. After leaving the mixer the signal is amplified by linear voltage amplifiers, then fed to a linear power amplifier. The output of the linear power amplifier can be fed to an antenna, or used to drive a higher power linear power amplifier. This, then, is the complete picture of the how and why of single sideband.

Next Month: Some notes on constructing a single sideband exciter.

NOTE: If you have any questions about anything that has been discussed in this series, the author will try to explain them. Type or print only, using one side of each piece of paper only, and enclose a stamped, self-addressed envelope. Inquiries may be sent to: Harlan Bercovici, 3218 So. Michigan Ave., Chicago 16, Illinois.

The old 10 and 15 meter band is really going to town. The DXpeditions are doing a very good job. It has been reported that a KH6/ZK1 has been worked along the HC8's and Danny has been on from VP2. I have not heard from CPM on his DX but Mac YVV was hot and heavy after the HC8's of which there are two. I have heard them at 21225 and above 14300 SSB. De De hasn't deserted us but we have a rumor that he is buying a HT32 SSB. Are you after another DXCC on SSB De De? Fat Gerry KKP has really been working them on CW. He is really after that DXCC on C.W. Don't forget all the contests coming up and jump in after that new country that a lot of times is on only during the contests.

We have a report that Dick, YZV, has worked South America on six meters by way of a LU3. If the card comes in all that is left is Oceana for his WAC on six meters. (Ed. note - card came in.)

The only thing left is good and better hunting ahead this winter.

> 73, WØNKG

WØEXP, Charlie, is sporting a new HT-32 as is Eddie, WØUEV. Maybe they can operate them push-pull? FOR SALE: Dear Sir:

I have in the back yard of my home QTH a home made, three element, ten meter, plumbers delight beam patterne after a design in the ARR Antenna Book, which I would like to sell for \$16.00 cash and carry. My home address is:

John W. Hartung, KØGPR 3102 S. 72nd Avenue Omaha 14, Nebraska Phone - - RE 1662

I am able to be at that location only on certain weekends and would appreciate it very much if prospective customers would write or call that address so that I will be able to contact them when I get home for an appointment to see the beam, and so that I could help them to disassemble it for shipment.

Sincerely,
John W. Hartung
P. S. Material is 7/8" and 1"
diameter aluminum tubing, a
converted Gotham 20 meter
plumbers delight beam with
2 els

FOR SALE

6 meter Gonset Communicator III, like new.

Lloyd Penniston, KØGAM 4610 So. 61st Ave. Omaha, Nebraska Phone: ORchard 1910 (From SIDEBANDS, St. Louis and CQ News)

SCIENTIFIC ANALYSIS OF WOMEN -

you are acquainted with chemistry, you may be interested in this scientific analysis of a familiar and interesting element - woman SYMBOL -XYL (YL in the pure state) DISCOVERY - first detected in the pure form by Adam in the Garden of Eden. PHYSICAL PROPERTIES -1. Boils at anything, 2. Freezes at anything 3. Melts when properly treated. 4. Very bitter if misused, 5. Very unstable under pressure. ACCEPTED WEIGHT - 118. OCCURANCE - On all bands, phone and CW from 0800 'till 1700. CHEMICAL PROPERTIES -1. Possesses a great affinity for gold, silver, platinum and precious stones, 2. Reacts violently if left alone. 3. Has ability to absorb great quantities of food. 4. Tends to radiate spontaneously and spuriously when in proximity with like elements. TEST FOR - Turns green if placed beside a better looking specimen. USES - 1. Highly ornamental. 2. Useful as a catylist in acceleration of low spirits. 3. Useful as an ualizer in the distribution of wealth. 4. Probably the most effective income reducing agent known to man. 5. Sometimes acts as a powerful deterent to ham activity. CAUTION ****

highly explosive in inexperienced hands! -Anon, with appropriate modifications.

AK-SAR-BEN Radio Club HAM HUM Omaha, Nebr.

Gentlemen:

We, the gang up here in North East Nebr. sure enjoy getting Ham Hum and have decided to help the cause. Here is five-bucks and a few of the fellows who would like to be put on the list. Also want to tell you that we think your yearly picnics are tops and you can always expect some of our gang to attend. Luck to your club and to Ham Hum.

Harlan Dewitz, WODHO Wisner, Nebr.

Ham Hum

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> EDITORS Al McMillan, WØJJK Dick Eilers, WØYZV

AK-SAR IN RADIO CLUB IN P.O.BOX 626 OMAHA, NEBRASKA

NEXT MEETING
AK-SAR-BEN 4-H BUILDING
AK-SAR-BEN FIELD
NOVEMBER 14, 1958
8:00 P.M. SHARP

Permit No. 221

Omaha, Nebr.

Poid

U.S. POSTA

BULK RA

Form 3547 Requested