

HAM HUN

AK-SAR-BEN
RADIO CLUB
INC.

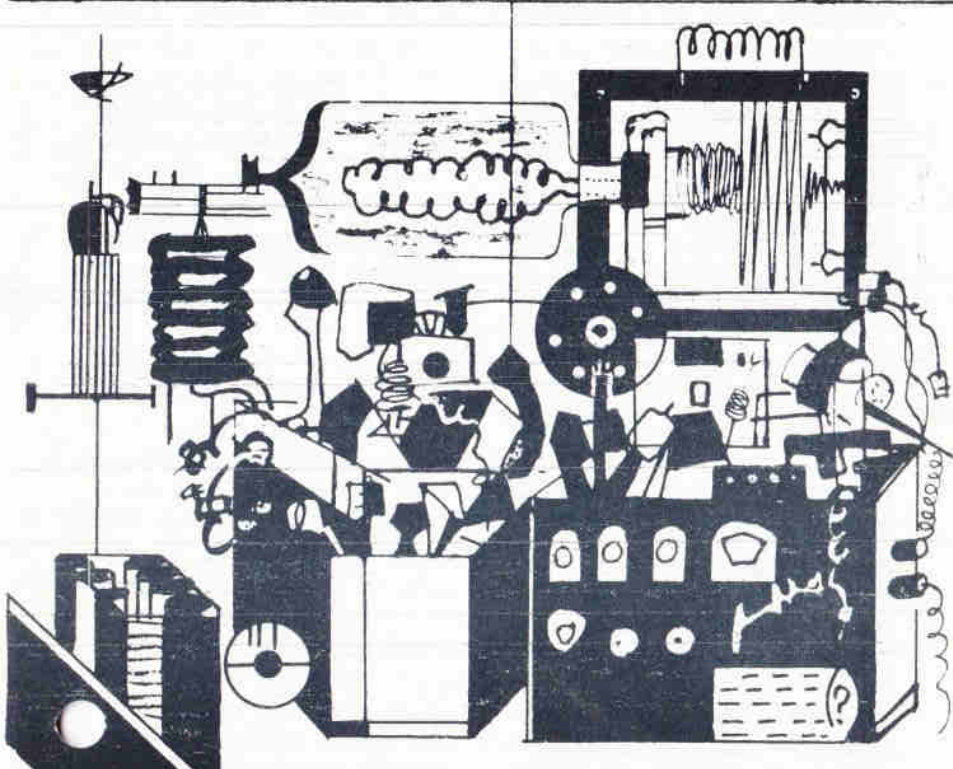
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August 1958

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Gadget Night August 8 See Page 3

Ham Hum

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HAM HUM is the official organ of the Ak-Sar-Ben Radio Club of Omaha, Nebraska, Mailed monthly to all members and to others upon request. News and information of interest to amateur radio is gladly

accepted. All items must be received at least two weeks prior to the second Friday of each month for inclusion in the current month issue. Submit all correspondence to P.O. Box 626, Omaha, Nebr.

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Ak-Sar-Ben Radio Club memberships are open to all persons having an interest in amateur radio and its activities. Dues are 50¢ per month or \$5.00 per year when paid in advance. Students

rate is 25¢ per month or \$2.50 per year. Initiation fee \$1.00. Special rate for OM-XYL, \$6.50 payable annually. Meetings are held on the second Friday of each month.

AUGUST MEETING

Your admission to the next meeting will be a gadget. Any kind, any thing whether it works or not, just so it's novel and something you made. We hope to have a weird assortment of gear lined up on the table for display and you can spend the coffee break explaining what it is and how it works.

Single Sideband PART 3

Now that we have decided to go SSB, the only remaining question is How? Actually, it isn't as hard as it might appear. Remember, we are going to generate an A.M. signal, then eliminate the carrier and one sideband. First let's consider how the carrier is rejected.

The notch filter: One method of suppressing the carrier is to generate an A.M. signal, then put a very sharp filter, that is tuned to the carrier frequency, into the circuit. This will filter, or notch, out the carrier, while leaving the sidebands intact. One type of filter to use here is a crystal filter. However, since a fairly complex filter is needed to obtain the required degree of selectivity, about 500-600 cycles, and since a simple filter that is sharply notched leaves the signal sounding "tinny", crystal filters in this application haven't found much acceptance. The other filter is the Tee-notch filter, as used in some

receivers, namely the HQ-170, HC-10, SX-100 and SX-101. This filter will put a notch that is 50db deep and only about 600 cycles wide into the passband, thus notching out the carrier, and restricting the modulated frequencies below 300 cps. Thus we will get both carrier suppression and audio range restriction from this device. The high side speech restriction is handled by the sideband filter, which will be explained later. The Tee-notch is a good method of suppressing the carrier, but since the design formulae for it are rather complex, it has not been used to a great extent in homebuilt SSB equipment. However, the Hallicraters HT-32 exciter uses a Tee-notch filter in this application.

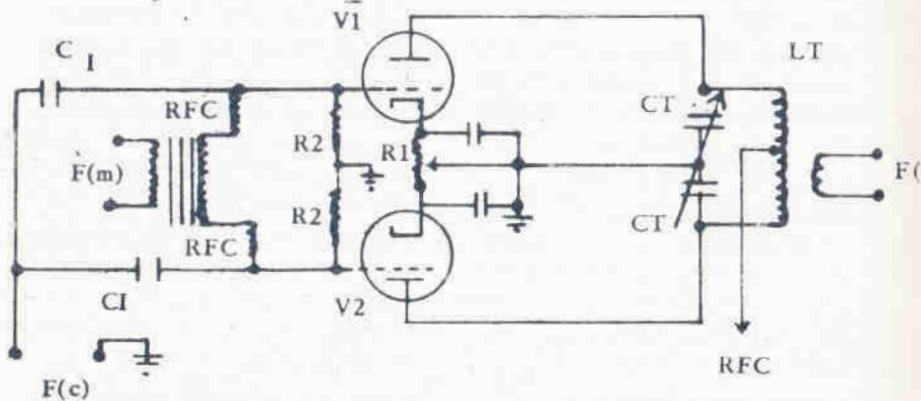
The balanced modulator: Since we have to generate an A.M. signal before we can alter it to get SSB, we can use an A. M. modulator. If two A. M. modulators, or mixers, are so connected that the carrier signals

are equal in amplitude and opposite in polarity at any instant, the carriers will balance themselves out, while leaving the sidebands. This arrangement is known as a balanced modulator. It can use tubes—triodes, pentodes, tetrodes, or pentagrid converters -- or it can use diodes, either of the vacuum or germanium type.

Following is an explanation of one type of balanced modulator. All balanced modulators work on the same general principles. Refer to the diagram.

together. The effect in the plate tuned circuit is that the signals from the two tubes will cancel each other, because the magnetic field in the half of the coil that connects to V_1 will be opposite to the magnetic field in the half of the coil that connects to V_2 . Therefore, if the carrier signal alone is applied to the balanced modulator, there will be no output signal.

Consider now what would happen if the modulating frequency alone was applied to the



A carrier frequency designated $F(c)$ is generated and fed to the grids of the tubes in parallel, through C_1 . The two triodes are perfectly balanced, and in the absence of any modulating signal, $f(m)$ the balanced modulator would act as follows: The carrier signal drives the two grids in parallel. If both grids go positive at the same time, the separate plate currents of the two tubes will increase

stage in the approved push-pull manner. We should have a faithful reproduction of the input signal in the plate circuit, but we don't. The reason is that the plate tank is tuned to a radio frequency, while the modulating signal is an audio frequency. Thus the tank presents no load to the modulating signal and the pulses of audio merely go to the B_+ supply, without causing any signal to

appear at the terminals of the output link coil. But there is an entirely different set of conditions when both the carrier signal and the modulating signal are applied to the balanced modulator at the same time. The carrier still feeds both grids in parallel, but the modulation, fed in push-pull, causes one of the grids to swing less positive than the other.

The difference in grid voltages is equal to the instantaneous peak voltage of the modulating signal. Since the grids are no longer at the same potential, the current in the two tubes won't be equal, and the stage is no longer balanced. Now there will be an output signal from the balanced modulator. But it was shown that the balanced modulator causes no carrier to appear at its output, and it causes no modulating

signal to appear at its output. What then, is the output signal? The output signal is the two sidebands, minus carrier. The power consuming and unnecessary carrier has just been eliminated. The diagram shown is intended for explanation only. If more information on balanced modulators is desired, refer to any of the standard handbooks. There are many variations of the balanced modulator, but all versions depend on the use of non-linear devices, and both tubes and germanium diodes satisfy this condition. Theoretically the carrier can be balanced out completely, but in practice this is impossible. However, 30-40 db. carrier suppression can be obtained. NEXT MONTH: Suppressing the unwanted sideband with a filter.

de KØBHT Harlan Bercovici

BAD COLD?

KØAMM, Curt Hicks, is sporting a new sniffer, another NC-300 receiver. It seems the old receiver had a bad cold and didn't smell much DX and since Curt had a dandy offer at the local parts emporium he made the switch. How does the DX smell up there now, Curt?

DUCK TALK

Bill Kent, better known as webfoot, KØBRS, is sporting a new DSB-100 and it certainly seems appropriate that Bill would be using duck talk. The name certainly seems appropriate now, don't you think so web-foot?

PUERTO RICO BOUND

One of our long lost members turned up in Omaha the other day - none other than Earle Olson, ex-WØJKE, now K9IXZ or something to that effect. Even Earle couldn't remember his modified K9 call so that seems to indicate why we haven't heard Earle on the frequency since he ~~moved~~ out east. Earle ~~was~~ on his way down to Puerto Rico and said that he had talked to the FCC down there about getting the call KP4JKE so the boys up here can recognize him on the air. With the voice Earle has we don't think any call is necessary to recognize him. Earle expects to be in Puerto Rico in about two weeks (August 15th) and operate primarily 15 meters. He was

thinking about one of the Hy Gain trap verticals since it seemed to suit his purpose well being in an apartment building with very limited antenna space. We also learned something from Earle about KP4 land. I am sure you have all heard many fellows signing a KP4 call and saying they are in San Juan but Earle tells me there is actually only about one amateur in San Juan and that is KP4AND on one of the military bases. I guess it is something like Los Angeles and spreads out for miles and San Juan is actually only a very small town itself. We will look forward to hearing you on the air, Earle, and hope that you do get KP4JKE as a call. What call will Marion have?

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The paper put out by the Central Kansas Radio Club, Inc. Has a little notation about Ham Hum and comments on our paper. We do, however, note that they say the write-up about pictures in the paper tells only one-half the story. Watch for the next issue, boys. It's continued and will get the whole story or reduce the pictures to half size.

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We hear by way of Lincoln, Nebraska that the Hy Gain antenna company has a new multiband mobile antenna coming along late this year and the rough specifications we have look very good for those who want an efficient antenna but yet one that will work multiband without stopping the car change coils, etc.

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WANTED!

Progressive manufacturer of amateur radio equipment has opening for the right, practical amateur with ideas and a flair for engineering and design of new products. Interested? Send background, salary requirements, etc., to Electronics, Box 1082, Omaha, Nebraska. Chance for opportunity and advancement.

1958 CLUB PICNIC

This year the Club's annual picnic will be on Sunday, September 14. A site has not been selected as yet though several have been proposed. The location will be published in next month's Ham Hum. Watch for it! The admission will be \$0.75 for each adult and \$0.25 for each child under 12. Food and drink will be provided and all you have to do is show up and devour it. We had a fine picnic last year with about 175 attending. We hope to see some of you from outside Omaha. All are invited. Come one - come all.

WERE MAKING MONEY\$\$\$\$\$\$

Since the club treasury is a bit plush at the moment and money in a checking account isn't doing any good the larger portion of the funds will be transferred to a savings account so it will be drawing interest. Not a large gain but probably \$15.00

to \$20.00 and that will help buy nicer Christmas presents and prizes if nothing else.

NEWLY WEDS

Two of the club's ex-bachelors are now settled a bit. John Orr has a new QTH of 3306 Lincoln Blvd. phone RE 4821. Alan McMillan is located at 554 East 5th (Box 465) Papillion, Nebraska Phone 7721. We have not heard John on the air and don't know if he is set up or will have anything on the air. Al is popping on occasionally, using a Hy Gain vertical for the squitter and a Globe Electronics DSB-100 for AM-CW-SB to push it up the coax.

We note with interest that Auto-Call has had a change in format and the appearance of the paper is certainly improved as well as the quality of pictures. There has always been a lot of interesting information in this publication though the printing did leave something to be desired on previous publications. We also note that Auto-Call has a subscription rate of \$1.00 per year "payable in advance."

Anybody desiring to subscribe to Ham Hum may do so by dropping a card to Post Office Box 626, Omaha 1, Nebraska. P. S. Don't forget the \$1.00.

OPERATION NISHNA VALLEY

Word has come from the Sheriff over at Exira, Iowa stating his thanks for the help of the many amateurs from this area who helped out mobile and otherwise during their flood difficulties over there.

Information regarding this flood and the part the Hams played in it came too late for the last issue. The operation consisted of the usual messages resulting from such an emergency which messages were mostly handled by fixed stations on all bands. The mobiles were used for policing the area to help guard against looting, etc., but mainly to help in preventing the mass migration of sightseers into the area. There was virtually a ring of Hams around the town of Exira. Hams from Des Moines, Omaha and all points inbetween. The best estimate

we can give is between 30 and 35 mobile units. We know of 6 six-meter mobiles and 8 7 meter mobiles from the Omaha area alone. Control stations were set up on a portable basis in Exira on 75, 10 and two control stations on six.

In addition to the loss of life involved in this particular flood, those who were over there were particularly impressed with the great financial loss of some of the people. The six meter Civil Defense gang have decided to contribute to this flood loss by sending in a donation marked "Six Meter" or just plain "Flood"-Box 626, Omaha 1, Nebraska. Any of you who care to further this donation please send in your contribution immediately as we expect to send this money over to the Hams in the area for placing in whatever flood fund they feel will do the most good.

GOSSIP AROUND TOWN

An announcement card brings us information that "Bob" Rudd, WØEUT is now with the John Hancock Company.

Project #1, the 6 meter transmitter is making slow but sure progress. The power supply is nearing completion.

THANKS FOR THE FD SITE

The club is indebted to the Latensers for the generous use of their property on this years FD. A gift is being obtained to show our appreciation; and will be presented to the Latensers shortly.

DX-20 RAFFLE

Several members of the club were recently contacted by Erv Darge, W0MHB who had a DX-20 that was given to him to raffle by members of a Northeast Nebraska radio club. The rig was originally purchased by members of that club for a young Ham of the area that is sightless and recently joined the Ham fraternity as a novice. After consideration it was decided that the DX-20 would not fill the job due to tuning problems. Erv volunteered to help the club get their money out of the DX-20 so they could fix up a more suitable rig with special tuning features. We are happy to report the raffle held at the July meeting of the Ak-Sar-Ben Radio Club was successful and that \$41.00 was obtained. This money goes to the outstate club to furnish better gear for the young handicapped fellow. The DX-20 was won by Harold Petersen, K0IJS. Thanks to all that helped in this worthy project.

See the picture on page 12 of July Ham Hum if you want to know where the expression "BEER BELLY" started.

CORRESPONDENCE

Dear Fellows,

At this time I would like to extend my best wishes to my friends and former fellow members of the Ak-Sar-Ben Radio Club. Since I moved away from Omaha 1½ years ago, I have enjoyed many a 10 and 20 meter QSO with a number of you. Some close friendships were made via means of "ham" radio spanning the distance between the vicinity of Omaha and Seattle and I want to thank all of those who have handled messages and phone patch traffic for me.

My work here in Seattle with the Boeing Aircraft Company in their Electronic Experimental Division still leaves sufficient time for me to operate all bands, 10 thru 75 meters with either 100 or 500 watts on A.M. or C.W. I'll be waiting to talk to any or all of you, whether it be to pass along a message destined for this way or just for a friendly "rag chew."

Every issue of Ham Hum has been thoroughly enjoyed so I am enclosing a small contribution of \$2.00 which I hope will keep the future copies coming to my mail box.

73's

Marvin M. (Marv) Mihulka
K7ANP (formerly W0QAL)
1309 N. 97 Street
Seattle 3, Washington

Hi!

Have been very pleased to receive Ham Hum during the past two years in Arizona and hope this check will in a small way show my appreciation.

Have been on the air here SSB for most of the two years and have worked a number of the fellows in Omaha.

My best wishes to one of the most progressive ham clubs in the country!

Frank Shopen
W7EBG, ex WØWQE
Scottsdale, (Phoenix)
Arizona

NEW BOARD MEMBER

As most club members are aware, our board is now short one member due to the fact Rolly Johnson is going out of town. For several years Rolly has been a very active member and without his help our Novice activity would be far below it's present level. Many thanks for the fine job Rolly and we hope you have the opportunity to attend a meeting occasionally.

At the last board meeting Tom Doll, KØOKS, was proposed as a replacement for the replacement for the remainder of Rolly's term that runs until the end of 1958. Cecil DeWitt made a motion that Tom be contacted and the motion was seconded by Elmer Burt. Tom was con-

tacted by the President and accepted the nomination. With club approval at the August meeting Tom will fill the vacancy.

HAM HUMOR

From MIDWEST CHIRPS, Jayhawk Amateur Radio Soc. Inc. & CQ News.
FIGURES DON'T LIE

The population of our country is about 160 million, but there are 72 million over 60 years of age, leaving 98 million to do the work. People under 21 total 54 million which leaves 44 million to do the work. Then, there are 21 million who are employed by the government and that leaves 23 million to do the work. 10 million are in the armed forces, leaving 13 million to do the work. Deduct 12,800,000, the number in state and city offices, and that leaves 200,000 to do the work. There are 126,000 in hospitals, asylums, and so forth and that leaves 74,000 people to do the work - but 62,000 of those are bums or others who will not work, so that leaves 12,000 to do the work. Now it may interest you to know that there are 11,998 people in jail, so that leaves just two people to do all the work - that is you and me Brother, and I am getting sid and tired of doing everything by myself

UNDER/OVER THE WEATHER

Ray Schroderer, W0AWI has been absent from the bands as of late due to illness. We understand Ray was confined to the hospital for about 6 weeks in June and May. Best wishes for a speedy recovery Ray.

Another local that has been under the weather is George Baughman, W0AFZ, having had an appendix operation and though recovering, still on the inactive list. We hear that George will be putting up a new beam as soon as he is up. An array of two half waves in phase with directors will be used.

A club member of some years ago turned up in town the last of July, none other than our old friend Leo Schmallenbach, ex-W0JFM. Leo has been a world traveler since leaving our fair city a few years ago. Leo works in electronics for the government and spent a few years in KZ5 land (Panama), then a couple in VS6 land (Hong Kong) and when we talked to him he was on his way to ZC4 land (Cyprus). We understand no (W) Hams can operate in Cyprus though we hope Leo may be able to say a few words on the mike of some regular ZC4 Ham that may reach Omaha.

Our one time member Bob, W0EHF is now the proud holder of PHONE DXCC # 160.

Ed Nelson, W0MKP has been working down in Missouri and perhaps that's the reason we have not heard much of him on the air in recent months.

W0JJK, Al is now operating a bit of side band with one of the Globe DSB-100 units and by a King RF amplifier as a linear to 500 watts. With most fellows when they get married it usually puts a crimp in the operating. With Al it seems to be the other way as before he married recently he was very inactive and NOW he is on often. That's a switch!

From the grapevine we hear our old friend Bud Van Horn, W0BUW is going to Germany in the near future. Bud has been one of those stove pipe jockeys for sometime and down in Georgia.

FOR SALE

Elincor 5 el. 2 meter beam
Lysco Antenna tuner
Mobile generator with new brushes for '49 thru '51 Merc.
BC-639A rack mount receiver (v.b.f.) and 115 v.a.c. power supply.

John, W0WRT, RE-1538.

To: Editor, Ham Hum

Having just read the article describing the recent Field Day fiasco as a howling success, I feel that some comment is called for.

Had this undertaking gone under the title of, "The Ak-Sar-Ben Radio Club Annual Ham Fest, Beer Bust and Overnight Camp-out," then there would have been no question concerning the success of the venture. However, assuming that it was supposed to have been a FIELD DAY, the results can be only described as a dismal, desolate and complete failure. That a club as richly endowed with superb equipment, camping gear and choice locations as ours is should come up with so laughable a score is utterly unthinkable.

From all, I have been able to read in QST, I am led to believe that Field Day is an exercise designed to promote razor sharp operation under emergency conditions and is not primarily designed to provide clubs with an excuse for an annual outing. From what I observed during my 30 hours on the FD site, no more than a mere handful had any inclination to do any serious operating, and/or any real hope of turning in a score that the club as a whole could be proud to claim. A good successful FD is a lot of hard work, and the fun comes from

the after glow of pride in a job well done. Anyone who thinks that the club can be proud of that measly 200 or 300 contacts has been misinformed. With rigs on all bands, with all the operators that showed up, we should have a minimum of 1000 contacts, bad bands or not. Other clubs do it and some of them are not as well equipped as ours. The difference is that they take the enterprise *seriously*.

No one will argue the fact that we all had some fun out there, but I am afraid the real purpose of Field Day needs to be re-established in our minds. You don't have to be grim to be efficient and the last thing I would advocate is making a chore out of Field Day. However, regardless of how fine the equipment, the camp site and the conditions, without the incentive of a good competitive spirit, there is little hope that next year will produce any better results than were had this time. It's not a question of, "Can we do it?" but a question of, "Do we really want to do it?"

Yours for a better showing next year,

Dick Reimund

WØLFM

We are considering paid advertising in Ham Hum in the very near future at reasonable rates and we are very interested

hearing from anyone who would like space to advertise their product or service. There will be very nominal rates for amateur advertisement and extra special rates for club members on advertisement of a non-commercial nature.

On six meter activity we find that WOYZV, Dick, now has 45 states worked and 44 states confirmed. How are you other fellows doing on six meters? We like to keep tabs on the VHF activity as well as the lower frequencies so drop us a note so we can let the other fellows know how VHF is doing at your QTH.

Sometime ago Max McKinney, WOYVV, told us that when he got his DXCC certificate for 100 countries he was going to quit burning the midnight oil but when W0NKG talked to him at the last club meeting and told him about a real rare one in the wee hours of the morning Max got flustered and said, "Why didn't you wake me up?" Make it easy, Max, you have your DXCC now!

We understand Orin Miller over in Council Bluffs has a new Hy Gain tri-bander beam up on top of his pole to accentuate the signal from W0SEE. Previously there has been quite a conglomeration of antennae up there on the sky hook.

By the time this issue of Ham Hum reaches you there will be a mailing of the new roster. We know there are a few errors which we have tried to correct. However we would like very much to hear from you if you find an error on your call, address, phone number, or anything so that we can have this information to correct the next roster.

We received a nice card from Elwin L. Coolman of Plattsmouth, Nebraska, KOMUF, (maximum useable frequency?) and Elwin tells us he received his first issue of Ham Hum and enjoyed it very much. We will be happy to send you the August issue free of charge, Elwin. However to continue regular mailing the nominal subscription rate is \$1.00 per year. Just drop your dollar in the mail with a note that it is for a Ham Hum subscription and send it to Post Office Box 626, Omaha 1, Nebraska, so we can keep sending the paper along to you.

**OFFICIAL BULLETIN NR 660
FROM ARRL HEADQUARTERS
WEST HARTFORD CONN
JULY 3 1958 TO ALL RADIO
AMATEURS BT**

U.S. amateurs wishing to operate in Canada and Canadian amateurs desiring to operate in the U.S. are reminded that they may secure authorization to do so. U.S. amateurs should obtain, fill out and file forms through Telecommunications Division, Department of Transport, Ottawa, Ontario, Canada. Canadian amateurs must obtain, fill out and file forms through Secretary, Federal Communications Commission, Washington 25, DC. Appropriate authorization will then be issued by the government agency concerned and should be shown to customs authorities at the border. Write for forms well in advance. More details on across the border mobile work appear on page 9 of April 1957 QST AR

**OFFICIAL BULLETIN NR 661
FROM ARRL HEADQUARTERS
WEST HARTFORD CONN
JULY 10 1958 TO ALL RADIO
AMATEURS BT**

All amateurs who took part in the Field Day held June 28 and 29 are reminded to report their results, whether large or small, to ARRL. Entries must be post-
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marked by July 26 to assure listing in the QST final report AR

**OFFICIAL BULLETIN NR 662
FROM ARRL HEADQUARTERS
WEST HARTFORD CONN
JULY 17 1958 TO ALL RADIO
AMATEURS BT**

Announcement is hereby made of the addition to the ARRL Countries List of Chatham Islands, which are located in the South Pacific approximately 420 miles east of New Zealand. DXCC credit will be given starting October 1, 1958 for creditable confirmations dated on or after November 15, 1945. Further details appear on page 83 of August QST AR

Dear OM's

Enclosed dollar is for a year's subscription to Ham Hum. I rented out my place in town and am living on 80 acres 1/2 mile north of Washington. It is the place with the long row of evergreens on the drive into the place. I still have my station set up in Omaha but have only been on 40 CW a couple of times since I moved in April. Please send future copies of Ham Hum to Box 75, Washington, Nebraska.

73's

Elmer, WQPZB

Take note of the 10th ARRL National Amateur Radio Convention to be held in Washington, D. C., August 15th through the

1. Attendance is expected to reach about 5000 Hams, electronic engineers, industry engineers, technicians, servicemen and students. There will be exhibits from leading manufacturers, distributors, dealers and branches of the military - all the latest equipment - ancient equipment and other items of interest to novice and oldtimer alike. See if you can't convince the boss there is some important business in Washington, D. C. on those dates.

John Orr, WØPHW, tells us he would get on the air but with three rooms it makes operating a little difficult. I guess you had better look into these new transistorized rigs, Johnny.

**OFFICIAL BULLETIN NR 663
FROM ARRL HEADQUARTERS
WEST HARTFORD CONN
JULY 24 1958 TO ALL RADIO
AMATEURS BT**

Radiation of harmonics by amateurs in violation of FCC rules (continues to require attention. To avoid violations, FCC urges newer amateurs especially to make sure their transmitters are tuned to the desired output

frequency and not to any harmonic. All amateurs should also have others nearby check their signals for harmonics and send work to any heard in the 11, 5.4, 7.4 Mc or other frequency ranges. Corrective measures should be taken where necessary. The Handbook and several QST articles bear on the subject. Consult the December QST Index for these. Also note the article in August 1958 QST on antenna couplers for avoiding radiation of harmonics and other spurious signals AR

Lee Trefl, formerly W5GG, now has the WØGG, and no doubt you'll be hearing his signal on all the DC bands from over in Council Bluffs.

Always enjoy reading "Ham-Hum".

The "Single Side band Series" very interesting. Hope you include some constructional ideas on this subject as I'm an old "design and build" addict.

Enclosed find my "buck" to help with postage, etc. (Uncle is going to increase the rates, don't you know.)

73 es Tnx

(Dick) R. E. Bowman

WØWZR

1115 Potash

Alliance, Nebr.

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

NEXT MEETING
AK-SAR-BEN 4-H BUILDING
AK-SAR-BEN FIELD
AUGUST 8, 1958
8:00 - SHARP

BULK RATE
U.S. POSTAGE
Paid
Omaha, Nebr.
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