

President: John Stull, WB2JZX  
 Vice President: John Poulson, WA2PVH  
 Recording Secretary: Harry McCormick, WA2SEA  
 Corresponding Secretary: Della Parker, W2AFZ  
 Treasurer: Paul Callaghan, WB2WAK  
 Directors: Ken Newman, W2FBF  
 Howard Carter, WA2OVQ  
 Bill Bachman, WA2VEE  
 Bill Frambes, WB2FJE  
 Doug Gehring, WA2NPD  
 Jack Bowen, WB2WKV  
 Trustees: Wayne Wood, W2SUA  
 Phil Mattison, WA2WOD  
 Bill Bills, W2CDZ  
 Gurdon Cooper, W2PAX

\* \* \* \*

UR X-TALK STAFF

Editor: Doug Gehring, WA2NPD,  
 DX Diary: Jack White, WA2MEM  
 YL Page (Les Belles): Rose Ellen Bills, WA2FGS  
 Ghost Writer: (Call lost in QRN)  
 Ham Interview: Harry McCormick, WA2SEA  
 Roving Reporter: John Stull, WB2JZX  
 Contest Corner: Ken Newman, W2FBF  
 AARL Bulletins, etc.: Della Parker, W2AFZ  
 Typesetter: Sue (Mrs. WB2FJE) Frambes  
 Printer: Rick Carter, WA2OLS  
 Circulation: Bill Shaw, WB2PVI

\* \* \* \*

CLUB NETS

|             |          |    |            |             |            |
|-------------|----------|----|------------|-------------|------------|
| 6M AREC     | - 50.9   | MC | Sunday     | - 8.00 P.M. | Local Time |
| 10M AREC    | -28.8    | MC | Fridays    | - 9.30 P.M. | Local Time |
| Novice      | - 21.225 | MC | Saturdays  | - 8.30 P.M. | Local Time |
| Novice AREC | - 21.225 | MC | Mondays    | - 8.30 P.M. | Local Time |
| Friendship  | - 7.265  | MC | 3rd Sunday | -12.30 P.M. | Local Time |

CLUB MEETING, NOV. 1st, 8 P.M. AT THE MEETING ROOM

## NOV. 1st MEETING:

Boy, how time flies, and old November is about upon us! And the Club meeting couldn't come sooner this month -- in fact its on Nov. 1st! WA2PVH has arranged for George Krackie, WA2AGR to present a program on Solid State items which should be timely interest to all. Also, November is the month to nominate officers for 1973 and to receive the report of the Nominating Committee. WB2GKH will provide the hot coffee to splash down our gullets, so c'mon out even if it's a cold night. See you all on the 1st.!

\* \* \* \*

## GCARC FLOAT A HUGH SUCCESS ! !

At about 8:15 PM on Oct. 7th, "Snoopy," W2K9, passed down Broad St. and Barber Ave. literally stealing the show as he transmitted several "arfs" from atop his dog house to the throngs lining the sidewalks during the annual Woodbury Fall Festival Parade. Three other hound dogs (WB2JZX, WA2OVQ, and WA2OLS) rode up front of Snoopy keeping him company. Even the most critical bystander agreed that the GCARC Float was the best of the evening. We didn't win a prize probably because our float apparently didn't fall into the categories listed as "prize" categories, namely Commercial, Amateur Commercial, and Service Clubs. However, with our own Dave, WA2VAT, serving as Parade Chairman (Dave also belongs to the Woodbury JACEE'S), it's hard to fathom how we escaped winning? Perhaps WA2VAT really is an honest fellow and just didn't feel right about passing along our bribe to the judges. (Funny that Dave's coax was cut the following night!). At any rate, some of WA2PVH's A-1 pictures, together with a suitable cover article, will be forwarded to the ARRL for possible publication in QST. Of course, our Float made the Woodbury Times picture section. Chairman W2FBE wishes to express his thanks to all who made this Float such a hugh success and especially to President, WB2JZX for his talented suggestion. The good times (807's) had by all in constructing the edifice will be long remembered.

\* \* \* \*

## CLUB JACKETS

12 members ordered club jackets at the Oct. meeting -- hence, the order was placed with Flynn's Sport Shop. The jackets may be ready for delivery by the Nov. 1st Club meeting -- but this is not certain at this writing. If anyone else wants a jacket call WA2NPD as soon as possible! (Before Nov. 1st). Don't be left out!

## TECH. ADVISORY COMMITTEE BUSY

And thanks to Chairman WB2FJE and WA2OLS, Della's antennas are now in good shape. Any other customers? Check with Bill, WB2FJE, FB Men.

Who do YOU want to run YOUR Club?

by Harry McCormick, WA2SEA  
Recording Secretary, GCARC

Well its getting near the time of year when some careful consideration should be given by each club member as to whom they would like to see for Club Officials in the coming years.

According to the Club Constitution, ADDITION TO ARTICLE IV, Section 1. 'There shall be a permanent standing committee consisting of all the Past Presidents of the club. The President of the club shall be chairman of this committee. The function of this committee shall be to propose a slate of candidates to the membership for their consideration. They will propose one nominee for each elective office.'

Then going back to ARTICLE IV - NOMINATION AND ELECTION OF OFFICERS, Section 1.

"At the general membership meeting (November) preceding the annual membership meeting (December), nominations for offices of President, Vice-President, Recording Secretary, Treasurer, and Corresponding Secretary, and two (2) three-year Directors shall be called for from the Nominations Committee and the members present. Members need not be present to be nominated for office."

The point that I am trying to get across is this: The Constitution shows us how nominees are selected and by whom. But what do you as an individual have to say about this?

You should pay particular attention to next to the last line in ARTICLE IV, Section 1. "Nominations shall be called for from the Nominating Committee and the members present!"

It all boils down to this: If you don't think the Nominating Committee has selected the best man for the job, now is YOUR time to have YOUR say and do something about. If in your opinion someone else is better qualified for a particular vacancy, don't be bashful, get up and nominate the person YOU would like to see as YOUR club official next year. Voice your opinions, loud and clear, and this year let's have a little competition for these important club positions. (Oh yes, while your at it, can anyone think of a good Recording Secretary?)

\* \* \* \*

LES BELLES

What exactly is a ham operator? Many ask this question. There could be many many answers, among these would be telling of a person who held a ticket since the year--1 and perhaps that is about all that has taken place; or, you might say a different thing about a ham who has held a ticket only a short while but has accomplished more in the field of communications than the old timer. I have such a person in mind -- HARRIET CREIGHTON, WA3ATQ/NØINP -- now retired and lives in a very beautiful lakefront home in the Poconos with her OM -- Harry--K3YJK, her mother (aged 90 this past August), and also their beagle mascot named Mitsie.

(Les Belles con't.)

(Les Belles Con't.)

Harriet left a teaching position to enlist in the Marine Corps in 1943 to serve her country and spent the duration of the war as a truck driver at Quantico, VA. She is an active member of the Greater Philadelphia Chapter of the Women Marines Association and has personally designed and made a large banner they display at all gatherings.

Harriest received her General ticket in 1964 and since that time WA3ATQ has been a very familiar call on all traffice and active nets and she has become a well known ham operator to all service personnel who have talked to their families over her phone patch. She also has kept schedules with the hospital ship SS Hope on its 1966 voyage to Nicaragua, 1967 voyage to Colombia and a recent trip to Jamaica. Currently, she is handling patches with the HOPE now in Brazil. She is also a faithful member of the Eye Bank Net.

A member of YLRL, a national YL organization, she has served as third district chairman which includes providing a write/up of yl activity in the 3rd district for publication in YL Harmonics 6 times a year. She received her Advanced ticket in 1968.

I met Harriet over the air on the Eastern Pennsylvania Traffic Net and later had the pleasure of knowing her personally at the YLRL Convention in Denver in 1968. To name some of the awards Harriet has received may be of interest to you, so I am very happy to do this. Read over the following and see how many of these you have:

Al+Operators Club--WAC--WAS--DX-YL with 1 sticker--YLCC with 4 stickers or in plain words 300 yls worked--3rd District High Score in YLAP--1965 and 1969--3rd District High Score in YL-OM contest 1969. She has held OPS since 1965--has made BPL 20 times!--Received Certificate of Commendation for Women in Communications on June 28, 1967--Received Chapel of Four Chaplains Legion of Honor Award on Feb. 26, 1967 for her participation on the Eye Bank Net--Received Certificate from USS America for Phone Patching Feb. 3, 1966--Received letter of Commendation and also a Certificate from KG4AA June 1967 for Phone Patching--Received letter of Commendation from Mayor James Tate of Phila. Dec. 30, 1966 for message handling at Christmas time to servicemen overseas--Received letter of Commendation from John M. Kapp--U.S.O. executive director for message handling for U.S.O.--Received Freedoms Foundations Honor Certificate 1970 for message handling and phone patching--Received letter of Commendation from Col. Van D. Bell Commanding Office Marine Corps Guantanamo Bay, Cuba for 5,000 phone patches completed from 1965 through 1970--Received Award of Merit Certificate from William B. Walsh, President Project Hope for phone patching the SS Hope hospital ship--Letter of Commendation from D. R. Simpson, Major General U.S. Marine Corps for message handling from Camp Le June on Mothers Day, 1966.

She has appeared on television several times as well as given talks to various organizations regarding ham radio operation, especially where women are involved. Harriet is an asset to any group she is involved with.

73's  
WA2FGS

\* \* \* \*

INTERVIEW WITH A HAM

by Harry McCormick, WA2SEA

At the beginning of this year, I promised the Editor of Crosstalk a half dozen interviews for the year. This is the sixth interview to appear in the pages of Crosstalk this year, and the thirty fourth dating back to February, 1963.

## INTERVIEW CONTINUED:

This interview with Jim Buzby, WN2GJH, of Monroewille was obtained while Jim was at John Stull's QTH working on the club float. I also obtained another interview the same night, and it will appear in a later issue of Crosstalk.

Jim was born in Philadelphia on July 24, 1935. He attended various schools in Phila. before the family moved to New Jersey in 1945. Him is a graduate of Lower Camden County Regional High School (now called Overbrook).

Jim is another of our club members who got his start in Amateur Radio through our club sponsored code classes and got his Novice license in June of this year.

Jim is on the air nearly every night in the week, usually sometime after 8:00 P.M. His station consists of a Drake 2NT transmitter and a Gonset G-66 receiver. His antenna system consists of dipoles for the three Novice bands.

Jim is a member of the A.R.R.L. and in our club is active on the 15 meter A.R.E.C. Novice Net. He is also a member of the Tech. advisory committee.

\* \* \* \*

## XTALS FOR TRADE

Bill Wheatly, WN2FTV, would like to trade JAN Xcals in the 7150--7200 kc region for xtals covering 7100--7150 kc. Call Bill at

## APOLOGIES

To Ray Metzger, whose call is WB2DZY, not BZY as erroneously listed in the June, 1972 Membership list. So correct this in your own personal list, gang.

## CONTEST CORNER

Don't forget the ARRL Sweepstakes coming up in November. Check your QST for details. As usual, GCARC will award certificates to the club winners. More news will be forth coming (and also logs) at the Nov. 1st. meeting.

## SICKBAY:

Great news to learn that Milt, K3KIL, is home and even works 1 hr/day, or possibly more, by now. Keep up the steady improvement Milt and don't do too much too soon!

Also understand WB2PVI presently in Elmer hospital for tests and observation. Hope its nothing serious Bill and you will be back behind the wheel of the yacht in short order.

## FCC RULES CHANGE

As explained by W2SUA at the Oct. Club meeting, the following bulletin is now official:

WIAW BULLETIN NR 921. September 29, 1972. FCC has now acted in the matter of Docket 19162, regarding phone band expansion. Effective November 22, 1972, there will be 25 Khz more on 75 meters, an move down to

FCC RULES CONTINUED:

3775 Khz., and 50 more on 40 meters, down to 7150 Khz. There will be no expansion on 20, 15 or 10 and no change in the 25 Khz CW segments for extra. Voice sub bands available exclusively to Extras will be 3775 to 3800 and 21.250 to 21.270 Khz. Voice sub bands available to Advanced and Extra will be 3800 to 3890, 7150 to 7225, 14.200 to 14.275, 21.270 to 21.350 Khz and 50.0 to 50.1 Mhz. Novices stay at 3700 to 3750, move to 7100 to 7150 and at 15 meters reduced to 21.100 to 21.200 Khz. They lose 145 to 147 Mhz. priveleges entirely but will get CW priveleges from 28.1 to 28.2 Mhz. The novice requirement for crystal control is to be deleted. Full information will appear in the November issue of QST.

We understand that because of the significance of the changes, the FCC will notify all amateurs by mail.

\* \* \* \*

THE CHALLENGE OF TVI, CONT'D.

(Reprinted from the Ontario Amateur, Issue 3, 1972).

As already noted, rf flowing in a nonlinear element generates harmonics. This element need not be in the transmitter--it can be in the antenna circuit, or even just closely coupled to the antenna. Metallic oxides are excellent non-linear, or rectifying devices, as witnessed by the copper oxide and silicon oxide semi-conductor devices on the market. A loose or corroded connection anywhere in the antenna or feed line is an invitation to TVI. Likewise, a loose or slack guy wire to a tower supporting your beam or inverted vee can pick up rf and pass this rf through the poor connection made to the tower or ground anchor. One of the authors has had two personal experiences during the past 20 years with harmonics generated in non-linear equipment. In the first instance rf was being picked by a lead-sheathed overhead telephone cable running across the rear of the back yard. Where this cable passed through some rather large trees, the movement of the cable against the trunks of the trees had worn away sufficient lead sheath so that a solid circuit along with sheath was not present. With the co-operation of the telephone company this defect was found and the telephone company decided to replace this one span with a new underground cable. Voila--the TVI disappeared. On another occasion harmonics were found to be generated at the point of contact between the metallic flashing and the evestroughing around the roof of a breakfast nook. The cure in this case was to bond the two pieces of metal together, thereby shorting out the rectifier.

This type of harmonic generation is very difficult to localize, and requires a fair bit of good luck, as well as knowing what to look for. An invaluable aid in tracking down this type of interference is a battery operated TV field strength meter. This can be used with a pair of "rabbit ears" to get a general idea of the location of the source of interference. For more localized searching a capacitive probe in the form of a length of wire coiled into a pad about 3 inches in diameter and fastened to the end of a piece of coax. For pinpointing the exact location, a coax pick-up, terminated in a two turn link about  $\frac{1}{2}$  inch in diameter is excellent if the radiated harmonic is strong enough.

Let us look at beat frequencies for a moment. In order to obtain a beat frequency some form of mixer is required. Any nonlinear device is an excellent mixer. In a case that occurred recently, a neighbouring TV set received not only the usual harmonic interference, but the sound of an fm broadcast station as well, every time the key was depressed. The TV set was tuned to channel 2 and the transmitter to 21.1 MHz. The amateur was using a 3 element beam, but also had a multi/band trap dipole strung from the same tower that supported the beam. By analysis of frequencies,

## Challenge of TVI Cont'd.

it appeared that the second harmonic of the transmitter, 42.2 MHz, was beating with 98.5 MHz from the fm station to produce a difference frequency of 56.3 MHz--in the channel 2 band. After four months of diligent searching using many techniques, suspicion came to rest on the trap dipole. This was lowered and the traps removed and there was no sign of interference, either fm sound or harmonics. In this case, the beam antenna was exciting the trap dipole, which was very close, and the currents flowing in the dipole were being rectified by the corroded traps to produce harmonics. The dipole was also picking up sufficient 98.5 MHz signal to beat with the second harmonic of 21.1 MHz and re-radiate the 56.3 MHz difference frequency.

Another actual experience in beat frequencies happened as follows. A 500 watt transmitter and a separate receiver were being operated with separate antennae. When transmitting, the receiver B+ was disabled. The first rf stage received a very strong transmitted signal which drove the rf amplifier grid to cathode as a rectifier and generated harmonics of the transmitted frequency. The cure here was to evolve a different method of disabling the front end of the receiver so that the cathode went very positive (instead of switching off the B+), thus preventing the grid-cathode rectification.

### GROUNDING

One subject which often comes up when considering TVI is grounding. Grounding really has two components--firstly, connecting everything together or "bonding", and secondly, connecting the common bus to a "ground" connection. So far as the effect of grounding on TVI is concerned, it is almost exclusively the first aspect that is required. The reason for this is obvious when one considers the wavelengths of the frequencies associated with television. For example, channel 2 has a wavelength of approximately 16 feet, and channel 4 approximately 14 feet.

Let us assume that our "true" ground connection has a zero resistance. Then, one quarter wavelength away, or about 3 to 4 feet from this perfect connection, we will "see" a very high impedance. Under these conditions, the ground connection is useless--it might better be left open. However, any practical length of connecting bus to ground rod is almost certain to be other than a half wave or multiple, and if any harmonic rf is flowing, radiation is likely to result. In one case investigated, TVI was far worse with the ground bus connected than with it disconnected. The ground wire, which was about 20 feet long, was radiating harmonics coming from a leaky cabinet. As far as TVI is concerned, the reason for bonding everything together is to try and ensure that all exposed metalwork is at the same rf potential, to prevent external currents and to prevent the generation of harmonics by any semi-conducting connections.

### HUMAN RELATIONS:

Up to now, we have been speaking of the technical side of the problem of TVI. What about the social aspect or the human relations point of view. On many occasions the RSO Interference Committee has had to enter situations where the ham and his neighbour refuse to speak to each other. In one case, the situation had degenerated to physical violence--the ham had taken a swing at the complainant. This certainly is not a climate conducive to solving any kind of a problem.

We may KNOW that our rig is clean and that the reported interference is because the neighbour has an old fashioned TV set with a decrepit antenna. However, try to understand the neighbour's point of view. He is merrily enjoying his TV program until you came on the air; then whammo--the picture disappears. Obviously, if we were not transmitting, he would have no problems. Therefore, he is quite positive that you are the cause of his trouble, and he is just as positive that it is up to you to stay off the air as long as you cause interference. It does no good to talk of front end overload, or of harmonics generated in his decrepit

## Challenge of TWI, Cont'd.

antenna system. He thinks the problem is yours--not his--and he expects you to fix it in short order.

Now, if you take the attitude that it may be your fault and that you are taking steps to locate and remedy the problem, there is a much greater likelihood of keeping open the channels of communication. The best bet when you receive a complaint is to arrange as soon as possible for a test with the complainant, having another amateur at his hour while you operate your transmitter. This will do two things. Firstly, the presence of a third party often helps calm down the complainant and demonstrates the sincerity of your intentions. Secondly, the observations of the other ham can be helpful in identifying the nature of the problem.

If indeed, you are causing interference, one of the best approaches is to work on your own rig until your TV set is interference-free. When you get to this stage, you at least know that you are not radiating harmonics from your antenna. This still does not give you the right to tell the neighbour that the trouble must be his, but it does give you some degree of assurance and confidence that you knew your rig is clean. Then you can consider and test for other causes of interference such as harmonics generated in an outside source, if pickup, beat frequencies, etc. With your neighbour's permission, you can try the effect of antenna traps, power line filters, but under no circumstances should you go inside the cabinet. This could leave you open to blame in the event of any subsequent malfunction. If you do diagnose the problem as residing within the TV set, advise the complainant to have his service man fix the trouble and offer your services to guide the service man if he needs it. Most TV set manufacturers will service this kind of problem free of charge, if the cause is a defect in the TV set, so it often pays to contact the manufacturer yourself and see what can be arranged.

By handling yourself and the situation in a mature friendly manner, you can end up with the complainant on your side and with the interference eliminated.

Note 1: We have dealt exclusively with the HF bands in this article, and while we have not mentioned the VHF or UHF bands, the same principles apply.

Note 2: The authors wish to take this opportunity to tank VE3IZ for his assistance.

Note 3: If you have any questions please send them to Paul Helary, VE2CWN, Chairman RSO Technical Committee, Islington 678, Ontario.

\*\* \*\* \*

## SCUTTLEBUTT (Short butts this month).

1. Congratulations--to our own "Ghostwriter" whose column on "Safety in the Shack," etc. was reprinted in the ARNS Bulletin for November (hope the fame hasn't gone to his head or, he isn't resting on his laurels, for we are still awaiting this month's words of wisdom).
2. Understand the reason WB2JZX became an electronics whiz was because of his earlier failure in the field of carpentry. Whereas the average apprentice carpenter requires 47 seconds to saw through a 2 by 4, John required about 38 minutes, or a failing time. (Ray please send that Italian friend of yours down there to put John's blade in the right way).
3. Heard that WA2PVH was asked to take pictures at a Democratic Party Rally over Cherry Hill way. John arrived wearing his big Nixon Button and was nearly "boiled in oil."



SCUTTLEBUT (Cont'd.)

4. Former club stalwart K2SOL now working as head custodian at DuPont's Winterthur Museum. (That's Head Custodian; not head custodian).  
Hope George will again find time to get back on the air soon.
5. Don't forget to get on the club net of your choice!

ATTENTION CLUB MEMBERS " !

The Gloucester County Amateur Radio Club is looking for a good typist to continued setting the Club paper Crosstalk for future years. Our present typist is retiring on December, 1972 issue. So let's try to get someone interested in the job.