# W2MMD

Gloucester County Amateur Radio Club

## 1996 Officers

| | | |
|---|---|---|
| **President** | Bob Krukowski | WA2UDO |
| **Vice President** | Art Strong | KA2DOT |
| **Treasurer** | Al Arrison | KB2AYU |
| **Recording Sec.** | Sam Rosenberg | N2DWK |
| **Corres. Sec.** | Jack Stauffer, Jr. | KA7LAX |

## Directors

| | | |
|---|---|---|
| **Three-Year** | Walt Seitz | KB2JCG |
| | Pete Butler | KA2DZF |
| **Two-Year** | Joe Wells | N2KLE |
| | Goldie Rosenberg | N2YNB |
| **One-Year** | Open | |
| | Open | |

## Trustees

| | | |
|---|---|---|
| **Four-Year** | Stu Cleveland | N2WUP |
| **Three-Year** | Barbara Bielecki | N2SBP |
| **Two-Year** | Chris Chamberlin | N2IVN |
| **One-Year** | Charlie Olinda | N2SRQ |

## GCARC Meetings

### General Membership:

8 p.m., 1st Wednesday every month, Deptford Elks Lodge, Highland Ave., one block from Egg Harbor Road.

### Board of Directors:

8 p.m., 3rd Wednesday every month, GCARC site, Harrison Twp. 4-H Grounds (approximately one mile south of Mullica Hill on Rt. 77).

## 1996 Committee Chairpersons

| | | |
|---|---|---|
| Advertising | Ray | N2WHL |
| ARES/RACES | Chic | WA2USI |
| Awards | Jack | K2ZA |
| Banquet | Bob | WA2UDO |
| Budget * | Bob | WA2UDO |
| Callbook Info. | John | K2JF |
| Clubhouse Site * | Stu | N2WUP |
| Constitution * | Ken | KN2U |
| Crosstalk | Greg | WN2T |
| | Don | N2WFM |
| | Kyle | KB2RVY |
| Data Processing | Charlie | K2PQD |
| DX | Open | |
| Field Day * | Art | KA2DOT |
| Hamfest * | Open | |
| Help | Ken | KN2U |
| Hospitality * | Donna | |
| Legislation | Open | |
| Membership * | Sonny | WB2DXB |
| Nets | Dave | N2TVR |
| Nominations | Bob | WA2UDO |
| Publicity * | Ray | N2WHL |
| Repeaters * | Chuck | WA2TML |
| Scholarships | Greg | WN2T |
| Special Services | Al | N2FJQ |
| Special Events | Walt | WB2OYQ |
| Sunshine | Miriam | KB2EUA |
| Testing | Bill | NT2N |
| Technical | Open | |
| Training | Chic | WA2USI |
| TVI | John | K2JF |
| 4-H Parking | Open | |

( * Standing Committee )

## NETS

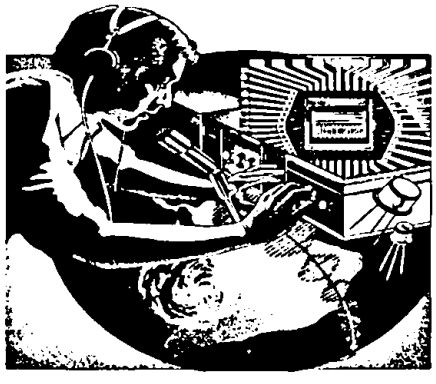
ARES/RACES - Sundays, 2200 Hrs
(147.780/180 & 223.06/224.66 Repeaters)

10 Meter - Sundays following the ARES/RACES net (28.350 Mhz)

## Club Repeaters

147.780/180 Mhz 223.06/224.66 Mhz
447.100/442.100 Mhz (CTCSS 131.8)

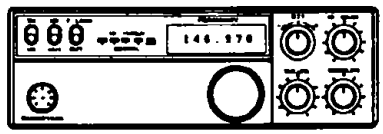
SPECIAL SERVICE CLUB ARRL



GLOUCESTER COUNTY AMATEUR·RADIO·CLUB NEW JERSEY

# GCARC
DEC.1996


# CROSSTALK



A big "Thank You" to Doug Gehring, WA2NPD, for an interesting Club talk on the fine art and science of QSLing!

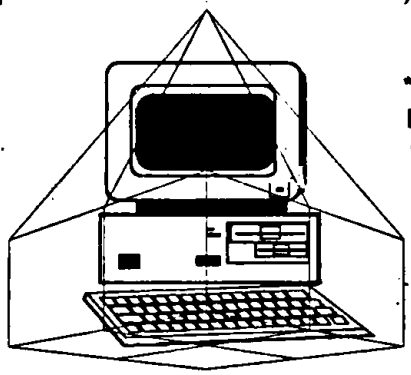
THANK you


## ROLLING YOUR OWN COMPUTER

**by John, KA2EZN**

How to build a computer, and save money.....

Greetings. In this article I am going to stray from radios and describe my experience in building a computer. Computers definitely have their place in the hamshack nowadays, and hopefully this will enable you to build your own computer.



Computers are incredibly simple inside. Here are the main internal components and also what I paid at a computer show:

1) Motherboard (5X86, 133 meg)* $85.00
2) Power Supply and case (mini tower) $29.00
3) Keyboard $16.00
4) 2 gig Harddrive and controller card $200.00
5) Floppy drive and controller card $20.0
6) Video card (2 megs of ram) $44.00
7) Memory (16 megs) $85.00

*The mother board I purchased had on-board floppy and hard drive interfaces, as well as COM ports on board. How much easier can it get?

So, for a very reasonable amount of money it is possible to assemble a fairly state-of-the-art computer. I also installed a CD with soundblaster and a tape drive. I had the CD and soundblaster stuff and bought the tape drive ($150.00), as I screwed up the hard drive installing it. I didn't feel like reinstalling all of the stuff I put on the drive, so I took the lazy way out.

Still sounds like a lot of money? I have built 386 computers using used components for under 75 bucks! It just takes a little time and patience, and careful shopping.

Now, let's talk about the guts inside. Think of computers of lego blocks. That's all there is to it! Plug one gidget into another. After purchasing the above stuff, here's how I assembled my computer. The first thing to do is add the memory. This stuff does not like static. BE CAREFUL! The simms only go in one way, so be sure to mount them correctly.

Take the case with power supply and open it up. There is usually a bag of screws in it, and some plastic clips. The plastic clips snap into the mother board, to hold it on to the case. Look at the motherboard and compare where

*Continued...*

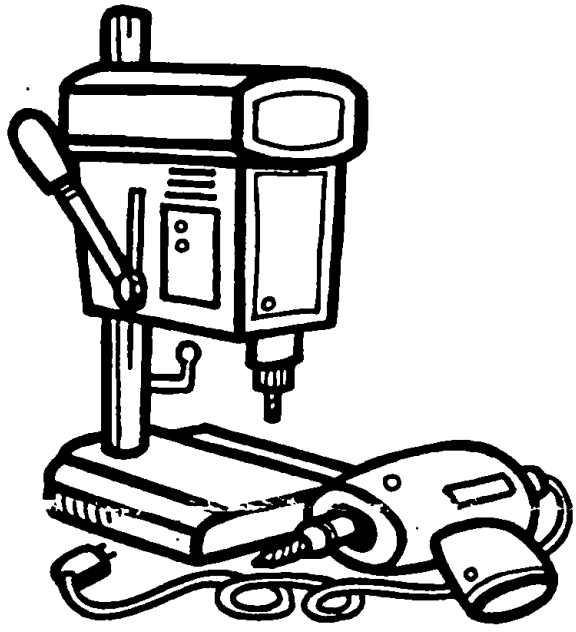
**Stuff for Xtalk?**
Please send on packet to WN2T via "Pitman" (N2SRO) on 145.770
or E-Mail to:
Pott@voicenet.com.
Deadline for Jan. 1997 issue:
*December 22, 1996*

where the holes are on both the case and motherboard. It seems that every case is a little different, hence the reason to look where the holes align. The motherboard will also have a screw or two to install to hold it to the case.

After you mount the motherboard, next thing to do is to hook up the power supply. In every computer that I have built there have always been two plugs for power. Both plugs will have black wires on one side of the plug. The two plugs are installed side by side on the computer. Black wires are always into the center. This means that there is only one way to put the plugs on. Next, I usually find out where all of those plugs for the led's on the case go. I can't describe this as every motherboard is different. Just remember that these LEDs are diodes, and if you put the plug on for a particular LED and it does not light the polarity is reversed.

Now that we have the motherboard installed to the case, and we have the power supply and led's hooked up, (don't forget that reset button!) it is now time to hook up all of those peripherals. Let's start with the drives. Newer motherboards have all the controllers on board. It is important to ask if these controllers are there, because if not you will have to obtain the proper controllers. It is very important to determine what type of hard drive you have (IDE, RLL, MFM) and get the proper controller for it. Most drives that I run into nowadays are IDE. IDE is a description of the type of interface what the drive requires to communicate with the motherboard. The same is true for RLL, MFM, etc.

Mount the floppy drive into the machine. Use the appropriate cable to hook it up to your motherboard or controller. Most cables for floppy drives have two connections. If you look at the cable, you will notice that there is a twist on some of the wires between the two connectors for the floppy drive. The outermost plug is for the A drive, and the inner one is for the B drive. The twist allows the motherboard to identify which drive is where. Also if you look at the cable, you will see a red line on one side. The red side always goes to pin one on any device. Look at the floppy drive at the connector, and you will see one side marked with a 1. This is the side to place the red side of the cable on. Also, there is a power connector for the peripherals. It can only go in one direction, so be sure to plug that in as well.



It is now time to add the hard drive. Be careful with the drive, as they don't like to be dropped or jarred. Again, using the same instructions above run the cabling and power connector. It is usually a good idea to write down the model of the hard drive and it's parameters for installation. (You will need this information for CMOS setup.) If there are any other peripherals such as tape backup, and CD ROM and soundblaster now is the time to add them.

Don't forget that video card! There are several types of video cards, so make sure that your motherboard can support the card that you purchase. Many computers use a VESA type of card, although the last one I built used a type called PCI. It does not matter what type of card you use, as long as you have the hardware support for it.

That's all there is to it! Now it is time to add the monitor, keyboard, and mouse and fire the thing up. It will be necessary to go directly into the CMOS to set up the time, date, and hard drive parameters. It is fairly self explanatory. Take the info from the hard drive and move it into the CMOS. It should be possible to scroll through the choices for the C-Drive. If you do not see a match for your hard drive, it will be necessary to go into the user (Type 47) and type in the parameters. It is not difficult. Just insert the info from the hard drive, and save it to CMOS memory. Also, since this is the first time the computer is booting, make sure the CMOS is looking for the A-Drive first and the floppy is enabled.

It will be necessary to have a DOS disk, and use it to format your hard drive. Sometimes the CMOS has a hard drive format utility in it. If it does, take advantage of it and use it. Otherwise you will need to do it from DOS. Again, no big deal.

I am told that a hard drive should be run at least an hour or so before formatting. I have always followed the rule, and I have never lost a hard drive. So, I recommend that you wait an hour after turning on the computer, and let the drive "run in".

Now that you have built the computer, and have formatted the drive, it is time to add programs and enjoy! You have just saved a bundle of money, and now can be proud of the fact that you have a custom computer that you built.

73, John KA2EZN

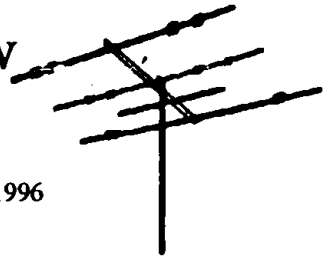

Icom 730 High Frequency Transceiver (100 Watts Output) in good condition. $300.00.

3-Element Triband (20/15/10 Meters) Beam in good condition. $90.00.

30 ft. Aluminum Tower with heavy-duty mast and TV-type rotator in good condition. $120.00.

Contact Mary Aaron

## QST de W1AW



DX Bulletin 52 ARLD052
From ARRL Headquarters
Newington CT November 21, 1996
To all radio amateurs:

This week's bulletin was made possible with info provided by Tedd, KB8NW, the OPDX Bulletin, the DX News Letter, The599 Rpt, Jean, F6AJA, David, W2QM, and Contest Corral from QST. Thanks to all.

EQUATORIAL GUINEA, 3C. Marv, N5AW, and Phil, N6ZZ, are operating from Bioco Island, Equatorial Guinea. Their callsigns are 3C5A and 3C5Z, respectively. They plan to operate 3C5Z in the CQWW CW Contest as a Multi/Single entry, and also plan to operate on the newer bands outside of the contest. QSL both via N6ZZ.

NEW CALEDONIA, FK. Eric, FK8GM, and Eddy, FK8CR, will operate as FK5M from Matthew Island from December 2 through 6. Look for their SSB on 3790, 7075, 14195/260, 21260, and 28460. They will also be active on the usual CW and RTTY DX frequencies. QSL via F6AJA.

FRENCH ST MARTIN, FS. Members from the North Jersey DX Association will operate SSB and CW as FS/W2QM on all bands from December4 through 11. QSL via W2QM.

AMSTERDAM ISLAND, FT5Z. FT5ZG will soon be active from this location. He will operate from here for one year. QSL via F5RQQ.

ECUADOR, HC. Look for Bernd, DL1VJ, to be active in the upcoming CQWW CW Contest as HC1OT. Activity will be on all bands.

GALAPAGOS ISLANDS, HC8. Trey, N5KO, will be active as HC8N on all bands in the CQWW CW Contest. He will also be active as N5KO/HC8 before and after the contest. QSL via AA5BT.

LUXEMBOURG, LX. Look for LX4B during the CQWW CW Contest as an 80 meter single band entry. QSL via LX1TI. LX/DF0BK will be active in the contest as a Multi/Single entry. Activity will be on 160 through 10 meters. QSL via DL8SCG.

FINLAND, OH. The SRAL has authorized OH7AAC to use callsign OI7T. He will be active as a Multi/Single entry in the upcoming CQWW CW contest. QSL via OH7AAC.

BRUNEI, V8. Hajime, JO1RUR, will operate as V85HG in the upcoming CQWW CW Contest as a Single/All Band entry. QSL via JH7FQK.

ST HELENA ISLAND, ZD7. Johnny, ZD7WRG will be QRV on 80 and 40 meter SSB for the next several months. QSL via WA2JUN.

***(Tks Ken, N2CQ, for feed)***

OOOOOOOOOOOOOOOOO

**Happy Birthday for the month of December from all the members of GCARC!**

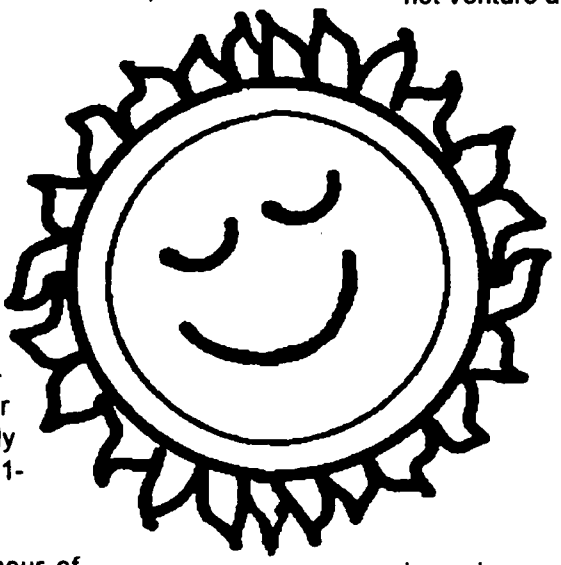

| | | | |
|---|---|---|---|
| WB2VNS | VINCENT | GADZINSKI | 2 |
| N2SBQ | KELLY | GLANS | 4 |
| KE2ES | TOM | GORMAN | 5 |
| WA2VQG | WILLIAM | HELMETAG | 6 |
| W2LVW | JAMES | PECK | 7 |
| KB2JCG | WALTER | SEITZJR | 9 |
| WA2MEM | JOHN | WHITE | 11 |
| KA2ZZA | VIRGINA | MACRIE | 16 |
| N2PKT | LOUIS | IOCONA | 17 |
| NT2N | WILLIAM | O'DONNELLSR | 18 |
| K3WIN | ARTHUR | GOLDMAN | 19 |
| KG2V | ALLEN | MILLER | 19 |
| KB2RGR | JOHN | MARSHALL | 21 |
| KB2VXC | JOHN | SCHUMACHER | 22 |
| WB2AOL | JAMES | McDONALDJR | 29 |

**Tks Database, Charlie, K2PQD**

## PART 5

### Regular Variation of Ionosphere

GENERAL — Since the existence of the ionosphere is dependent on radiations from the sun, it is obvious that the movements of the earth about the sun, or changes in the sun's state of activity which might serve to cause an increase or decrease in the amount of its radiation, will result in variations in the conformation of the ionosphere. These variations include those which are more or less regular in their nature and, therefore, can be predicted in advance -- and the irregular variations resulting from the abnormal behavior of the sun. For purposes of discussion, the regular variations may be divided into four classes: the DIURNAL or daily variation, the Seasonal, the 11-Year, and the 27-Day.



DIURNAL (variation with hour of day-K index): F layer - height and density decrease at night..E layer -height approximately constant, density follows vertical angle of sun. Practically nonexistent at night. D layer - appears after dawn. Density follows vertical angle of sun, disappears at night.

SEASONAL: F2 layer - Virtual heights increase greatly in summer decrease in winter. Minimum predawn density reaches lower value in winter. 11-YEAR Sunspot Cycle: Layer density increases and decreases in accordance with sunspot activity. Unsettled to active conditions will exist during rise (We are starting in the decrease - Cycle 22 ).

27-DAY (SUNSPOT) - Recurrence of SIDs (Sudden Ionospheric Disturbances) and ionospheric storms at 27-day intervals. Disturbed conditions frequently may be identified with particularly active sunspots whose radiations are directed toward the earth every 27 days as the sun rotates.

DIURNAL— For the most part, the diurnal variations and their effects upon the ionsphere layers tell us that to compensate for the resulting variation in the skip distance, it is suggested that higher medium frequencies be used during the daytime, and lower medium frequencies at night. The reason for this appears in the fact that the ion density of the F2 layer is greater during the daytime and will reflect radio waves of higher frequency than the F layer will reflect during the night. The higher frequency waves suffer less absorption in passing throughout the D region, whereas at night the disappearance of the D region permits the use of lower frequencies.

SEASONAL — As the apparent position of the sun moves from one hemisphere to the other with corresponding changes in season, the maximum ion density in the D, E, and F1 layers shift accordingly, each being relatively greater during the summer. The F2 layer, however, does not follow the pattern in seasonal shift. In most localities, the F2 ion density is greatest in winter and least in summer, which is quite the reverse of what might be expected from simple theory (I will not venture any further into this now).

ELEVEN-YEAR — That sunspot activity varies according to an 11-year cycle has been known since 1851. Shortly after the discovery of this phenomenon, a method was devised for measuring the relative intensity of sunspot activity, and, by means of this method, the alternators from maximum to minimum have been followed closely through the years. Briefly, the method entails the use of the so-called WOLF sunspot number, a number obtained for each day by multiplying by 10 the number of distinct visible sunspot groups and adding thereto the number of individual spots observable in the groups. The increased activity at times of sunspot maxima is reflected in an increase in ion density of all the ionosphere layers, resulting in higher critical frequencies for the E, F1 and F2 layers, and higher absorption in the D region. This permits the use of higher frequencies for communication over long distances at times of sunspot maxima than would be useable at time of sunspot minima (watch 15, 12, 10, and 6 meters open up we get when the Solar Flux number are up around 250).

TWENTY-SEVEN DAY — As the number of sunspots changes from day to day with solar rotation or the formation of new spots or the disappearance of old ones on the visible part of the sun, absorption of the D region also changes. Similar changes are observed in the E layer critical frequency. These variations exhibit wide geographic range; they are not effects that are observed at one station and not observed at other. Because of the variability of the F2 layer, precise predictions of critical frequencies cannot be made. Trends and geographic distribution may be outlined accurately in advance. It is necessary in selecting frequencies for long-distance communications (DX) to allow for these fluctuations.

Check the Indices Forecast that is given every 18 minutes after the hour on WWV at 10, 15, 20 MHz.

The next section will be on Irregular Variations of Ionosphere

C U in the PILE-UPS K2JF