HAM HUM

AK-SAR-BEN RADIO CLUB

AK-SAR-BEN
RADIO CLUB
INC.

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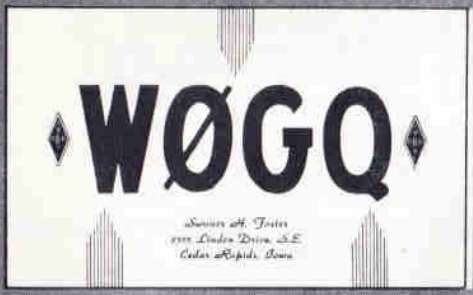
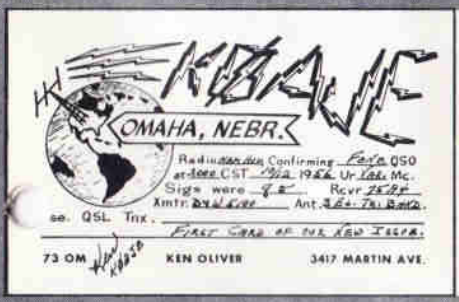
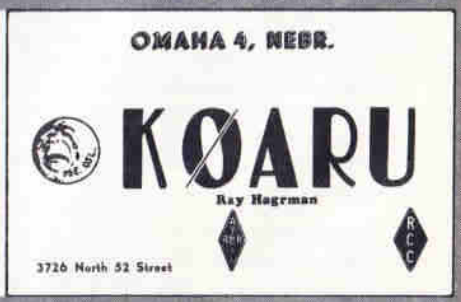
February 1957 P.O. 626 Omaha 1, Nebr. Vol. VII No. 2







Ham Hum

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Omaha 1, Nebraska
Editor---Art Stadler WØQMD

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.

A. R. C. TVI Committee goes to work

Under the title "TV Balks? Radio Amateur Possibly Hamming It Up," the following item appeared in a recent issue of the Omaha World Herald. This is the first action of the new TVI committee operating under the direction Hugh Tinley, KØGHK, and ably assisted by a group that are bent on working out the ever increasing complaints.

If your TV picture breaks out in something that looks like modern art and your sound features unwanted conversation, you're having amateur radio operator trouble.

Don't commit mayhem on your "ham" neighbor, Paul Hampton, Federal Communications Commission representative from Kansas City, Mo., advised Wednesday.

The difficulty can be solved with a $4 filter on your TV set, he said.

Mr. Hampton said complaints of hams interfering with TV reception begin to grow in the fall and reach their peak on winter evenings and week ends when the amateurs are busiest.

Of any 10 complaints of amateur interference filed with the FCC, nine can be traced to TV receivers that can't keep out local signals, Mr. Hampton said.

The ham can't be forced to stop operating, he said, but the filter will stop 99 per cent of the interference.

Mr. Hampton suggested an easy test.

If the ham can operate his own TV set while transmitting, he can't be causing trouble several houses away.

Omaha's 150 hams also can come through in some radios and hi-fi phonographs, Mr. Hampton said. A filter can usually cure this trouble too.

If the filter won't work, Mr. Hampton suggests writing Omaha's Ak-Sar-Ben Radio Club, P.O. Box 626. It has been authorized by the FCC to investigate and report TV interference complaints.

Mr. Hampton said one of the most curious cases of interference he has heard of happened in Omaha.

The ham tied in with the radio-operated garage doors in a Fairacres home. When he turned on his transmitter, the garage doors would go up and down.

Mr. Hampton is in Omaha giving Federal licensing examinations to radio amateurs and technicians.

Standing Waves

This subject has been written about in every electrical text book ever published. It is covered in all electrical handbooks, and articles have been written about it many times in electrical periodicals. It is doubtful if anything can be written on the subject that would be new and certainly not from a fundamental approach, which is all that can be done here. However, it is possible that by repetition we may bring about a better understanding of what Standing Waves are, the conditions under which they exist, simple methods of detection, and adjustments which can, for the most part, reduce them.

Standing Waves or S.W.R. to the power-man is "Power Factor", or reactive power on a line. It is the power consumed in an inductive or capacitive circuit and is expressed as $W = EI\cos\phi$ where ϕ is the phase angle; that is, the angle of lag or lead of the current I. The term $\cos\phi$ is the term called power factor.

There are three conditions that can exist or tend to exist in any transmission line. It may be shorted or tend toward the shorted condition; it may be open or tend toward the open condition; or it may be infinitely long or appear to be infinitely long.

If we consider the first two conditions, either a shorted or open line, we find the line to be very reactive. Either capacitive reactance or inductive reactance will be indicated, determined by the length of line and the frequency of power transmitted. In either case, the S.W.R. is high, no useful power is transmitted, and considerable heating of the line and generator will occur.

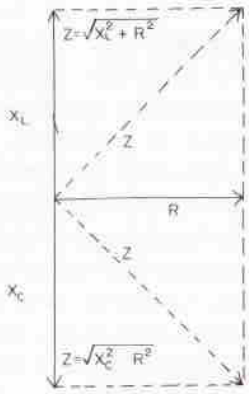
To use a common analogy, let the open or shorted line represent an oral channel terminated by a solid wall. A sound wave generated at the sending end of this line will travel down the oral channel attenuated at constant rate, until it strikes the solid wall. At this point the wave of sound energy is reflected and, after traveling back up the oral channel, may be detected by the human ear as an echo. The wave energy was reflected due to the difference in transmission media or, to say the same thing in another way, it was reflected due to the change in impedence. The ratio of transmitted to reflected

wave energy is proportioned to the magnitude of the difference of impedence of transmitting media. If the wall is smooth enough and hard enough, nearly all the wave energy arriving at the wall will have been reflected. Now if we cause a continuous wave of sound energy at constant frequency to be sent toward this wall and then start walking down the oral channel, we will find points each wave length at which the sound is stronger and points at which the sound is weaker. If we have an instrument to measure the difference at these points we will be able to determine the standing wave ratio. This ratio is determined by dividing the indicated signal strength read at the strongest point by the signal read at the weakest point; for example 100:5 = 20:1.

Now it happens that the transmission of power is a function of impedence, and the standing wave ratio is not only an indication of reflected power but also an indication of the magnitude of the impedence discontinuity. In fact, if the S.W.R. is 2:1 then the impedence ratio is 2:1, etc. This is a handy relationship to know since it is relatively easy to adjust our generator, as will be shown, for connection to a line, but it is not always as easy to adjust our line load, which is the antenna, to the impedence of our line.

Let us stop here for a minute for another simple statement or two which we will not attempt to prove. First, it should be realized that impedence is a voltage/current ratio. For example, 105 volts at 3 amps = 35 ohms or 105 volts at 15 amps = 7 ohms, etc. Why is it important to know this? Because 105 volts at 3 amps 315 watts. If it is desired to transmit this power of 315 watts over a 35 ohm line, it is necessary to have the generator adjusted to generate 105 volts at the terminals of a 35 ohm load to realize 3 amps through the load. Second, we must realize that the impedence we are speaking about is a resistive impedence and not reactive impedence. This comes about by the fact that although all the circuit elements we are dealing with are made up of reactive components, capacity and inductance, they are all adjusted to resonance, or at least should be, and therefore reflect nothing but resistance. (See Figure 1)

This is a relation with which we are all familiar. At resonance the inductive reactance is equal to, but in exact opposition to, the capacitive reactance, resulting in a purely resistive circuit.



$$Z = \sqrt{X_L^2 - X_C^2 + R^2}$$

AT RESONANCE $X_L = X_C$ THEN

$$X_L^2 - X_L^2 = 0$$

AND $Z = \sqrt{R^2}$

$$Z = R$$

FIGURE 1.

Since the desirable operating conditions have now been established, how do we adjust a circuit for these conditions in practice. (See Figure 2)

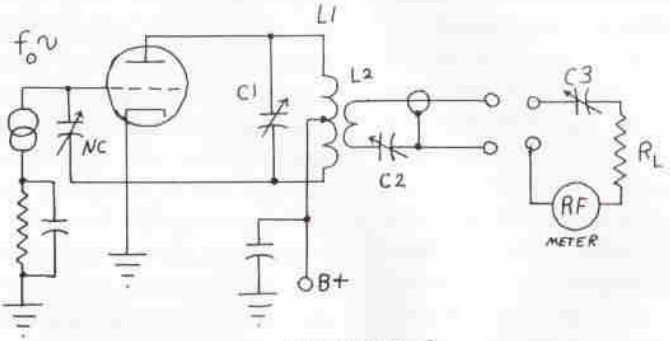


FIGURE 2.

This is a triode arranged as a nutrilized Class C amplifier and driven at source frequency Fo. The plate circuit C1 - L1 is adjusted to resonance "you know how", an RF ammeter is placed across the terminals of L2 - C2 the link circuit, and L2 is very loosely coupled to L1, just so that a reading is indicated by the RF meter. Now C2 is adjusted until maximum current is indicated on the RF ammeter. The current may rise beyond the scale limits of the ammeter during this adjustment so if it does, reduce the coupling of L2 so that I

can be read easily on the meter. Now check C1 - L1 for resonance. It should still be resonant if the coupling was not too close. If it is still resonant we now have a resonant system up to the terminals of the generator and the next move is to load the generator.

First, however, we want to be sure that the load is really a resistance and not a combination of X_L as well as R. So, unless you are absolutely sure the load resistance is "pure", put in C3 as shown in Figure 2 and connect C3 - R_L and RFM as shown across the output terminals of the amplifier. Adjust C3 for maximum current on RFM which will establish resonance of the load which should now present a pure resistance to the amplifier. By the way, R_L should be a resistance equal to the line impedence you intend to use to feed your antenna, and capable of dissipation of the power output of your amplifier, i.e., is your power output is estimated at 100 watts and the line impedence is 52 ohms, the resistor should be at least 100 watts or more and the resistance should be 52 ohms. We are now ready to couple the load to the amplifier. If all circuits are resistive per previous adjustment, move L2 into L1 until rated amplifier loading has been attained. Slight detuning may occur due to capacity between L1 and L2, so re-adjust C1. Never overload your amplifier by over-coupling; you gain nothing but trouble.

With everything adjusted to resonance you may be a little surprised how little coupling is required.

Right here, if you desire, you may determine the efficiency of your amplifier as follows:

Amplifier input is: $I_p E_p = W_{in}$

Amplifier output is: $I^2_{RFM} R_L = W_{out}$

Amplifier efficiency in % = $\frac{W \text{ out}}{W \text{ in}} \times 100$

Now disconnect C3 R_L and RFM from the amplifier output (after turning off the power, of course) and connect your transmission line to the output of the amplifier. Take the load C3 R_L and RFM out to the far end of the transmission line and connect it to the transmission line all by itself. No antenna: I repeat, no antenna--just the load. Now turn on the amplifier again and check the reading of RFM. It should read the same as it read at the output terminals of the amplifier, less the loss of the line. (You know how to determine the line loss.) OK now if you wish to find out what the S.W.R. is, do it by using a piece of split line, even if you

have to build it yourself. Put a probe in the line with an indicator in it, slide it up and down the section and there you are--an almost flat line.

So far so good, but what does the input of your antenna look like? Is it a balanced or unbalanced input? Is the antenna tuned? Is the impedence at its input the same as your line and is it as resistive as you can make it? "Them is the questions."

Well, let's get started here. First, decide what kind of a line you are going to use to feed the power to the antenna - balanced or unbalanced - and what the impedence is to be. If the antenna has a balanced input as some horizontal beams do, and you have decided to use RG8U for the line, decide upon some type of balancing device to place between the line and antenna and install same. Now take the RFM out of the C3 R_L load we have been using and connect the load across the open end of the balancing device. Place an RF voltmeter or voltage indicating device across this load as in Figure 3.

If your antenna has been properly designed for the load impedence of your line, if your balancing device is satisfactory, and if your antenna is tuned, exciting the antenna by a signal from a nearby antenna will cause a maximum R.F.V. indication on the meter and nothing you can do will improve it.

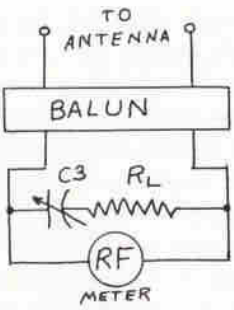
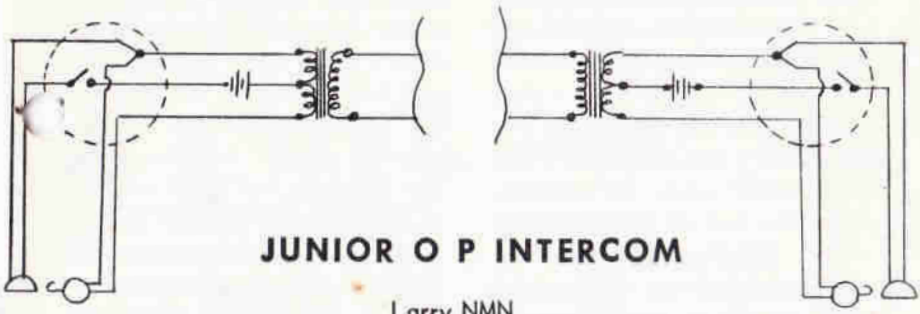


FIGURE 3.

If such is the case, remove the load, connect the transmission line and turn on the transmitter. The final meter readings should be very near the same as they were when you had the C3 - R_L - RFM load on the line. To check for S.W.R., again slide the probe up and down the split line. If care has been used, your line should be at least 1.5:1 or maybe better. If it isn't, you know what to do!

"Herb" WØQXR



JUNIOR O P INTERCOM

Larry NMN

Look through the old junk box again. Do you have a couple of T-26 Chest Units laying around picking up dust and mold? Here is a little project that will hit with the junior operators. This unit is a salvage from the old army switchboard field units and can be procured at any surplus store for a very nominal cost. The transformers are also switchboard salvage. (Interstage transformers will function equally as well.) Normal line impedance of the transformers is 500 ohms, however, this is not critical. Communications can be maintained over several miles of line very conveniently. Perchance above type chest unit is not available, one can be made up from any carbon mike and a pair of headphones. The battery potential is supplied from three (3) flashlight batteries in series or a single 4½ volt battery.

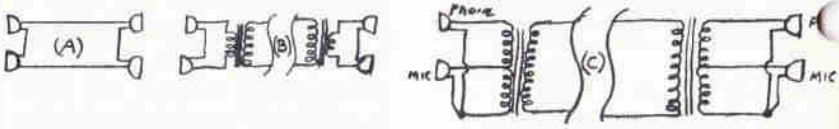
If you happen to have an HS-30-R headset laying around, the circuits below will also delight the youngsters. This unit is comparable to the sound-powered equipment and requires no batteries or switches, and at close range requires no transformers.

Circuit (a) functions excellently at close ranges up to several hundred feet. Circuit (b) utilizes a standard output transformer. There is no particular advantage in this circuit over that of (a) above with the exception of providing isolation between the phones and the line. In some instances this is desirable.

Circuit (c) utilizes the switchboard transformer or an interstage transformer with center-tapped winding. Particular attention should be given in connecting the phones. The mic should be connected from one side of the primary to the center-tap thus taking full advantage of the voltage gain provided by the increased turns in the secondary. The earphone unit which is used as the receiver should be connected across the full windings of the transformer,

thus picking up the high output.

Since these circuits are relatively simple, nothing further need be said. The idea is here. Take it from there.



NEW INHALER

WØMKP, Ed Nelson has one. 75 A-4 by number, Collins by name. Guess Ed wanted to hear all that rare stuff. We hope the new RX is doing the job, Ed, even on the Donald Duckers.

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At the February meeting there will be a demonstration on the operation and design of Multiband Antenna Systems. The talk and a demonstration will be by Andy Andros, WØLTE, President of Hy-Gain Antenna Co., Manufacturers of WRL Beams. Fundamentals of Multiband operation using trap circuits will be discussed, accompanied by a unique demonstration. A question and answer period will follow the talk. We believe that Andy is a very qualified person to point out the features and advantages of various type antenna systems. Hy-Gain has a staff of competent design men and an antenna test range ideally suited to disclose the true features and capabilities of a particular antenna design. By constant design and test, Andy feels that there are many features that can be used in present antenna design to improve operation. We feel sure that the talk will be well worth hearing, so be at the February meeting and find out how to make that RF work for you.

****

Red Faces

Wow! Did you see the red faces at the last meeting! There were a lot of people that thought they knew every ham in this area until the Prez called upon the first row to start introducing the guys and gals to his right giving their name and call. It's funny how some people will sit and yack for hours at a time and never know the person they are talking to. That was the situation at the January meeting for only a few were able to identify more than their immediate associates. Better be careful or this new guy AM will have us knowing every person in attendance. But. . . . .is that bad?

****

Sh.h.h. . . .the dust blew, the soldering iron came out of the box, and once again JJK is back at the perrenial and historical job of building his dream child . . .that coveted kilowatt! We've snooped and peeped through keyholes and by this process have learned that Al has the big fat power supply just about wrapped up. It looks like he will get the job done this time so you better get out the cotton box, stuff your ears 'cause that pair of 4-250A's are about to put out a mighty sig on

****

IT DIDN'T HAPPEN!

With watch in hand we stared at the sweep hand as the moment neared for the new President to live up to his promise of getting the meeting started at the scheduled hour. It was 7:59 plus 30 as AMM walked to the lecturn, picked up the gavel and took a stern look at the 60 sets of eyes that so intently focused on him, each with the same question in mind. Then, with upraised hand he had a change of heart and again it didn't happen. Not until 8:08 did he get under way, so once again the late starts are with us. But I guess we will all have to admit that he did do a lot better than those who preceeded him. Once the meeting did get going it was like old times. . .Gripes, Yakkers, neardonnybrooks but all in the spirit of the issue before the group. It was a good meeting and if you didn't attend you are the loser.

****

CORRECTIONS TO ROSTER

Mashek, Bill	1729 So. 86 Ave.	TE1123	WØCPM
McMillan Alan	Box 465 (Papillion)	-4431	WØJJK
Haley, Ed	Valley, Nebraska		WØPQP
Gutmann, Ed	2340 So. 34	WE3665	WØCQX

ADDITIONS TO ROSTER

Fox, George	2532 Madison (Bellevue)	BE1573	WØAEM
Fried, Rolly	3035 Curtis	KE6882	WØYMU
Hicks, Dorothy	5315 Blondo	RE0299	KØBRZ

here's the story on TVI

Complaints are received from a variety of sources but mainly from. . . .

. . .the viewer

. . .the amateur who has found a local condition impossible to handle.

. . .the TV stations

. . .the FCC

The complaints themselves are channeled through Hugh Tinley. He records them and directs a letter on club stationery to the viewer, a sample of this letter is in this month's "Ham Hum." This letter outlines specifically the responsiblity of the viewer and points out the four step procedure recommended by the FCC. A copy of the letter goes to the amateur involved and a copy goes to the member of the committee who will make the inspection of the TV set and the amateur's equipment. The committee member will complete a report which reflects the situation as he finds it plus his recommendations. From the standpoint of the amateur his case will be largely judged by his ability to operate a TV set in his own home while his transmitter is being operated on the bands causing the viewers difficulty.

The report when completed will be returned to Tinley, photostat made for the club's permanent file and the original sent on to the FCC in Kansas City. The FCC tells us our reports carry the same weight as made by one of their representatives. Briefly we have the FCC solidly behind us and will have as long as we respect the confidence they placed in us.

Omaha has been divided into seven districts with two members of the TVI committee handling each, one district in the northwest part of town is staffed by only one ham.

This TVI committee was created for YOUR benefit, if you have a problem that baffles you and if you're sure your transmitter is "clean" use the committee and get their report on file in Kansas City ahead of the viewer. Bear in mind that the committee is staffed by individuals like yourself who like to spend time with their families and on their own rigs; so don't work them to death. Handle your own TVI until you reach a point where you're stuck and then call for help. If you run into a problem, call Hugh Tinley, he has the particulars.

AK-SAR-BEN RADIO CLUB, INC.
POST OFFICE BOX 626 · OMAHA 1, NEBRASKA

We were sorry to hear you were receiving television interference. Possibly our club can be of some assistance to you.

If you are confident the difficulties you are experiencing are traceable to a radio amateur, our recommendation would be to discuss this with the amateur in a neighborly fashion. With cooperation on both sides, this problem is amazingly simple to lick.

It is understandable that few television viewers are experts in either television or radio; for that reason when interference occurs it is difficult for them to know which way to turn. Here's the four step procedure recommended by the Federal Communication Commission.

1. Assure yourself first that the interference is caused by a radio amateur.

2. If the disturbance is caused by a licensed amateur, discuss it with him and ask for his recommendations. Normally a $4.00 filter will solve the problem. The cost of this filter must be borne by the television viewer. This filter is a component part of the TV set that is sometimes left out by the manufacturer.

3. If you question whether the interference is the fault of your receiver or of the amateur's transmitter, ask the amateur to operate his transmitter while you are watching his TV. The FCC feels that when this can be done without interference, the amateur's equipment is not emitting uncontrolled spurious signals.

4. Have your service man install the filter.

The FCC has asked our club to investigate television interference problems and report its findings. If your situation has reached a point where a deadlock has occurred, we suggest you call the individual listed below. He will be glad to pass on his suggestions and make a report to the FCC. As he is operating in the public good and without pay, we know you will receive him courteously.

CALL:

Sincerely yours,

HLT:ch

H. L. Tinley
Chairman TVI Committee

cc Federal Communication Commission

Letters to the Editor

Dear Editor,

I was just reading your January issue of Ham Hum and Dick Bilon's name and Address in Ham Hum and I wish you would change it by printing it over again in your next issue and mentioning my name too. His address is 5 Nugent St., New Hyde Park, New York. I also live in New Hyde Park.

I would also like to inform you that I enjoy reading your issues of Ham Hum each month. Thank you. . . . 73s

Joseph Lofreddo
K2PVB

****

Ham Hum:

Quote from NON-PAREIL Council Bluffs: "Ata Radio distributors meeting one distributor said as a distributor I find three things against me; Aero-Mycin, Strepto-Mycin, and Leo Meyerson.

Hi.

JJK

****

Dear Editor:

In Grand Island we are not QRT nor QRU, however we are QRL. We are trying to shape up some kind of an emergency setup here with the Civil Defense people but it seems to get tangled up. Had a fine Christmas meeting at WØLEP's house DW's talking with his hands, LEP yakking, BTM doing both and CC got mighty fine mobile. KBY is in net don't you all hear? BUD just bought new car gotta make 6 do 12/

73

U. L. Lynch Secry.
GIARS

Say how about getting that "Beef State" changed to "Ham State"?

****

I feel a little guilty that I have never written in thanking your fellows for having me on the mailing list. I really enjoy reading Ham Hum and knowing what the gang out there is doing. You might mention to the boys that I am 20, 15 and 10 c.w. and 'phone with a KW and one of Leo's three band beams.

I usually call DX but tell the boys to pay no mind. DX up here means anything past a non-toll call.

73,

Lew McCoy, W1ICP
ARRL

****

Dear Mr. Treasurer,

Here's my club dues for year 1957. See you all in about six weeks.

Windy
ØNPA

****

1030 East Lee St., Apt 1
Tucson, Arizona
January 3, 1957

Dear OMs:

I would like to have you change my address on your records so that I may receive Ham Hum down here. I am on the air here with my mobile rig mounted in the house, and am useing my whip for an antenna, running 65 watts mostly on 10, have not heard any of the Omaha gang down here, but then I am not familiar with most of the new calls there.

Enclosed find my dues for 1957, and the best 73s to the whole gang.

Guy R. Bailey, WØKJP/7

****

79 Bregman Ave.
New Hyde Park, N.Y.
December 17, 1956

Dear Editor of Ham Hum,

To anyone who is interested I will build for $3.00 an antenna coupler for 80 through 10 meters for a long coupler to a transmitter.

Yours truly,
Joseph Lofreddo

P.S. I enjoy Ham Hum.

Dear KØBRS:

On bended knee we beg your forgiveness! You have not failed to fulfill all necessary obligation for membership! Please come back! We BEG YOUR forgiveness. We need YOU. In plain language....I just flubbed, cause I forgot to put your name in the Club roster.

****

Ja ever hear of "GDI"? Thats the latest problem that confronts some of the hams in Omaha. In the event you do not recognize the abbreviation, it "Garage door Interference." On AM the door goes into a fluttering wave, but on SSB it merely moves in one direction. Guess that's another plus for the ducksters!

****

Al Wyland, INR, is on the air with a new Viking Valiant, working fone on all bands. . . 160 through 10. Al spends most of his time on 10 but will be looking for the Omahans on 75. Check in or around 3940 if your wanting a QSO with Henningford, Nebraska.

****

WXG, Bob, is the kind of person that gets a kick out of attending the ARC meetings. Although Bob is attending the EE school at Ames, Iowa, he hopped on the train Friday afternoon, arrived in Omaha in time for the meeting and headed back to school on Saturday morning! It was good seeing you OB, and hope that you can get into the meetings more often.

****

TO BE OR NOT TO BE

Yep, once again that was the question before the assembly at the last meeting. And. . . . once again, the answer was NO! For sure, there are those that still feel that the Club house is a necessity, but the majority rules. Keep trying, fellows, it may come to pass.

IT HAPPENED IN OMAHA

New TVI Chairman (Tinley): "Relax, Coop, you can forget TVI."

Old TVI Chairman (Cooper): "Hurray!"

Tinley: "Yep, send any beefs to me, we're in gear."

Cooper: "Are you sure?"

Tinley: "Yes, have you got any new ones?"

Cooper: "Yep."

Tinley: "Who's the ham?"

Cooper: "You."

Tinley: "/*/!!**&*!"

Stations operating with OPERATION SKY BLAZE included the following: WØQMW, WPQ, YMU, WRT, UIO, CQX, NAC, EQK, KØBRZ, AMM. This is the annual Christmas tree burning sponsored by the Kiwanis Clubs of Omaha.

A happy and prosperous 1957 to AR Club. Congratulations on your efforts to build an organization devoted to the best public service traditions of amateur radio.

73 - SUM
WØGQ
Vice Director ARRL

"Friends—If you like gay good food, live entertainment, come to the Tropical Room, Ritz Hotel . . ."

VHF by Millard, WØNRT

6 METERS

On January 21st there was an aurora opening on 6 with several of the Omaha gang working into eastern and northeastern Iowa and Minnesota. Would you like to list regularly the progress toward WAS.? Drop your score on the enclosed card to P.O. Box 626, Omaha.

CHK and FRN now have 40, EXS 34, YZV 30, and what are the rest of you doing?

2 METERS

Well, Lincoln must have taken us seriously, for as little John, WØWRT, says WØDIK, WØOHP, and WØNOW, finally back on 2 and can be read in Omaha.

WØFXH at Mead is being heard every now and then. WØOXY over at Creston, Iowa has been worked by FKG, and the Omaha gang. Also WØLEF, Otto, out at Brainard, Nebraska, has been worked from Omaha.

On January 7, 1957, KNØHKE at Norfolk, Nebraska, checked in on the 2 meter CD net, not Q 5 but readable. KØGRL and KØWDC has been heard and worked on 2 - His QTH - Offut Air Base.

WØWRT, John Snyder, has promised an article on 2 meter station design including better converters, with lower noise figures and some comments on old but necessary 100% AM modulation. It seems the audio gain control has to be run too high on some strong carriers in order to read the modulation. Remember, the carrier is a neccessary evil only to operate the detector, talk power is in the side bands produced by adequate, clean modulation.

WRT reports with so much intermodulation interference experienced from the two TV stations, it is most advisable to use conductive coupling between as many stages of the converter as possible - a quarter wave open stub is very helpful on the input of the converter or receiver and should be cut for channel 3 or 6 attentuation. WRT is using a co-ax T fitting and approximately 32 inches open stub at the antenna connection for Channel 3 attenuation. This stub does not bother the 2 meter signals and is more than worth the effort.

1¼ METERS

Four stations in Omaha are now on 220 - WØFRN, YZV, VGL, KØCKS. Weather too cold to put up antennas.

a "Gold Mine" of equipment for a few "Coppers"

I am enclosing part of the list Mr. Chase itemized for me, and have added some of the items we discussed. I hope this will give you the information you need for the ad. With the exception of Mr. Edgerton, I didn't get any response, but perhaps the next one, with better weather and prices listed, will do it. Thank you.

Gertrude Baer.

FOR SALE

Hallicrafter SX 28 short wave receiver - super sky grader - $100.00.
Eico Scope model 425 5" - $30.00.
Hallicrafter SX 15 - $25.00.
15" field type speaker - output transformer 5-6-7 - $10.00.
Variably frequency oscillator with power supply - $10.00.
Astatic microphone model DN hi impedence - $8.00.
3 Eimos tubes 304 TL - $6.00 each.
Tool Box - $5.00; 8" Jensen PM speaker with output transformer $5.00. Assorted tubes 50¢ to $1.00.

5 Ohmite model J 125 ohm rheostats $1.50 each, Transformer and chokes 75¢ - $1.00 2 Ohmite 25W 1500 ohm $1.00 each, 2 0-5 AC amps Triplett model 331 - $2.00 Assorted crystals 50¢ each 2 6x9 speakers $1.00 each 12" field type speaker $2.00, 3 7" National dial ACN vernier dial $2.00 each plus other items - bushing, sockets instrument cases, racks, etc. at give-away prices.

See Gertrude Baer, 833 So. 55th Street or call REgent 1572

Ham Humdingers

HAM HUM will publish free of charge for non-commercial amateurs your HAM wants, swaps, or items for sale. All ads should be limited to 25 words or less and must arrive 2 weeks prior to the second Friday of each month for inclusion in the current issue. Send ads to HAM-HUMDINGERS c/o Box 626, Omaha.

FOR SALE:

Collins 75A-3 receiver	$345.00
Hallicrafter R-46 speaker	12.00
Johnson Viking 2 transmitter	200.00
Johnson VFO	30)00
Johnson Matchbox	30.00
Astatic DK-1 mike & stand	12.00
Johnson swr bridge	6.00
Vibroplex "lightning bug" key	10.00
Woodstock standard keyboard typewriter	30.00

Also numerous other small items. I will make a special on the receiver and transmitter if they are sold together.

William F. Brown, WØEUU,
514 Harrison Street,
Topeka, Kansas,
Ph. 46449

FOR SALE: Sears 10-inch bench saw complete with attachments.

Dick WØYZV

FOR SALE: Leaving town - 1 BC610E Complete. 1 power transformer and 1 mod. transformer for BC610E.

Lee Beckley WØSRR

FOR SALE: 40 Meter Rcr. with 3 tube 6 meter XTAL converter built-in $20.00. For further information call or write Jerry Knight, 8825 Edgevale Place, Omaha, Nebraska. TE 1630 - WØWSN.

Understand Lee WØSRR is taking on a new business in Northwest Iowa first part of February.

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

NEXT MEETING
AK-SAR-BEN 4-H BUILDING
AK-SAR-BEN FIELD
FEBRUARY 8, 1957
8:00 PM - SHARP