



CROSSTALK

NOVEMBER 1964

VOL. 6 NO. 11

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THE HAM AND PUBLIC SERVICE

GLOUCESTER COUNTY AREC PARTICIPATES IN SIMULATED EMERGENCY TEST

The Gloucester County AREC took part in the nation-wide simulated emergency test on Oct. 2nd. Test messages were passed from the mobile stations situated at different locations in the county to the net control station. Many of these messages that were destined for other areas of the country were then put into the National Traffic System on 75 meters by the local control station that was set up to operate both 6 and 75 simultaneously.

During the test 17 AREC members along with 8 mobile units kept traffic flowing at a steady pace on 50 mc. Much favorable publicity for ham radio resulted in both the Woodbury Times and the Camden Courier Post.

Local AREC nets are held every Friday evening on 50.9 mc.

TRIBUTE PAID TO HAM OPERATORS (from the WOODBURY TIMES 10-8-64)

The Gloucester County Red Cross Chapter recently paid tribute to the ham radio operators in this county area for their "service above self" program during emergencies. During the recent hurricane down south, one family in this area was interested in learning about realtives in Batton Rouge. Communications were down and calls could not be completed, so Red Cross was called. The American Radio Relay League, through it's Gloucester County unit went into action. Con-

LOCAL HAM RECEIVES CERTIFICATES FROM NAVY FOR PUBLIC SERVICE WORK

Frank King, WA2WGA, of Woodbury has recently received several certificates of commendation for the handling of phone patches to various U.S. Navy ships. Frank has been given a plaque bearing the seal of the U.S.S. ACCOKEEK, in recognition of his work in handing phone patch for it's crew. Frank was recently made an honary sub-mariner of the U.S.S. ANGLER for the handling of phone patches while the ship was submerged! In addition to these, Frank recently received from the Naval Department in Wash. a certificate of commendation for working 60 Navy Ships.

AMATEUR RADIO OPERATORS MONITOR HURRICANE NET

Several local hams maintained a watch on the Hurricane Net which was in session on 14325 kc when Hilda pounded the southern coast of Louisiana. Several welfare inquires were handled from the local Red Cross direct to K5MEI mobile in Batton Rouge.

tact was made in the southern area and encouraging information reported. Later there was a direct communication to overcome any further apprehension.

AMATEUR RADIO EXISTS AS A HOBBY ONLY BECAUSE IT QUALIFIES AS A SERVICE.

CROSSTALK.....

is the official publication of the Gloucester County Amateur Radio Club Inc. The dead-line for the submission of material for publication is the 20th of the month. Any material contained in this publication may be reproduced by any non-profit amateur radio organization

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Sid Gantz WB2JRU

MEETING NOTICE

THE REGULAR MONTHLY MEETING OF THE GLOUCESTER COUNTY AMATEUR RADIO CLUB WILL BE HELD ON WEDNESDAY NOVEMBER 4TH AT 8 PM IN THE OWENS-ILLINOIS CLUBHOUSE IN GLASSBORO NEW JERSEY. REFRESHMENTS ARE SERVED AND VISITORS ARE ALWAYS WELCOMED.

don't forget to.....

SAY YOU SAW IT IN

C R O S S T A L K

even if you didn't!

de K2JKA

During the past month the nominating committee of our club met and nominated it's slate of candidates to run for election at the December meeting. (see page 10 this issue) The constitution and by-laws of our club provide for this committee however, this does not mean that any full member of the club is excluded from being nominated from the floor, for any club office, at either the November or December meeting. Here is your chance to take an active part in club activities. If you feel that you have a candidate who is better qualified to serve the club then it's up to you to bring forth his name in nomination.

Election time is a very serious and important part of GCARC. All too many intentionally make themselves absent from the annual elections because of unknown reasons. Future policies and in fact, the whole future of the club, rests in the hands of those elected to office. An election provides YOU with the means of choosing the individuals who will run YOUR club for the next year. If you do not exercise your right to a voice in club affairs at this time then you have very little ground on which to stand when you disagree with the way that the club is run!

FCC PROPOSES CHANGES IN CONDITIONAL CLASS LICENSES

FCC has issued a notice of proposed rulemaking which would limit the eligibility for the Conditional Class license to applicants residing more than 175 miles from an FCC district office or a quarterly or semiannual examining point. Present conditional licenses would not be affected, nor would eligibility of handicapped or overseas personnel. The date for filing comments on this proposal is Nov. 16th. See November QST for full details.

KILOCYCLE CHATTER

W2YNR was a recent guest at Hanneman Hospital for some medical tests

WA2KWM is in the process of putting a pair of 4-400's on six meters

W2LVW has a new mobile rig

W2MMD is active on the New Jersey Phone Net

HAVE YOU TURNED IN THE MONEY OR THE UNUSED HAMFEST TICKETS? WA2TOW WILL BE COLLECTING THEM AGAIN AT THE NOVEMBER MEETING. LET'S GET ALL OF THEM IN THIS MONTH.

A BIG GCARC THANKS TO

GIL CROSSLEY W3YA

who presented a very fine program at the October GCARC meeting. It included slides of the new ARRL Headquarters Building. Gil is the Atlantic Division ARRL Director.

C O N G R A T U L A T I O N S

to Bill Shaw WN2BRJ for recently passing his General Class Exam.

HAVE YOU FILLED OUT THE QUESTIONNAIRE FOR THE CLUB DIRECTORY?

DID YOU KNOW that there are 40, 977 Conditional Class Licensees in the U.S.?

W E L C O M E

An open invitation is always extended to all to attend the regular monthly GCARC meetings. They are held at the OWENS-ILLINOIS Clubhouse in Glassboro New Jersey on the first Wednesday of the month at 8 PM. Refreshments are always served after the meeting.

CROSSTALK is currently exchanged with the following clubs

- Bucks County Amateur Radio Club
- Secane Amateur Radio Club
- Mt. Airy VHF Club
- Washington Amateur Radio News
- Southern Counties Amateur Radio

THIS SPACE WAS RESERVED FOR YOUR CONTRIBUTION TO THIS MONTHS

C R O S S T A L K

needless to say, we didn't get it

USE 50.9 MC. FOR LOCAL CONTACTS WITH OTHER CLUB MEMBERS

IT'S INTERSETING TO NOTE.....

comment by Doug De Maw W8HHS from the Washington A R News

Amateur Radio has taken on an entirely new and unpleasant wardrobe in the past two years. No longer exists the fraternal unity and good fellowship experienced in years past. There was a time when all radio amateurs across the nation could be friends, ragchew over the air and exchange ideas openly, without fear of condemnation from one another. This was truly HAM RADIO as it was meant to be. Under those conditions fellows worked together, pooled knowledge and effort and worked toward furtherment of the art. (which is one of the primary reasons for the very being of amateur radio)

Things have changed, opportunists, rabble rousers, kingdom builders and malcontent have come to the fore and spread their venom in the pages of magazines. Much of this poison has found its mark among other disgruntled individuals, causing them to fall in step with the tempo set by the instigators. Since the dawn of history, attempted overthrow of governments, dynasties, democratic organizations and other similar forms of unified organizations have been attempted and often carried out by organized groups of malcontents. Strangely enough these people have the required zeal to force themselves upon the masses, cleverly disguise their purposes and gain a foothold by misrepresentation of their cause. Too many followers, too late...discover their error in judgement, when finding themselves amid a situation of disenchantment.

Recently the ARRL has been singled out for attack by specific groups and individuals. The followers fail to recognize the good points of ARRL. Those with whom I have spoken about the issue don't want to hear what the league has made possible for amateur radio. One Michigan amateur recently stated, "I want the League smashed. It must be destroyed NOW." I asked him why he said this. His answer was "because W8.... said so, and he's the preseedent of our club," I asked him if he was aware of what the League stood for, what it

has done over the years for amateur radio and how much investigation he had carried out to determine the truth or mistruth contained in the charges leveled against the ARRL. He said "I am not interested in that, I just want the ARRL smashed." Here then lies the basis for much of our current ailment. Those who join forces with radicals, can not think for themselves, nor apparently want to. Seeds of discontent are easily planted in the minds of such individuals.

All of this leads to one thing....we're needlessly divided as amateurs. Its serious fellows more than many of you realize. Its time to read a little history. Find out what the League has done for you over the years. Add all of these things up in one column. Then add up all of the bad things that you think have occurred. Compare the results of the adding. Now compute the tangible benefits that any similar organization has given you. Note: I say GIVEN not PROMISED. Pretty slim pickin', isn't it? It's time to do some serious thinking of your own. Is whats happening today...good for you? For amateur radio? For America? Lets be a fraternity again and enjoy the unity that American stands for.

Doug DeMaw
W8HHS

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B O O

Thanks to Bob Danley WA2WWF and his RTTY machine for the clever art work in this month's CROSSTALK.

TABULATION OF HAM POPULATION IN CALL AREAS FROM THE SPRING '64 CALLBOOK.....

W1.....	20,653
W2.....	36,432
W3.....	19,717
W4.....	33,336
W5.....	24,683
W6.....	36,617
W7.....	17,954
W8.....	26,452
W9.....	24,946
W0.....	23,163
KH6.....	1,443
KL7.....	1,102
Misc. K's.....	1,615
TOTALS.....	268,113

WA2USA TO BE OPERATED AGAIN, NEW CALL TO BE K2YV (from WARN)

WA2USA, as we are all pretty well aware, turned into a sorrowful mess. It's instigators made the installation as a spur of the moment affair, apparently without the deep background of planning necessary to sustain the project. The net result was that there was no effort made to renew the 30 day temporary license. There was a small matter of some \$7,000 in unpaid bills. The ARRL and the Hudson Amateur Radio Council have agreed to put the station back on the air to augment K2US.

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RRRRRRRRRR
RRRRRRRRRR
RRR   RRR
RRRRRRRRRR
RRRRRRRRRR
RRR   RRR
RRR   RRR
RRR   RRR
RRR   RRR

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EEEEEEEEEEEE
EEEEEEEEEEEE
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EEEEEEEEEEEE
EEEEEEEEEEEE
CCCCCCCCCC
CCCCCCCCCC
CCC
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CCCCCCCCCC

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AAA
AAAAA
AAA AAA
AAA AAA
AAA   AAA
AAAAA
AAA   AAA
AAA   AAA
AAA   AAA

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NN   NN   EEEEE   TTTTTTTT
NNN  NN   EE       TT
NNNN NN   EEEEE   TT
NN  NNNN  EE       IT
NN  NNN   EE       TT
NN   NN   EEEEE   TT

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5555   000   999
55   00 00   99 99
555   00 00   9999  M   M   CCCC
   55   00 00   99   MM MM   C
555   000   0   999   M M M   CCCC 0

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FFFFFF RRRRR   II   DDDDD   AA   YY   YY
FFFFFF RRRRRR  II   DDDDD   AAAA  YY   YY
FF     RR  RR   II   DD  DD   AAAA   YYYY
FFFF   RRRRRR  II   DD  DD   AA  AA   YY
FF     RRRRR   II   DD  DD   AAAAAA  YY
FF     RR  RR   II   DDDDD   AA  AA   YY
FF     RR  RR   II   DDDDD   AA  AA   YY

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3333   0000   0000   PPPPP   MMM   MMM
33 33   XX   000000   000000   PPPPPP   MMMM  MMMM
33 33   00 00   00 00   PP  PP   MM  MM  MM
3333   00 00   00 00   PPPPPP   MM  M   MM
33 33   00 00   00 00   PPPPP   MM   MM
33 33   XX   000000   000000   PR     MM   MM
3333   0000   0000   PP     0 MM   MM 0

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BOB WA 2WWF

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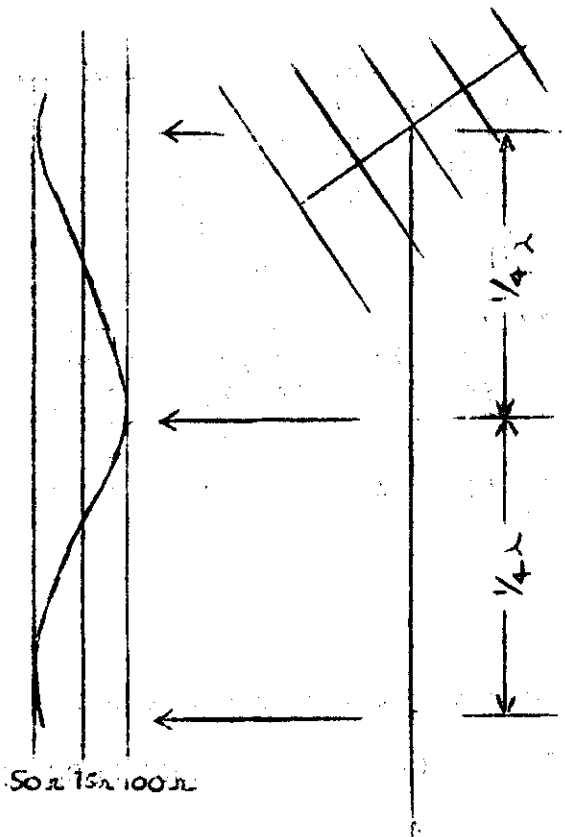
* * * * *
*
*   DON'T FORGET THE GCARC CODE AND THEORY CLASSES ON
*
*   THURSDAY EVENINGS AT 7:15 PM. THE CLASSES ARE HELD
*
*   IN PITMAN HIGH SCHOOL. THERE ARE BOTH BEGINNERS AND
*
*   ADVANCED CLASSES.
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COAXIAL LINES AND STANDING WAVE RATIO.....

Much has been written in the past in various ham publications including CROSSTALK, on the causes, cures, disadvantages and problems that arise from high standing wave ratios existing on coaxial transmission lines. Just try eavesdropping on any of the ham bands and it won't be long before you will encounter someone discussing some facet of SWR. One of the most amusing things to hear is a chap cutting his feedline by a few inches or a few feet to reduce the SWR as indicated by his bridge at the transmitter. No doubt this subject is among the least understood by the average ham.

When the ideal antenna is tied to the end of a coaxial line it should look, from an electrical stand point, like a carbon resistor. The value of this resistor or antenna, as the case may be, should be the same ohmic value as the characteristic impedance of the transmission line; for example 52 ohms for RG-8 and RG-58 coax and 72 ohms for RG-11 and RG-59 line. When a length of cable is terminated this way, by the ideal antenna or a resistor, the SWR can be measured at any point along the line and should be 1:1 indicating that the impedance is constant along the entire length of the line. Now let us assume that we take a piece of 75 ohm coaxial cable and terminate it with a 50 ohm load, an antenna or a 50 ohm resistor. This is shown in the illustration. Here we have a situation where our 75 ohm cable is terminated in a load that is 25 ohms less than its characteristic impedance. Let's trace the line down and see what happens. If we were to insert an SWR bridge right at the antenna or load we would of course measure 50 ohms or 1:1, as we move down the line to a point $1/8$ of a wavelength from the antenna we would now have an impedance of 75 Ohms which would indicate an SWR of 1:1.5 on our 50 ohm SWR bridge, as we proceed farther down the line to a point $1/4$ of a wavelength from the load we would now measure 100 ohms or an SWR of 2:1, going down even farther to a point $3/8$ of a wavelength from the load the impedance would be back to 75 ohms and when we finally reached a point exactly $1/2$ wavelength from the load it would be back to 50 ohms and again indicate a 1:1 SWR. This variation in impedance along the transmission line repeats itself all the way back to the transmitter every half wavelength from the antenna it returns to the impedance of the load. The actual load that the transmitter sees looking into this mismatched piece of coax could be anywhere from 50



EFFECT OF A 75 OHM FEEDLINE TERMINATED IN A 50 OHM LOAD
NOTE THE VARIATION IN IMPEDANCE ALONG THE LINE VARYING FROM 50 OHMS TO 100 OHMS

(cont'd page 9)

COAX AND SWR (from page 8)

ohms to 100 ohms, depending on exactly how much transmission line existed from the transmitter to the antenna. An SWR bridge (50 ohms) placed in the line at this end could show an indication from 1:1 all the way up to 2:1, here again depending on exactly how much line is present between this point and the load. As you can well see if the indication is 2:1 and we cut a quarter wavelength of line off then the indication will drop to 1:1, but the actual SWR has not changed, if we move down the line another quarter wave we would measure 2:1! As you can see, the only true indication of what really is happening is to tune the antenna, with an SWR bridge located right at the antenna, or at a point that is exactly a multiple of $1/2$ wavelength from the antenna on the transmission line. An SWR bridge is usually set up for a single impedance, we must also make sure that we use a 50 ohm bridge for 50 ohm cable and a 70 ohm bridge for 70 ohm cable. When calculating the half wave point in the feed line, always remember to take into account the velocity factor of the coax which can be found in the handbook. For most types of coaxial cable it is .66. Multiply your answer arrived at from the formula for a wavelength in free space by .66.

The variation in impedance along a mismatched piece of coax is not all evil, it sometimes can be used to advantage. If we were using stacked antennas which individually presented a 50 ohm load, when we tied them together we would end up with 25 ohms, much too low a value to obtain coax for, however by using a $\frac{1}{2}$ wave piece of 75 ohm cable (called a Q section) in each lead before attempting to parallel them, each would look like 100 ohms. When they are tied together they could be fed nicely with a 50 ohm line.

(9)

PUN ON WORDS

The only sherkker that we should have among club members is Bob Sherker WA2EPB of Almonesson

KILOCYCLE CHATTER

It looks like W2YNR finally got discusted with the ignition noise in the car as his mobile gear is up for sale

K2JKA is now sporting a 6 over 6 array on 50 mc.

WB2JRU is frequently heard outside the six meter band on 49.98 mc signing the call AFC2JRU in the Air Force MARS Nets.

Ever listen on 51.3 mc and hear all of that bee-del-e-beeping? It can usually be traced to one of three GCARC members who operate RTTY up there...WA2WWF W2LVW and K2PQD

K3WIL can usually be heard on his favorite mobile frequency of 50.5 mc.

DON'T FORGET THE ANNUAL ARRL SWEEPSTAKES CONTEST IN NOVEMBER. HELP CONTRIBUTE TO GCARC'S SCORE. CHESTER MCGEAR WB2EDH WILL HAVE LOG FORMS AT THE NOV MEETING

POOR TASTE.....

No doubt many of you have received literature in the mail linking a certain political figure and ham radio together while at the same time soliciting contributions. In my opinion any one distributing this type of literature, for either party does so in bad taste. ED

**NOMINATING COMMITTEE MEETS AND
SELECTS SLATE OF CANDIDATES**

The Gloucester County Amateur Radio Club nominating committee met and selected its slate of candidates for office in the Dec election. The nominating committee is provided for in an ammendment to the Constitution dated December 1962, addition to article V section 2A. The nominating committee consists of all the past preseiednt of the club. Those present at the October 14th meeting were Jim Peck W2LVW, Frank Turner W2KE, Mal Mason W2MMD, Woody Franz K2AQL and Paul Walton W2YNR.

The offices that are to be filled at the December election are those of President, Vice-President, Corresponding Secretary, Recording Secretary, Treasurer, (all 1 year terms) and two directors (three year terms) In addition there will be one Trustee elected at the December meeting.

The names of all the nominees selected by the nominating committee will be made known at the November general membership meeting. In addition to this nominations from the floor of the meeting will be accepted for the above mffices at both the November and December meetings.

The present term of office for the officers and directors ends at the December meeting and the newly elected officers and directors take office immediatly after election and will serve until the December 1965 regular meeting.

Those who's term expires are president Walton, vice-president Layton, Recording secty Blew Corres. secty. Parker, Treasurer Perry and directors Peck and Danley.

don't forget to.....
SAY YOU SAW IT IN CROSSTALK
even if you didn't.....

**GCARC TO OFFER ATTRACTIVE ID
PLATE FOR BRINGING IN NEW MEMBERS**

The membership committee announced at the October meeting that a very attractive ID plate that can be used on an automobile or in the hamshack will be awarded to all who bring in at least three new members to the club. The plates, which are made of scotch-lite, contain the GCARC emblum in full color as well as your call letters and handle. The plates are being made for the club through the courtesy of Milt K3WIL. The plates are the same size as the current license plates. Full details can be obtained from the membership committee.

KILOCYCLE CHATTER

W2LVW mobile was the 1900th mobile contact for W3OR in 1964

WB2JRU has a new Ameco TX-62 on six and two meters

WA2WKB and WA2WGB have a new three element six meter beam

LICENSE EXPIRATION NOTICE SERVICE

1. Address a postal card to yourself
2. Write anything that you wish to tell yourself on the card
3. At the top of the correspondence side of the card write the date when you want the card mailed
4. When this date arrives the card will be mailed

This service is sponsored by the Foundation for Amateur Radio of Washington D.C. Mail all cards to:

Joan Machinchick K3KBI
Lake Drive, Cape St. Clair
R.F.D. Annapolis, Md. 21401

WEDNESDAY NOVEMBER 4TH IS GCARC MEETING NIGHT! WILL YOU BE THERE ?

by Harry McCormick WA2SEA

I would like to state briefly the purpose of this interview column once again. It is to acquaint the club members with the average club members, the ones that most of you probably don't know.

John Kull WB2GKH of

Woodbury was born in Philadelphia on July 27th 1910; he moved to Mantua when he was 5 years old. It was here that John attended school.

John has been employed by the Socony Mobile Oil Company at their Paulsboro refinery for the past 19 years. John is an ex-CBER and got his start in Ham radio through the club sponsored code and theory classes. He received his novice ticket in 1962. He received his technician license in February of this year. John is once again enrolled in the classes this year and is working toward the general class license.

At the present time John works six meters nearly every evening with a 40 watt homebrew transmitter and an HQ-170 receiver. His antenna is a three element beam. John still has an HT-40 transmitter that he used as a novice.

John is an ARRL member* and was an active worker on the hamfest committee this past year.

DONT FORGET TO GET THOSE QUESTION-
AIRES IN FOR THE CLUB DIRECTORY!!

BOARD VOTES TO PURCHASE FIRST DAY
COVERS

The board-of-directors instructed the Corr. Sec. to purchase six first day covers with the amateur radio commorative stamp to be held by the club.

I've probably heard more club scuttlebutt than most. For example, I've heard criticism of the directors, the officers, the committees and even the president. (ouch) The other day I heard criticism of the members; this is a new one.

Somebody, no names please, said to me "I think the members are at fault in not letting the board-of-directors know what they want" and, you know, I think he's right! The board tries to anticipate the desires of the general membership, but mostly they work in the dark, hoping that they have guessed right.

So the next time that you want something, or don't like something.....make it known. Make it known from the floor, in CROSSTALK....get it out in the open where we can work on it.

SWEEPSTAKES '64

The GMT dates for the annual Sweepstakes 1964 are Nov. 15th phone and November 22 CW. This year phone and CW are being held on seperate weekends with a full 24 hour period for each mode. The excahnge information will follow that used last year and will once again be explained in full in November QST. Log forms and operating aid #6 to avoid duplicating QSO's are available without charge from ARRL Headquarters. Chet McGear WB2EDH is taking care of GCARC participation in this years SS contest.

ANY ONE HAVING TICKETS FOR THE HAMFEST THAT WERE NOT SOLD, OR THE \$\$\$\$ FOR TICKETS THAT WERE SOLD PLEASE CONTACT HOWARD HIRST K2QGH OR DAVE ROBERTS WA2TOW.

SOLID STATE TOPICS

Transistor Crystal Oscillator

This article is the first of a possible series of transistor topics that I will write for CROSSTALK if sufficient interest is shown by the club members. Among these topics will be basic and straight to the point articles that will provide information for designing and trouble shooting transistor circuits. Also there may be general circuits using cheap transistors for audio, test circuits and R.F. applications. I feel that the transistor will soon be a major part of Ham Radio and all of us should avail ourselves of the opportunity to gain a practical basic knowledge of these devices.

Within the next year there will be transmitters on the commercial market for frequencies up to over 150 Mcs. with power output of between 15 to 30 watts using only transistors and other solid state devices. Some of these devices such as the variator can frequency multiply at power levels up to 30 watts with as high as 80% efficiency. The prices are still high but so were all transistors and other solid state devices a few years ago.

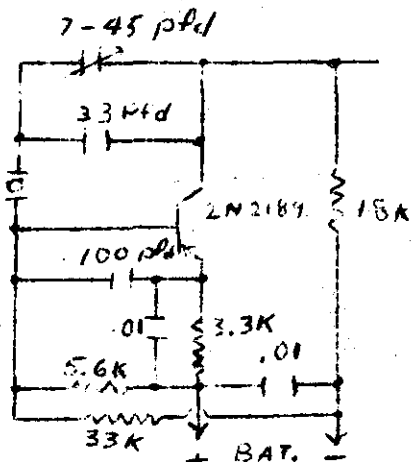
Some transistors are now available for 25¢. The 2N404 can now be purchased for less than 50¢. This transistor can be used in certain circuits up to 3 or 4 Mcs. The 2N2189 cost about \$1.75 and is usable up to over 50 Mcs.

The crystal oscillator presented here is useful as a crystal calibrator or frequency spotter at frequency or harmonics up to the 6 meter and possibly the 2 meter bands. It will operate between 5 to 20 volt battery supplies. This is a natural for a crystal calibrator for your mobile receiver. Or a 9 volt transistor radio battery which will cost 45¢ at Pep Boys will do fine. The life of the battery will practically last for its shelf life. All resistors may be as small as 1/2 watt because of the low current requirements. The transistor may be almost any PNP type. But the 2N2189 gives very good overtones at the higher frequency ham bands. The 7 to 45 pfd trimmer condenser is only needed if you wish to have some adjustment of the crystal frequency such as a 100 Kc rock tuned to WWV.

The layout and placement of parts is not critical. The circuit may be built on any insulating board or terminal strips. one word of caution is that always use some means of a heat sink on the transistor lead that is being soldered into a circuit. Use a long nose pliers or an alligator clip on the lead between the point of soldering and the body of the transistor. This practise will reduce the heat flowing to the transistor and avoid possible damage to it. This practise should always be used with all soldering of any transistor leads.

I will bring a sample of this crystal oscillator to the next club meeting for anyone who desires to examine it.

de K2AQL WOODY FRANTZ



(12)

dont forget to.....

SAY YOU SAW IT IN CROSSTALK

even if you didn't !.....