



# HAM HUM

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No. 7

July 1964

## FIELD DAY 1964

Field Day has again come and gone. As usual, we learned a lot, discussed solutions to problems, and the only question now remaining is what are we going to do about Sioux City and Bellevue? Your editor has not yet received a detailed report of the result of Field Day. However, the first rumor came in that it was a close race between Sioux City and Ak-Sar-Ben with Ak-Sar-Ben on the short end by about 200 points. It was also rumored that had the receiver on 15 meters stayed on a few minutes longer an opening would have been observed which could have gotten us a couple hundred more points. The next rumor stopped all of this fancy sort of thinking, self-pity, or whatever it might be called, as this rumor said Bellevue beat both of us. Perhaps we can get the figures together for next month and learn just how badly we were beaten. At any rate we find ourselves in the position of

saying, Congratulations to Bellevue! We wish them all the luck in the world and will do our best to beat them next year along with Sioux City.

This brings us right back to the same point - what are we going to do about Field Day next year? Listening to the difficulties, it seems the biggest difficulty that must be solved is to eliminate or at least alleviate the adjacent transmitter interference, particularly that interference between CW and Phone as this seemed to be of considerable bother to the operators. All modes and all bands are important to chalk up a good score. What we need now is a small group, possibly three, of interested members to tackle this problem. It can be solved. Other clubs have solved it. Over the past few years there have been a number of articles on solutions. But in order to solve the problem it does

(Continued on Page 3)

**NEXT MEETING - AUGUST 14**  
**4-H BUILDING - AK-SAR-BEN FIELD**

**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.



## PRIORITY "TWO"

Misclassification of traffic took place after the Alaskan earthquake. Personal inquiry traffic is rightfully "P" but precedence-wise this is the same as the traffic of similar type regarded as more important coming out. There's need for a distinction but we can hardly take 50,000 copies of Form 3 out of log books already in hands of users! What to do?

As an interim solution at least let's agree that in any similar situation the INGOING personal inquiry traffic will be P2 (priority two) while notification traffic outbound will continue to rate the full P (priority) treatment.

Mark up your CD Form 3 if you will (second par. under 'precedences') that in the event of any emergency ALL PERSONAL TRAFFIC GOING INTO A DISASTER AREA should be P2 (not P) to designate it from other precedences. de ARRL

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Still have some older issues of Radio-Electronics to give away to anyone interested. Some good reference material here. I need room. Call John Snyder, W0WRT, 556-1538.

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## FOR SALE

C-D Powercon Vibrator Converter, Model No. 12SH20, Input 12 Volts DC, Output 110 Volts AC, Watts Cont. 200, Watts Int. 250.

Repl. Vib. 12VD6H, Asking \$40.00 or make offer.

Interested in crank-up type tower also.

Joe Humphrey, K0ABN  
Box 98  
Valley, Nebraska 68064

\*\*\*\*\*

I had a Little Mike

I put it on the air,  
Where my voice went  
I do not know where;

I screamed, pleaded and begged,  
From spring till chill of fall,  
Still I got no ans.  
To my mournful call;

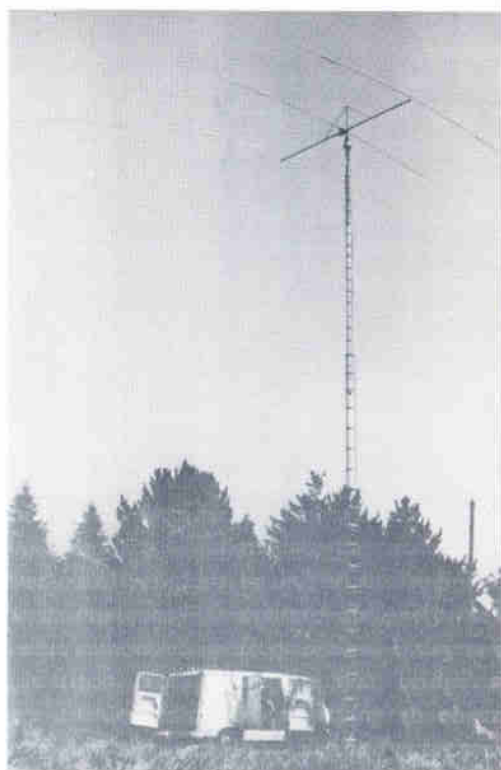
On 2 meters I was  
So green and new,  
So I just kept calling  
CQ, CQ, CQ;  
Barney,  
WA0CMK

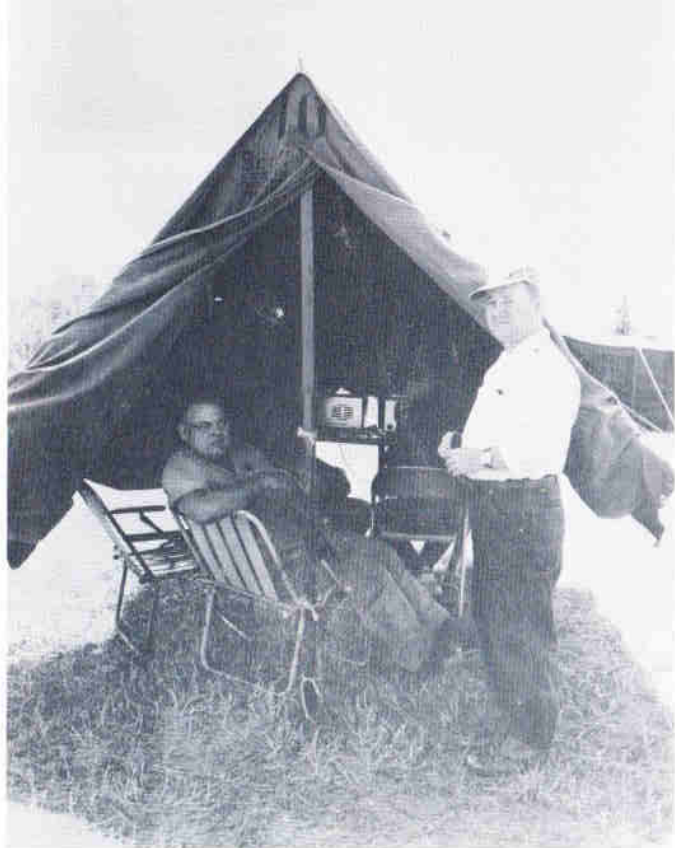
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take some effort prior to Field Day week. It cannot be solved at the time between Friday night set-up and Saturday afternoon starting time.

Several of our members have the ability to solve this problem if they will only get together and do a modest amount of work during these next few months between Field Days. If you are the one to help, please send in a card to Box 291 with a statement you would like to serve on the Field Day Interference Committee. There's only 10½ months until Field Day. Let's get started now.

Again, we send our congratulations to both Bellevue and Sioux City and at the same time congratulate our own members on a very high score which enabled us to get third best out of three - but with a real high third. We did real well - it just happened they did better.







Field Day photos by Erv Heinz, WAØEEM

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**FOR SALE:**

Model 26 teletype machine and AFSK converter. Call Ray Vickland, KØBTZ, Mobile Communications Co. 341-1529.

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**FOR SALE:**

2 meter ground plane antenna, never used. Master Mobile mfr. \$5.00. John Snyder, 556-1538.

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Dear Editor:

I have surplus 2 meter transceiver power supply and beam - for sale nice clean Sx99--also Tech 6er and power supply--1 inverter--1 vibrator.

Grandma Lou, WØCCD  
556-4139

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**FOR SALE:**

Heath Kit Sixer with Mobile Power Supply and Mike; 30 foot Telescope Mast Antenna Tower; 10-meter bow tie antenna WAØEEM Land Line: 553-2033

E. D. Heinz

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## THE DISASTER STORY

The Alaska disaster shows that it can happen HERE. Constant preparedness is our only answer to the possible needs for amateur stand-by circuits in the event of disaster. The FCC can 'declare' an emergency, specify the area, the bands or sections of bands in which it becomes contrary to FCC Rules to operate *except* for the emergency and emergency-organizing traffic.....But the plans to follow to minimize interference, the skip distance problem, the hot line skeds to be initiated at once for agency-official traffic, the stepping up of operations and offering the pattern to agencies in advance, needs discussion before disaster hits.

The biggest thing we learned from the Alaskan disaster is that disaster communication is a two-way affair. Too often outgoing traffic is clobbered by untrained operators trying to jam "inquiry" traffic in...against the wind! Operators must learn that the most useful service they can perform (usually) is to keep the transmitter off the emergency frequencies.

Another thing we learned was that we cannot depend on any one mode to handle all emergency traffic from an area. SSB stations frequently consumed much valuable air time (it's all valuable when limited commo is available) due to a need for use of phonetics and repetition. CW nets were doing especially well and cleared up to one message per minute per orig-

inating station. Rtty stations had message numbers up in the thousands after the first day.

*Every* ham should be familiar with the following facts...even if they don't personally want to train for possible disaster commo:

1. *Organized* hams in a disaster area always try to conduct their traffic by way of stations in the National Traffic System to insure that operators with experience will be taking their traffic. Alaskan stations, in general, tried to maintain contact with RN7 and RN6 when skip conditions permitted and depended upon these people to relay, by way of the Transcontinental Corps, to the destinations. AI K7NHV, and others locally, burned the midnight oil as official relay stations. (Now you know why KL7s ignored your "break break".

2. Welfare inquiries ("Is Aunt Minnie OK") should always be referred to the local Red Cross - usually the disaster committee - who will be up on what landline and other means are available for transmittal. We have a working agreement with the Red Cross so that, when our facilities are needed, they'll call on us. Inquiries here were handled by air transportation to Anchorage and the resultant answers were back in short time in most cases. Several thousand answers came back by ham radio. Look at this another way...Hams at the disaster scene could, at best, handle only a handful of inquiries...no way to get the word

out of their station...only 116 phones in operation in the entire area...But the Red Cross information collecting stations were able to deliver hundreds of messages to each station for transmission back to the 48 'Southern' States.

3. Local leaders in the Red Cross, Civil Defense, Police, Sheriff, etc., *expect us*, as hams, to be able to provide communications control stations at the strategic points, to provide mobile units, and, most important, to provide high efficiency and reliability of communications under all conditions.

While much hindsight and quarterbacking can always be done in these emergency situations, those stations who were really involved deserve plenty of applause ....and a resolution adopted by the California Legislature gives just that..."congratulating members of the American Radio Relay League on their performance in providing emergency communications during the Alaskan earthquake."

de Yellowstone Radio Club  
- "Splatter"

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#### FOR SALE:

48 ft. concrete mount Globe spire tower - excellent cond. \$80.00. Also have a AR-ZZ rotor & control, will accept any reasonable offer for rotor.

Joe Berounsky KØQDB  
3227 Seward St.  
Omaha, Nebr. 68111  
Ph. - 551-0647

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#### OFFICIAL BULLETIN NR 951 FROM ARRL HEADQUARTERS NEWINGTON CONN MAY 21 1964 TO ALL RADIO AMATEURS BT

Canada and Peru have signed an agreement permitting the exchange of communications on behalf of third parties between amateur stations of the two countries. Stations cannot accept compensation, and messages should be of a technical or personal nature where recourse to public telecommunications services would not be justified. The new agreement, effective immediately, is in addition to previous Canadian agreements with the U.S., Venezuela, Costa Rica, Honduras, Mexico, Chile, El Salvador and Bolivia. The U.S. list remains as shown in March QST AR

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#### OFFICIAL BULLETIN NR 962 FROM ARRL HEADQUARTERS NEWINGTON CONN JULY 23 1964 TO ALL RADIO AMATEURS BT

In recent years, amateurs have been electrocuted and others have suffered injury, caused by the failure of bypass capacitors in the primary circuit of AC power supplies. This type of accident can be avoided by the use of a common ground system linking all equipment chassis to a water pipe or other good ground connection. Send a stamped self-addressed envelope with a note to ARRL requesting a copy of the Safety Code. Address your request to the ARRL Communications Department, 225 Main Street, Newington, Connecticut 06111. Switch to safety and stay alive AR

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Potluck Supper -  
July 10 - Riverview  
Park Pavilion

Photos by  
Erv Heinz, WAQEM



**OFFICIAL BULLETIN NR 958  
FROM ARRL HEADQUARTERS  
NEWINGTON CONN JUNE 25 1964  
TO ALL RADIO AMATEURS  $\overline{BT}$**

At the conclusion of the 1964 Field Day, June 27th and 28th, clubs and individuals are urged to promptly report their results to ARRL. Page 48 of June QST gives the proper form for a Field Day summary. This must be accompanied by Field Day logs and postmarked no later than July 27. Photos of your setups and comments on your activity are welcomed. Please mail by July 27 to ARRL, 225 Main Street, Newington, Connecticut 06111  $\overline{AR}$

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**OFFICIAL BULLETIN NR 960  
FROM ARRL HEADQUARTERS  
NEWINGTON CONN JULY 9 1964  
TO ALL RADIO AMATEURS  $\overline{BT}$**

By report and order in Docket 14267, FCC has amended section 97.87 of its rules to delete the requirement for c.w. or phone identification of the station being called by an amateur station using facsimile, TV or RTTY. Thus, the dual identification of the transmitting stations henceforth can be by automatic means. FCC suggests keying speeds less than 25 wpm and shifts greater than 100 cycles for this automatic identification. The amended text is similar in language to that shown in the appendix, page 63, March QST. Full information will appear in the September issue of QST  $\overline{AR}$


effective August 10, 1964

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**THE 829-B ON 6  
by K3MEH**

**Circuit Description**

**OSCILLATOR:** The oscillator is a 6CL6 operating as a Harmonic Colpitts type. The oscillator operates with 8MC crystals and triples in the plate to 25 MCs. The RFC in the plate (Z235), and the .001 caps. form a pi-section to filter the harmonics that might affect Channel 6. A switch is provided to change the operation of the stage from an oscillator or a buffer-tripler, when a VFO is used. The VFO is plugged into the crystal socket. Almost any VFO will drive it. **MULTIPLIER, DRIVER:** The 5763 Driver is capacitance coupled from the oscillator and has an untuned grid at 25 MCs. The stage doubles in the plate to 50 MCs. The screen voltage of this stage may be varied with a heavy Pot. Drive to the final, should run about 12 MA. The Drive may be reduced by de-tuning the grid of the final.

**FINAL AMPLIFIER:** The final amplifier is an 829B. This tube will deliver 90 Watts input with natural ventilation, and up to 120 Watts with forced air cooling. The stage is operated in push-pull for harmonic reduction. The tube has a built-in Screen bypass capacitor, of about 65 mmfd. This is further helped with a .001 mfd. - 1600 VDC Disc. All capacitors in the plate and screen of the 829B should be 1600 VDC. The stage is protected from excitation failure by the 6AQ5 tube. See your handbook for operation of clamp tubes. 





Building designed by Lou Cutler, WOVLI

We of General Communications Company, Inc., are pleased to announce the opening of our new service facilities at 827 South 20th Street, Omaha, Nebraska. This is the most modern, specially designed, maintenance facility catering to commercial two-way radio users - in this part of the country, and we enjoy showing people around through it. Please feel free to drop in at any time.

## BEWARE THE BIG ANTENNA

Loren Parks K7AAD

One prevalent theory on Yagis is that every time you double the size either by the length or by stacking, you pick up another 3 d.b. gain. Anyone who has worked with antennas and made gain measurements knows that this gets to be quite difficult if not impossible as the Yagi structure gets bigger or longer. In amateur practice you may pick up 1 or 2 d.b. or you may lose that much more. Let me be very blunt. Antenna manufacturers are the biggest liars in the world--even more so than converter manufacturers. When a manufacturer makes a claim or gain or noise figure that is seriously in error he is either a bare-faced liar or incompetent. When an antenna advertised to have a gain of 20 d.b. or more over a reference dipole actually has only 5 d.b. that is no small error. Yet it goes on today and no doubt will continue for a long time. Construction articles in magazines and handbooks are just as much at fault as manufacturers. One such batch of misinformation told how to make a 432 Mc. Yagi with 16.1 d.b. gain over a dipole. Several hams in the San Francisco area made the antenna to within 1/64 of an inch of specified dimensions. They took them to an antenna contest and all measured the same--between 2 &

3 d.b. over a dipole. At such contests I have seen manufactured antennas with gains of 10 d.b. less than what was claimed. Now 10 d.b. is nothing to sneeze at. It means the antenna is squirting 1/10th the supposed amount of power in the desired direction.

So how can this sort of thing go on? The ham is a gullible sort and he buys from the manufacturer who makes the wildest claims. If a new antenna came on the VHF market and advertised the true gain of the antenna, chances are very few of them would be sold, even though they might be the best available.

A ham will spend all sorts of time and money getting every watt he can squeeze out of his rig and transmission line and then hang an antenna on the end of the line he doesn't know the slightest thing about except what the manufacturer claims. How many hams do you know who have ever made any attempt to measure the actual gain of an antenna? Not one in a thousand, but it's not very difficult to come up with a measurement that is within 1 or 2 d.b.

The purpose of this article is to inform you of conditions that exist, not to show you how to measure gain. On the west coast we

have antenna measuring contests for 432 and 1296. These contests are real eye-openers. Those of us who attend know which manufacturers can be depended upon to make a miserable showing.

First, with a single Yagi using a dipole-reflector as a launcher, it is easy to get gains of 6, 7, 8 or 9 d.b. over a dipole without stacking at 2 meters and above. Now this doesn't mean that if you "peak" your 5 element beam you're going to get theoretical gain or even close to it. There are some terrible pitfalls in the way most hams tune antennas, especially in the VHF-UHF range. They usually use a field-strength meter and their transmitter. It is much, much safer from a practical standpoint to use the antenna you're tuning as a receiving antenna. I mean you're much less likely to mis-tune the antenna.

The best gain I have ever seen on a Yagi is about 11 d.b. This was an 8 over 8 with coax feed and a balun, made by Gain, Inc. I have a similar antenna on 220 I have measured at about 10. 5 d.b. and I am very pleased with it, though it has considerably less gain than is claimed. It is not safe to assume that because one antenna in a line is good that all are good, or vice versa.

I'm not advising you all to take up antenna measurements or to build your own antennas. I have a few hundred hours in it. If I could buy an antenna that was as good as some manufacturers claim I'd do it—even now. But to the best of my knowledge I can't and neither can

you so I suggest the following to you:

Find out who in your area works the long-haul stuff consistently, things like scatter, marginal inversions, etc. Band opening DX is not a good criterion because of the spottiness of openings and the fact that high-angle radiation may be favored. Ask him what he uses, and if it is manufactured find out what model it is. If you can get other opinions from DX men, so much the better. They may have experimented with various antennas and can save you a lot of time and money by their good advice.

If you have no one to ask then I suggest you buy or build an antenna with no more than 5 or 6 elements. Gain builds up rapidly with the first 3 or 4 elements and then tapers off so that each additional element adds less gain than the previous one. A short antenna you buy is more likely to work like it should than a long one. Some long antennas work better when you chop off the front half. This is because they aren't made right. You can't just add elements to a Yagi to get more gain. If a Yagi with a 10ft. boom is tuned right and you want to go to a 20 foot boom to get more gain you can't just add more elements at the same spacing. The whole beam has to be re-designed or re-diddled as the case may be.

The long Yagi is a tremendous antenna, but very few can make the work. A collinear is easier to tune, but is bulky.

De VHFer W8HHS



Not only does General Communications Company have the most modern Radio Shop facilities in Omaha, (shown on Page 12) they have the most modern facilities away from Omaha. The Company recently purchased a 1964 GMC truck which is equipped with a Gertsch FM-7 and DM-3 frequency and modulator meter. Also to make their mobile service installation complete a measurements model 560-FM has been installed for precise receiver alignment. 1000 watts of AC power is available inside

the truck for test equipment operation. The Beechcraft airplane (pictured above) is used for emergency service calls into the area served by General Communications Company. This aircraft is also used for engineering survey work, terrain study, equipment sales, and all-around better service to their customers.



During the summer months you may wish to take on some building projects concerned with amateur radio. The following project is the ideal one to tackle after dreaming of the BIG KW you intended to build some day. This project will let you taste the fruits of your labor within 30 minutes after you start.

The schematic of this keying monitor is simplicity itself. With so few components involved, success is bound to be enjoyed. As shown, the monitor is primarily meant to give a tone when the key contacts are closed. However, the addition to an rf power detector in place of the battery will provide a truly useful rf keying monitor. This usage is shown in the alternate schematic.

The monitor will provide adequate volume with 1-1/2 volts supply voltage, but may be used with voltages up to 6 volts if desired. I hap-

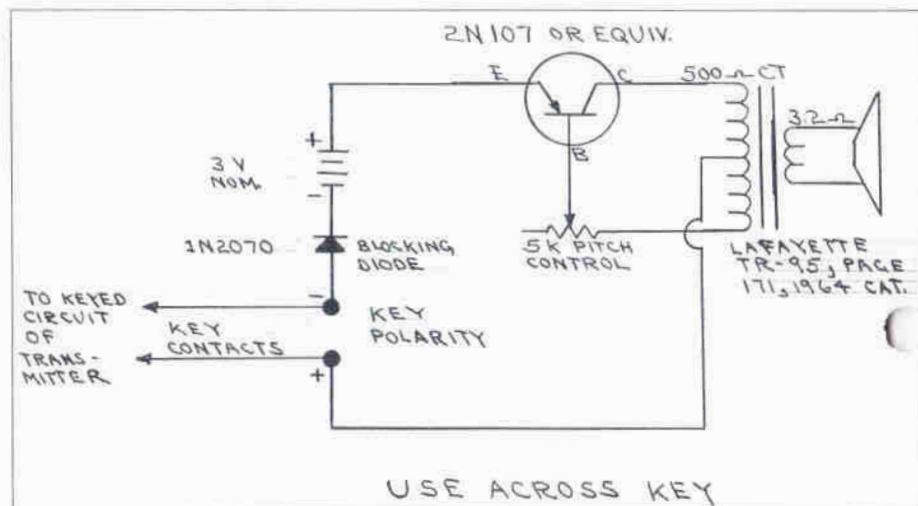
pened to have a 2 cell "D" unit battery holder, so this was used to provide a 3 volt source. The current drain is 25 milliamperes at 3 volts.

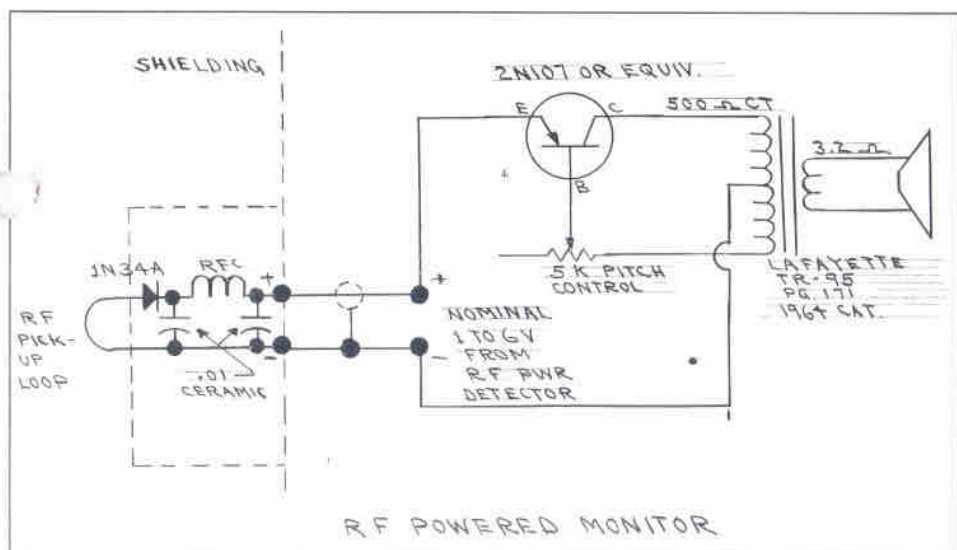
My particular open key voltage across which the unit is connected is 135 volts and the keying circuit when closed is 110 ma. The blocking diode specified is more than adequate for this usage and should suffice for most cases. If the keying voltage of your circuit exceeds the diode rating, a safer keying potential is recommended. (What color flowers do you wear best?)

Just as the saying "You can't tell the players without a program" exists, the expression can be paraphrased as "You can't tell your characters without a monitor!" Give this one a try.

de--BTL

Whippany Radio Club  
(Bell Laboratories)





**OFFICIAL BULLETIN NR 961  
FROM ARRL HEADQUARTERS  
NEWINGTON CONN JULY 16 1964  
TO ALL RADIO AMATEURS BT**

The U. S. Court of Appeals for the seventh circuit in Chicago on July 10 issued its decision that the imposition of application fees by FCC is lawful and that amateurs are not exempt from the fees even though public service is rendered and there is no pecuniary value to the amateur service. The court's decision came in a suit against the FCC participated in by fourteen organizations, including ARRL. Unless there is an appeal or action by Congress, the application fees may therefore be regarded as permanent. Further information will appear in September QST AR

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**OFFICIAL BULLETIN NR 959  
FROM ARRL HEADQUARTERS  
NEWINGTON CONN JULY 2 1964  
TO ALL RADIO AMATEURS BT**

The Post Office Department has announced approval of the ARRL request for issuance of a commemorative postage stamp honoring amateur radio operators in recognition of public service contributions. The stamp will be issued later this year, perhaps in October, in connection with the 50th anniversary of ARRL. September QST will contain more details and specific information on how to obtain first day covers as mementos of the occasion AR

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## EDITORIAL

### The VHF Orphans of Today

The favorable response to VHF-ER and the technical presentations we include in each issue, are indications that the thirst for learning DOES exist.

With the VHF/UHF population becoming more pronounced with each passing day, the need for more information on the basics of this field, is self-evident. Yet, precious little information is contained in the available amateur handbooks on today's market.

I can remember the ARRL Handbook and the Jones Handbook, from the early thirties. The greater portion of these books was dedicated to VHF. Techniques were crude and modulated oscillators were described in many circuit configurations. Yet, information which was current for the state of the art, DID exist in quantity. Since those early days of higher frequency experimentation, more and more amateurs have become licensed, per capita. Greater percentages of these amateurs have become VHF operators. This results from the Novice and Technician license privileges, plus the exodus from the DC bands by older, more seasoned hams, who seek the satisfaction of accomplishment, common only to VHF/UHF operation and experimentation. Despite this vastly increased percentage of VHF amateurs, fewer pages are dedicated to this facet of the hobby, than ever before.

Rapidly changing techniques have

made the VHF handbooks which are available at the present, quite obsolete through no fault of the author. Textbooks which are reprinted each year, should keep abreast of these changing trends, and present this necessary material in quantity. Few new antenna concepts are presented. Nothing is included to cover ATV, repeater stations, pre-amps., moonbounce techniques and basic requirements, VHF/UHF linear amplifier circuitry, test procedures for perfection of antennas, converters and transmitter efficiency. Little is dedicated in the test equipment sections of available books, to test equipment which will operate properly at these higher frequencies. Did you ever try to use an antenna bridge at VHF? How about trying to observe modulation linearity and percentage on an oscilloscope attached to a 2 meter rig? Pretty disgusting, isn't it? Yet, methods for doing this are available, if the someone would make this data accessible to the less informed amateur. How about VHF SSB data? Where can we look for this information?

These are but a few VHF topics which aren't being made available to the knowledge-thirsty VHF society. Handbook editors attention: WHY NOT UPDATE YOUR MANUSCRIPTS AND DEDICATE YOUR BOOKS OF KNOWLEDGE TO VHF/UHF AMATEURS, AS WELL AS TO THE BOYS WHO USE THE DC BANDS? How can the  
(Cont'd at bottom of 2nd col. next page)

## NEW MEMBERS SINCE MAY 1964 PRINTING OF ROSTER

Name & Address	Call	Name & Address	Call
Oenton, David 3308 Bridgeford Road Omaha, Nebraska 68124 Phone: 391-8975	KØVVO	Moses, David C. 4247 Curtis Avenue Omaha, Nebraska 68111 Phone: 453-2637	WAØGED
Bruckner, John E. 1829 North 17th Street Omaha, Nebraska 68110 Phone: None	WNØHII	Novotny, Ronald J. 5814 South 17th Street Omaha, Nebraska 68107 Phone: 733-6498	KØENF
Chase, William 4010 Bedford Avenue Omaha, Nebraska 68111 Phone: None	WØEXZ	Poots, Steve 1616 South 48th Street Omaha, Nebraska 68106 Phone: 553-7520	WNØHHQ
Duffy, William J. 4923 Woolworth Avenue Omaha, Nebraska 68106 Phone: 556-0433	WAØFTK	Roberts, Joe H. 2911 Ellison Avenue Omaha, Nebraska 68111 Phone: 455-0190	KØKEO
Evans, John R. 1919 North 90th Street Omaha, Nebraska 68114 Phone: 391-6670	WNØIBD	Sullivan, Roger Lee 4002 Vernon Avenue Omaha, Nebraska 68111 Phone: 453-3720 *****	WAØETE
Fischer, Kurt 836 South 88th Street Omaha, Nebraska 68114 Phone: 391-4193		(Cont'd from Page 18)	
McClenahan, Harold E., Jr. 6313 Hamilton Street Omaha, Nebraska 68132 Phone: 556-9877	WAØDGA	state of the art improve if the material is not published which will enable today's eager technician to learn the modern concepts? There is far more room for exploitation of technologies on VHF and UHF, than there is on the lower frequencies. I hope you will consider today's needs, before "going to press" for your next edition.	
Martinkus, Stanley 723 Pierce Street Omaha, Nebraska 68108 Phone: 346-9118	WØEKC	VY 73, Doug De Maw, W8HHS de VHFer	
Martinkus, Tony 723 Pierce Street Omaha, Nebraska 68108 Phone: 346-9118	WAØFHH	*****	