



HAM HUM

May 1962

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PROGRAM FOR MAY

Next meeting will be held on Friday, May 11th, at the 4-H Building, Ak-Sar-Ben Field at 2000 C.S.T. We will hear about computers, particularly Burroughs, by Ken McCord who is the local representative of the Burroughs Corporation. He will bring us an interesting story about some of the things computers can do and are doing. And, whereas we don't wish to imply you each should get a computer of your own in order to help the Junior Op with his arithmetic, the whole computer subject is very interesting and Burroughs is one of the major companies in the business.

Also on the program we will have a commentary on the Institute of Radio Engineers by J. A. Rogers, Chairman of the Omaha-Lincoln Section, and H. W. Becker, Editor of their bulletin. The IRE will celebrate its 50th birthday as an organization May 13th, 1962. Our members have frequently been invited to attend some of the functions of IRE and we do have a number of members in common.

This to be followed by the usual eyeball QSO and refreshments. We

undoubtedly take the refreshments too much for granted. It is a lot of work to see that we have our usual coffee, doughnuts and orange drink each meeting night. Why don't each of you thank the food committee while you are busy drinkin' up at the next meeting. The food committee at the present time consists of Ed Donze, WØYEV, Al Hofgaard, KØTUS, and Duane Gerry, KØUIA. They are handling the refreshments for May, June and July. We will try and give you names of others as they are assigned. If you care to take a turn at the refreshment committee we would appreciate your help. See Ed Gutman, WØCQX.

THE TECHNICIAN

If you are interested in receiving a copy of "The Technician" which as the name implies covers interesting items for those with Technician license, a subscription for a year is \$2.00. Mail your \$2.00 to The Technician Magazine, Box 465, Billings, Montana.

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.



Several new calls are being heard on 2 meters these days, and as far as that goes, many amateurs have come and gone from the 2 meter band. Some of these fellows have been very disappointed in operating or maybe we should say, trying to operate on 2 and being unable to often hear anything. Such a condition is naturally discouraging to anyone and there are several valid reasons why this happens. First and foremost is in attempting to get good results on 2 meters without a decent antenna. We must bear in mind that most fellows who are accustomed to operating on the DC bands have many times just 'thrown up' any old length of wire, loaded their pi-network transmitter into same and were lucky enough to get fair results. This might happen frequently on 80 or 40 meters but when this procedure is attempted on 2 meters, their luck runs out.

What is a good 2 meter antenna, then? The various publications such as the 'VHF Handbook' by Orr and Johnson or 'VHF for the Radio Amateur' by Frank Jones go

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into great detail to describe suitable antennas for 2 meters and no attempt will be made to repeat this information here. Briefly, the best design types appear to be either the long-yagi or the large collinear type of array and we might add, the larger the better; for instance, at least 8 elements of long-yagi design or at least 16 elements in a collinear array.

I would certainly discourage anyone from wasting time trying to do much with a ground plane vertical. The ground plane is a good antenna for its intended purposes; however, they have little place in amateur 2 meter work in general.

Many good commercial designs are available for 2 meter work, among these being, Cush Craft, Telrex, HyGain, UHF Resonator and others. Most of these antennas are very inexpensive compared to the cost of a typical 20 meter 3 element beam.

Another important thing in working 2 meters is of course the receiver or converter system. Now this always brings up the question of G.I. surplus receivers such as

(Continued on page 4)



PREXY

SEZ—



By Royal Enders, KØLYO,
1962 Club President

CQ CQ DE KØLYO BT

The Board of Trustees is faced with a problem involving not only a member of the Board, but one of the four Officers of the Club. Our Board member and Treasurer, Larry Schumacher, KØSJD, employed by the Corps of Engineers, is being promoted and transferred to Atlanta, Georgia. Naturally, he has resigned and, with regrets the Board was forced to accept his resignation. We, the members of the Board, are searching for a replacement and we will probably submit our recommendations to the May membership meeting.

At the May membership meeting you will be asked to volunteer a contribution to the ARRL Building Fund. March QST presented an artist's sketch of the proposed new building to take care of the expanding ARRL services and staff. Many of the affiliated clubs, such as Ak-Sar-Ben Radio Club, Inc., have made contributions to this fund, and it is the desire of the Board that our membership be asked to contribute to this most worthy cause. Many of our own

memberships have already sent in a contribution in the name of our Club.

Read the May issue of QST! There is an editorial report on the building project, and information on the expected total costs of building and equipment. ARRL will acknowledge individual contributions with a certificate along with the Club acknowledgments. There is a blank subscription form in that issue, and we hope that you will fill it out and bring it, along with your check, money order or the cash, to the May meeting at Ak-Sar-Ben Field, 4-H Building, on Friday, May 11th. Don't forget, ARRL represents us to Congress, to the International Radio Treaty Convention, and in many other gatherings of the people who can and do decide the future of amateur radio.

Prexy is donating one year's ARRL dues plus Club dues to the Building project. If every ARRL member did the same, we could build and equip the new ARRL building without going in debt or floating

bonds. Don't misunderstand me, this will be purely voluntary on your part. The Ak-Sar-Ben Radio Club, Inc. will *not* make an assessment on the members for this very important project although we ask you to help as much as you can.

ARRL Field Day comes in June - in fact, June 23-24. Call Glen Swanson, KØJQX, and let him know the band or bands you would like to operate. We will report all of the activities to ARRL and thus Omaha will get some recognition for our efforts and accomplishments.

Ed Gutmann, WØCQX, reports another fine program will be presented at the May membership meeting. Again, we ask, please use the land-line and call some other member or some ham and ask him (or her) to be your guest at the May meeting. The June meeting promises some real fun. It will be purely social, with a potluck dinner, and such a recreational evening! Look for Ed's formal invitation in the next issue of Ham Hum. Prexy wants to meet all the YL's and XYL's along with all the Junior Ops.

More membership applications still coming in - how about you? Can't you get some more applications for the Club so that we can really develop amateur radio in this community and the surrounding area? Tell your contacts in QSO's about Ak-Sar-Ben Radio Club, Inc. and its activities; tell them about the excellent programs being presented at the membership meetings; tell them about the wonderful pancake suppers, the entertainment meetings, the Field Days, the annual picnic, the auction, our activities in behalf of Red Cross,

The National Guard, the Civil Air Patrol, Civil Defense, and that we stand ready to help any community in our area which might experience an emergency. In other words, SELL Ak-Sar-Ben Radio Club, Inc. every day and night. Let's make this the best Ham Club in the U.S.A.

73 CUL AR SGD ROYAL KØLYO

FOR SALE

Johnson Ranger II, factory wired, mint condition, only used about 12 hours, about three months old - \$275.

Nine screw anchors about 12 inches long with handles - \$1.50 each. Ideal for Field Day and emergency field use.

M. W. Costello
4714 No. 81st St.
Omaha, Nebraska
Phone: 393-2087

(Continued from page 2)
the SCR-522 or the ARC-5 VHF receiver etc. Let's face it; these receivers were engineered many, many years ago and are no competition for the low noise, high gain tubes and parts of recent years, particularly since the advent of TV. So, in other words, these receivers might better be used for a boat anchor in case any of you are so inclined.

As an afterthought on antennas, we might mention something about height and from my own experience I don't believe it is necessary to have the antenna tremendously high. 35 or 40 ft. off the ground will suffice in most locations. FB to go higher if you can afford it.

73, WØWRT

John

By John W. Orr, WØPHW
RTTY Editor

As you know, Amateur Radio is a well diversified hobby. It encompasses a wide range of human interests from the pure sciences to public service. Within this range is the interest of mechanics and electronics integrated in Amateur RTTY. A mixture of mechanics and electronics makes a very interesting phase of Amateur Radio, a phase which is also very useful for communication. Up to now most of those having an interest in RTTY have built equipment the hard way. They have developed their own circuits and equipment arrangements. There is little store-bought equipment available for the RTTYer, but this is really not a bad situation. There are only a few phases of our hobby which are not dominated by the kit type Amateur; RTTY is not.

This is the first of a series of articles on RTTY which may answer some questions and provoke some questions. These articles are also intended to create some interest in this phase of our hobby.

RTTY is the name adopted for the phase of our hobby which employs a machine to transmit and receive pulses. The pulses are generated quite often by a typewriter-like keyboard. The signals are received and printed on paper much like a typewriter. There are several manufacturers of these printing machines and their associated equipment. One of the most prominent is the Teletype Corporation and the word Teletype is

their registered trade-mark. We may not use it except to refer to their equipment.

The signals produced by a machine such as the Teletype Corporation's Model 15 keyboard are standard for most machines, and consist of two conditions: current and no current. These two conditions result from opening and closing contacts. At rest, the contacts are closed and with a voltage applied produce a current. As a key lever is struck the contacts will open and close several times producing a series of pulses corresponding to the code of the particular key lever struck. These current and no current conditions are referred to as mark and space conditions, respectively.

The code consists of five pulses each, either mark or space, that is to say either current or no current. Mathematics tells us that when we have five pulses of but two conditions the total number of combinations possible will be 2 to the fifth power or 32. Of these 32 possible combinations we use 26 for the letters of the alphabet. The remaining six are used for operations other than printing and are called functions. One function is used to return the carriage at the end of a printed line. Another to line feed, that is to advance the paper up one line. Of course one function code must be used to respond to the space bar. One function is used to shift into upper case and another to shift back

into lower case. The remaining sixth function code is used as a control function and is called blank, but more about that in later articles.

Preceding the five coded pulses for each character is always a pulse called the start pulse. This pulse is always a space pulse or no current pulse. This pulse is used at the receiving machine to start its reception of the following five coded pulses.

At the speed of 60 words per minute, the legal Amateur RTTY speed, the start pulse and each of the following five coded pulses are 22 milliseconds long.

Following the five coded pulses is a stop pulse. This pulse is always marking; it is a current pulse. Irregardless of the condition of the last of the five coded pulses the stop pulse is always marking and returns the circuit to the idle condition of marking. The machine is then ready to send the next start pulse.

The stop pulse is a bit longer than the start and code pulses. It is approximately 31 ms. long. The time, therefore, required to send one character, including start pulse, five coded pulses and stop pulse, is 163 milliseconds.

These pulses are produced by the rotation of a motor driven cam on the keyboard and contacts which ride on the cam. The cam makes one rotation for each character sent. As it rotates it first opens a set of contacts for 22 ms. producing the start pulse. At the end of this 22 ms. interval the first of the five coded pulses would be produced. It would be either a cur-

rent or no current pulse and lasts for 22 ms. also. (Note: if it were a no current condition the total time of no current would then be 44 ms., start pulse and first code pulse.) The next four code pulses would in turn be produced and finally the stop pulse would close the circuit. The circuit would remain closed (mark condition) until another key were struck.

These keyboard contacts may be connected in series with the receiving magnets of a receiving machine, which with 60 milliamps of current flowing through the circuit, operates the receiving machine. The contacts might also be used to operate a relay. The contacts of the relay could replace the hand key contacts of your CW transmitter. The carrier of the radio transmitter could be turned on and off corresponding to the machine code. This is one simple method of transmitting signals from a Teletype keyboard (See chart p. 7).

Before we delve into transmitting and receiving arrangements we will, next month, describe how the receiving machine operates. If you are presently interested in Amateur RTTY or are now operating and have any specific difficulties we will be glad to attempt to answer questions. Selected questions and answers will be printed each month. Please address your questions to:

Ak-Sar-Ben Radio Club, Inc.
RTTY
P. O. Box 291
Omaha 1, Nebraska

TELETYPEWRITER CODE

M=Mark=Current pulse
S=Space=No Current pulse

LOWER CASE	UPPER CASE	1	2	3	4	5	LOWER CASE	UPPER CASE	1	2	3	4	5	LOWER CASE	UPPER CASE	1	2	3	4	5
A	-	M	M	S	S	S	L	3/4	S	M	S	S	M	W	2	M	M	S	S	M
B	5/8	M	S	S	M	M	M	.	S	S	M	M	M	X	/	M	S	M	M	M
C	1/8	S	M	M	M	S	N	7/8	S	S	M	M	S	Y	6	M	S	M	S	M
D	\$	M	S	S	M	S	O	9	S	S	S	M	M	Z	"	M	S	S	S	M
E	3	M	S	S	S	S	P	0	S	M	M	S	M	LINE FEED		S	M	S	S	S
F	1/4	M	S	M	M	S	Q	1	M	M	M	S	M	SPACE		S	S	M	S	S
G	&	S	M	S	M	M	R	4	S	M	S	M	S	CAR. RET.		S	S	S	M	S
H	STOP	S	S	M	S	M	S	BELL	M	S	M	S	S	LETTERS		M	M	M	M	M
I	8	S	M	M	S	S	T	5	S	S	S	S	M	FIGURES		M	M	S	M	M
J	,	M	M	S	M	S	U	7	M	M	M	S	S	BLANK		S	S	S	S	S
K	1/2	M	M	M	M	S	V	3/8	S	M	M	M	M							

IRE MEETING

The Institute of Radio Engineers invited members of the Club to a meeting to see and hear about lasers. Frederick G. Suffield, Head, Advanced Laser Applications, Research and Development Division, Aerospace Group, Hughes Aircraft, Culver City, California, gave the demonstration and quite a number of our members enjoyed it very much. Our thanks to IRE for inviting us.

6 METER OPENING

We were informed at the last meeting by our Minnesota visitor that 6 meter band is open on May 26th each year. Let's tune in on May 26th and see if he is right. The way he told it sounded about as regular as the swallows at Capistrano. Sorry I don't have his handle and call at this time. If the band is open we will look it up. If not...

PRIZE WINNER

Bud Drobish, W9QVA, of Hallcrafters, has announced that Richard Bischoff, WØQVA, has won the second prize in the Hallicrafters SSB-VHF contest. The prize consists of an HT-37 or a HA-2 and P-26 combination or a HA-6 and P-26 as a result of entering the contest at WRL. Al McMillan says, "It pays to be a WRL customer." Congratulations to Dick!

ADDITIONAL HINTS FOR JUNE 8

Ed Gutman, WØCQX, has announced hint #3 as follows: Pot luck, square dancing, twist contest for the flexible, additional surprises. Mark your calendar now for the June 8 meeting at the General Motors Training Center. Visitors welcome - bring the family - no age limit or minimum.

VIEWS AND COMMENTS

by Owen Blankenship, W3ENU
23 Greenwood St., Odenton, Md.

There are many things to be said about Amateur Radio and an equally good number of fine things which could be said about those who pursue this great hobby. We like to hear these kind words... "the Amateur is this, that or the other thing." We sit back and smile knowingly when some one praises Amateur Radio because, after all, aren't these things true? And in a similar vein we are prone to braggingly say "our radio club did such and so" after a particular noteworthy event.

But as the rain falls on the just as well as on the unjust, there are both good and bad aspects to Amateur Radio. It is easy to accept compliments, great to be on the winning team, and extremely comfortable to sit back and reflect only on the good things. Just for a minute let's consider a couple of thoughts, which aren't too pleasing. These are DOUBLE STANDARDS and APATHY.

Probably the most damaging thing to Amateur Radio (and this might well be applied to a great many other hobbies) is the set of DOUBLE STANDARDS that we are beginning to let rule our actions. This could be an all day sermon in and of itself, but time and space do not permit. Let me give you some examples. How many times have you put an unmodulated carrier on the air for the purpose of showing a friend "how the rig loads up"? It's okay for you to do so, you theorize,

but don't let the other fellow try it. How many times have you put out a CQ without checking the frequency? Talk about DOUBLE STANDARDS!! We are quick to criticize (and justly so) the fellow amateur who gives a Novice or Technician exam without going through the formality of the code test. Yet have you ever given the exam to a friend who you knew was quite proficient in cw and decided that because of your knowledge of your friend's ability it would not be necessary to give that portion of the test? If so, you are guilty of DOUBLE STANDARDS. And how often have you moaned and groaned because so many checked into the local net with "QRU and out after roll call"? Now be honest-haven't you on some occasion done the same thing? So, it's okay for you but wrong for the other fellow. See what I mean? These brief examples only scratch the surface; you can list a hundred others. We do have DOUBLE STANDARDS. We don't like them, but we do little about them. All of which brings me to....

APATHY. An insidious disease has infected the ranks of Amateur Radio and threatens to choke off the true spirit of the hobby. The attitude of "I couldn't care less" which seems to be permeating the hobby is rewarding each of us with conditions about which each of us gripe. For example: Did you return your survey card (several months ago) to ARRL

concerning the allocation of Amateur bands? Too busy? ... Bosh! plain old APATHY. Have you expressed your viewpoint to the ARRL Director in regard to League activities?

APATHY again. How about that project at your Radio Club which needs man power so badly? Couldn't care less? Yep! it's APATHY. Ad infinitum.

Even if Hiram Percy Maxim should reappear and write a thesis on the subject, it is doubtful if any sweeping reform movement would be

initiated. However, if each of us would tackle our own shortcomings, one at a time, as a long range program, it might well be that over a period of years we might begin to reduce our DOUBLE STANDARDS and at the same time change our attitude of APATHY to that of interest. It is our hobby, and it is what we make it.

73, Blank, W3ENU

de Auto-Call

THE OLD GROUCH

c/o The AUTO-CALL, 2509 - 32nd. St., S.E., Washington 20, D.C.

Extended monitoring of some of the inane and sometimes obnoxious exchanges of remarks which have occurred on the 28 megacycle phone band between a group of younger operators, frequently including "shack guests," located within the area on influence covered by the Foundation for Amateur Radio, indicates that there is a total lack, on the part of this group, at least, of appreciation of the provisions of Section 12.0, FCC Rules and Regulations governing our Amateur operations. Section 12.0 outlines five principles expressing the fundamental purpose of the establishment of the Amateur Radio Service. Underscore the word SERVICE; the specific group referred to above, and plenty others overheard on various frequencies from time to time cannot, by any interpretation of their operations, be credited with serving any of the five principles set forth in the FCC Rules!

Expanding the charges which I submit above, distinct violations of

the provisions of FCC Rules 12.157, 12.159 and 12.160, relating to the use of obscenity, indecency or profanity, failure to identify transmissions and intentional interference with the transmissions of other stations have been observed. Suffice it to say that the FCC is fully informed regarding some of these violations and is monitoring the operations involved from time to time preparatory to corrective action. Unfortunately, the provisions of the Communications Act relating to secrecy of communications prevents furnishing tapes for review; some juicy sessions have been monitored! Whether the FCC was monitoring or not at the specific times involved is unknown, but if so, I would cringe at the probable result.

Fortunately, by far the great majority of amateur operators follow our hobby with a fair adherence to the principles set forth in FCC Rule 12.0;

(a) Many, many operators are affiliated with one or more of the

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I WAS HERE FIRST

When was the last time you worked someone on 10 meter CW? When was the last time you even heard someone on 10 meter CW? You say, "What good is it - that band is dead everytime I want to use it?" You better stop right now - and think out loud, for that's the way we lost our 11 meter band, and not so long ago.

If you think the bands are crowded now, next year they can be worse. Remember we can't buy frequencies. The bands we have are much smaller than they used to be, and truthfully, we must admit that we are not using what we have very intelligently. Are you guilty of saying, "I was here first," instead of the polite QSY to another frequency? Did you ever think to to QSY to another band to carry on that ragchew with the guy across the street? How about a little 2-way CW practice (we all need it), where the bands are wide-open for local contacts, but closed to DX? Yes, that takes humility, I guess, but only the brave have that.

Seriously, unless we do something constructive on our bands TODAY, our little ole ham radio can soon be on it's way out, as a minority hobby. The old timers sense this, witness the fewer, and fewer "W" calls heard each day, Our only salvation is the public service and good-will we can give the nation and our community. I'm sure we all know this and no lecture is needed on this subject.

What I do want to talk about is, "More Intelligent Use of Our

Bands," as opposed to this new attitude, "I Was HERE First!" It is true, Nets must have a net frequency. We must realize that nets operated with a purpose are performing a humanitarian service, and if operated properly tie in a large segment of stations which might be all over the band, even on TOP of YOU. No official sanction has ever been given to any net in the amateur bands, that I know of. By popular use and with popular consent, over these many years, Florida has "enjoyed" a few private (?) frequencies, which we have called, "Our Net Frequencies." Let's not abuse this privilege when the net is not in operation; being a net operator does not entitle us to private use of same, just to keep the frequency hot from someone else. A polite QSY, instead of cranking up the power, will be a lot better on everybody's ulcers.

Now the most deplorable part of our present predicament of crowded bands is that apparently we do not realize that a rapidly growing segment of our nation's electronic hobby seekers are going CB instead of ham radio. Legal or not-legal, they are persuing this mode of communications as a hobby. They are demanding more power as a cure for their own interference. Worse, they are asking for more frequencies (our frequencies. They can't do this? If put to a vote, their superiority in numbers and utilization of their present frequencies, might surprise you. We have come a long way since 1912, we have worked hard to hold

the few frequencies we still hold. Remember, we once had command of everything below 200 meters (1500kc). We got bumped around a little with our 40 meter band, but managed to hang onto most of it. What happened to the upper end of the 10 meter band, 29.7 to 30 mc? What became of 14.4 mc? How about the whole 160 meter band in Florida. And now the sore spot, our old 11 meter band. Why did we lose it? Well, 200,000 CBs think it's pretty attractive, and so do the manufacturers, and so do our dealers, and they will admit it out loud. Wished we could have thought of dividing it up in "spot" frequencies and occupying the whole band instead of hanging on the low end, or the high end, where all the pile-ups are.

Remember now, we still do this. Listen on any UHF band. Where is everybody? Why - the low end of course. Most of us would rather be caught dead than off the same old frequency everybody else uses. I suppose you could call it a good-neighbor policy for everyone to get on the same frequency and chew the fat with the whole gang. Far be it from me to want to bust up a lot of happy families. But, are we happy? Don't we get a little tired of the same old stuff, on the same old frequency? Let's move around a bit and occupy the band. Maybe more HF boys will see the light and come and see us more often. This goes for all bands as well, let's get out of these pile-up areas and leave them for the DX boys.

No place to go? The bands full up? Your looking for DX anyway Brother, DX is where you find it,

words get around fast. Remember, YOU ARE DX to somebody else, if he is far enough away. He is just as eager to locate you and he probably has a lot more patience. The trick is to let it be known in DX circles that you use this thing called "key," you know, CW. He'll probably think you are a "Vanishing American" but he will be eager to look for you if he knows where to look.

Spend a little time listening on each of the bands, learn to feel how band conditions are from day to day. Don't get frantic and jump on the first pile-up you hear and start calling a hundred CQs. Remember, some of the best DX is when the band is going dead, or is it really dead? Try this on 15 in the late and early evening, take turns snooping for elusive DX if you want, but most of all enjoy our hobby to the fullest extent. Learn to use our bands intelligently, and spread the word to your friends.

de Florida Skip



MAY
15th

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April 17, 1962
Humboldt, Iowa

Amateur groups which foster emergency communications in the public service, AREC, RACES, MARS, etc.

(b) Similarly, experimentation and testing by amateurs have done much towards the advancement of the radio art.

(c) The advancement through the various continued practice in procedures and new methods of transmission by amateurs enhances and improves the amateurs' skills.

(d) The growing number of active amateurs, evidenced by the growth reported by the FCC in the number of licenses issued each year, helps to expand the reservoir of operators. Whether they are "trained" as specified in the principle as expressed in Rule 12.0 depends on the degree to which the older and more experienced amateurs are willing to take the time and effort necessary to assist in their training.

(e) The enhancement of international good will is, fortunately, very basically being effected by every amateur who operates with DX accomplishments in mind.

In order to save me from the charge that I look only on the bleak side of our hobby interest (unfortunately there are so many phases of that dark side), let me say that, altogether and in the broadest sense, we are doing a pretty good job of it; I criticize only the non-conformists who exhibit an abnormal degree of selfishness and disregard for the interests and feelings of others.

The Old Grouch.

Dear Sirs:

I heard this story on the air the other day and thought I would pass it along to you. I don't know who started it or even who I heard tell it, but here it is nevertheless. You might title it "Bedlamp Rebellion." It seems this amateur was testing his kilowatt rig late one evening shortly after his new neighbors next door retired to bed. The new neighbors had just moved in and this was their first night in their new home. They had just turned off the fluorescent lamp above the bed and pulled the covers up when the lamp came on. He got up, juggled the switch a little and the lamp went out again. A few minutes pass, the lamp comes on again so this time he gets up and pulls the plug and it goes out. He mumbles something about the switch and returns to bed. A few minutes later, you guessed it, the lamp comes on again. Well, about this time he's so disgusted with the thing that he rips it off the headboard, trots it outside the house, and deposits it in the garbage barrel. Hi-Hi.

73, KØKGQ
Frank Brodale

P.S. I really enjoy Ham Hum, especially the last issue with the article by KØAFG who lives ten miles south of Humboldt.
