

## Gloucester County Amateur Radio Club

### 1996 Officers

<b>President</b>	Bob Krukowski	WA2UDO
<b>Vice President</b>	Art Strong	KA2DOT
<b>Treasurer</b>	Al Arrison	KB2AYU
<b>Recording Sec.</b>	Sam Rosenberg	N2DWK
<b>Corres. Sec.</b>	Jack Stauffer, Jr.	KA7LAX

### Directors

<b>Three-Year</b>	Walt Seitz	KB2JCG
	Pete Butler	KA2DZF
<b>Two-Year</b>	Joe Wells	N2KLE
	Goldie Rosenberg	N2YNB
<b>One-Year</b>	Open	
	Open	

### Trustees

<b>Four-Year</b>	Stu Cleveland	N2WUP
<b>Three-Year</b>	Barbara Bielecki	N2SBP
<b>Two-Year</b>	Chris Chamberlin	N2IVN
<b>One-Year</b>	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).

#### Club Repeaters

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

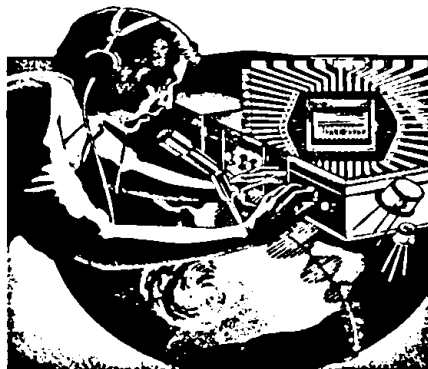
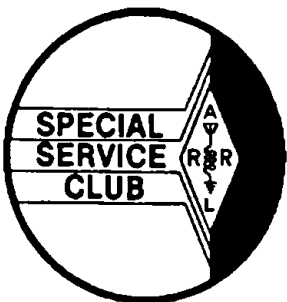
## 1996 Committee Chairpersons

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
	Charlie	K2PQD
Data Processing	Open	
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

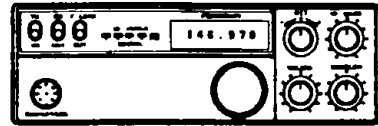
ARES/RACES - Sundays, 2200 Hrs  
(147.780/180 & 223.06/224.66 Repeaters)  
10 Meter - Sundays following the  
ARES/RACES net (28.350 Mhz)



**GCARC**  
NOV. 1996



**CROSSTALK**



### In Memorium

Hyman Friend (KB2GH) was born in England on May 12, 1902. He married Fay Richards in England and shortly afterwards moved to America. One of Hy's first regular jobs was operating a spark gap telegraph on board a cargo vessel for a steamship company. Many times he told the story of the first message sent to him. He was so scared he never answered it. (Kind of like receiving your first "de" when trying for a Ham License.)

Hy was with the OSS (Office of Strategic Services) during the Second World War and was dropped behind the enemy lines to teach radio and code to the natives so that they could let us know what the enemy was doing. After returning from military duty he opened a HI-FI store on Arch Street in Philadelphia which he and his wife operated until he retired. After retirement Hy got involved with Ham Radio and started two businesses -- one of which he sold 8 years ago and the other was in operation up until his death on October 9, 1996 at the age of 94.

Hy was a member of a number of organizations. Among them was the GCARC, the Williamstown Kiwanis and various Masonic organizations. He will be missed by his many friends. (Russel Glans, N2ASV)

#### Stuff for Xtalk?

Please send on packet to  
WN2T via "Pitman"  
(N2SRO) on 145.770  
or E-Mail to:  
Pott@voicenet.com.  
Deadline for December  
issue: *November 24, 1996*

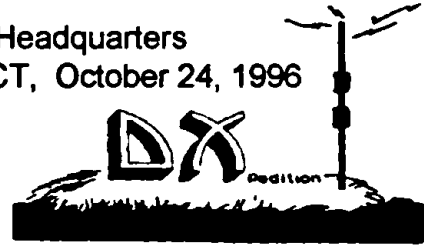
**QST de W1AW**

**DX Bulletin 48 ARLD048**

To all radio amateurs

From ARRL Headquarters  
Newington, CT, October 24, 1996

This week's  
bulletin was  
made possible with



info provided by Tedd, KB8NW, the OPDX Bulletin, the DX News Sheet, The 599 Report, and Contest Coral from QST. Thanks to all.

EQUATORIAL GUINEA, 3C. Teo, EA6BH, and others will be active as 3C1DX in the CQ WW contest. They also plan to be active until October 31.

NIGERIA, 5N. Pat, 5N0T, will be signing 5N36T as a Single Operator all band entry in the contest. The special prefix will be used until October 31 to celebrate the 36th Anniversary of Independence of the Federal Republic of Nigeria. QSL via F2YT.

LESOTHO, 7P. Wolf, OE2VEL, will be active as 7P8EL in the contest, also before and after with CW on the new bands. QSL via OE2DYL direct or via the bureau.

OMAN, A4. Tony, A45ZN, will be active as a Single Operator in the contest. He states 6 and 30 meters operation is not allowed in Oman but thinks there is a chance of some limited 6 meters operation soon. QSL direct.

Continued

ZAMBIA, 9J. Ely, 9J2CE, will be QRV from Lusaka October 26 to November 15. QSL via IN3VZE.

NEW CALEDONIA, FK. Look for the special contest call FK5DX in the contest. Operators Eric, FK8GM, and Franck, FK8HC, will operate on all bands as conditions allow. QSL via WB2RAJ.

GALAPAGOS ISLANDS, HC8. Look for HC8N to be a Multi/Single entry activated by WN4KKN, WX3N, VE3EJ and HC1OT. They suggest looking for them on 1840 kHz calling CQ on the half hour between 0600 and 1100z and on 75 meters anytime during the night. For JA they will make special attempts to listen split, especially around 3752 kHz. QSL via AA5BT.

ENGLAND, M6. The G0KPW gang decided to make use of the new UK contest call sign and will be signing M6T this year as a Multi/Multi entry.

GUAM, KH2. Gary, NH2G, in CQ Zone 27, will participate as a Single Operator. All-Band entry in the contest. QSL via WF5T.

CENTRAL AFRICAN REPUBLIC, TL. Stefan, TL8MS, in Baboua, will take part in the contest as Single Operator with activity mostly on 40, 20 and 15 meters. QSL direct to DL6NW or via the bureau.

ANGUILLA, VP2E. Robert, WB5CRG, will use the call sign VP2E for a 20 meter single band effort in the contest. QSL via WB5CRG CBA for the contest only.

MACAU, XX9. Martti, OH2BH, indicates there will be a Multi/Multi effort by XX9X in the CQ WW contest. The operators are OH1KAG, OH2BH, OH2BVF, OH2PM, OH6DO, XX9AL, XX9AS, XX9KC and XX9MD. QSL direct to Martti Laine, OH2BH, Nuottaniementie 3 D 20, FIN 02230, Espoo, Finland, Europe.

MARION ISLAND, ZS8. Chris, ZS8IR, has announced that he will be active in the CQ WW SSB contest as an all band entry. He will put up his Battle

Creek Special antenna for that extra help on the low bands for this rare multiplier.

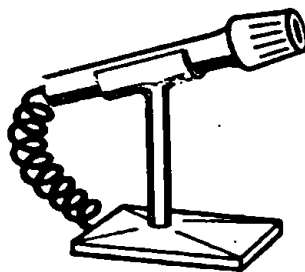
## Field Day - Get Ready NOW!

I see where in QST our score for Field Day is printed as 2,949 under the 4A



category. Those who participated had some fun. One gang ran 40 meter QRP. I am sure we can have a much better turnout this coming year. Here is a great way to learn about operating any mode and frequencies. There was a lot of fun with one gang working six meters and 75 meter SSB. So, start thinking which bunch of fellows you want to work with and put on your "thinking caps" as to the gear and antennas you may want to use. Tnx K2JF

## ARRL 10-METER CONTEST



*N*ow here is one for all you Tech, Tech-Plus and Novices. The 10 Meter Contest period is from 0000 UTC Saturday, December 14 to 2400 UTC Sunday, December 14 (a

48 hour period). Your exchange is simple and straight forward: You exchange signal report and your state. DX stations will send a signal report and serial number. They don't need to send their country - their prefix tells you that. The only thing you have to remember is that 28.3 through 28.35 MHz is designed as a non-contest window. No calling "CQ Contest" in that window. There are suggested frequencies for Novice and slow-speed CW.

So go to it you fellows. Here is a chance for you to get your "feet wet" in contesting. You can get all the information and forms two ways. One by Internet or e-mail to: [info@arrl.org](mailto:info@arrl.org) (Ignore the object line.) Enter the following text in the body of the message: HELP SEND 10M.FRM SEND 10.RLS QUIT

Tks John, K2JF

## NOW TALKING ABOUT CONTESTS ...

Here is one that everyone can get into and have a lot of fun. This is the one many Hams including myself broke into contesting with. It is fun and you can earn your W.A.S. (Worked All States) certificate in one contest or at the most the two contests.

### THE ARRL NOVEMBER SWEEPSTAKES

#### Contest Period:

	UTC	EST
Starts	2100	4 PM
Ends	0300	10 PM
CW:	Saturday, November 2 thru Sunday, November 3 (local time)	
Phone:	Saturday, November 16 thru Sunday, November 18 (local time)	

#### Explanation of Exchange:

Number (Consecutive Serial #)	Precedence (Power Output Less than 100W PEP)	Call Sign	Check Section (Last 2 digits of year first licensed)	Location
NR180	A	K2JF	38	SNJ

Now all you HF operators can hop on the "band wagon" and have some fun. CW operators dust off and polish your key. For you SSB lovers, this is just about the finest operation event you're going to find. So come on and have some fun on HF:

Tnx K2JF

## CROP WALK

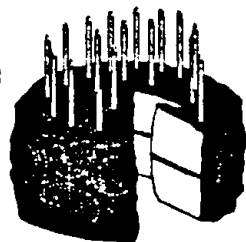
The Crop Walk Committee wishes to thank the following Amateur Radio Operators from the Gloucester County Amateur Radio Club who assisted us in a very successful CROP WALK this year.

K2JF	JOHN FISHER
K2ZA	JACK ZARUBA
KB2RGX	BOB LACHENMAYER
KB2UYT	RON CLOCK
KB2ZLO	SAM ZEOLA
KE2WC	MARK MASTROGIACOMO
WA2VKG	LARRY (THE WALKER)

With your help we have pledges around \$5000. We collected 125 jars of Peanut butter. We had about 80 walkers. We were told that the walkers felt good in their walk when they were able to see the Amateurs with their bright shirts knowing that instant communication was available in case of an emergency.

Tks K2JF

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



K2JF	JOHN	FISHER	1
K3JGJ	JOE	MC CONAGHY	5
KA2FFS	ANTHONY	SCANDURRA	5
WA2IBZ	HOWARD	MARDER	9
N2JXS	ELEANOR	MATTISON	10
WB2LNR	RAYMOND	MARTIN	14
N2CFW	GEORGE	HANKINS	17
N2ASV	RUSSEL	GLANS	24
KA3RVX	DENNIS	FLANIGAN	28
KA2DZF	PETER	BUTLER	29
N2DJN	HANK	BASTH	30

DATABASE - C. SKETCHLEY, K2PQD

## A Continuing Series ...

### IONOSPHERE CHARACTERISTICS

**CRITICAL FREQUENCY**— In addition to the height the principal ionosphere characteristic which controls or determines long-distance radio transmission is the ionization density of each of the layers. The higher the frequency, the greater the density of ionization required to reflect waves back to earth. In other words, the shorter the length of the waves, the more or more closely compacted must be the medium to refract them.

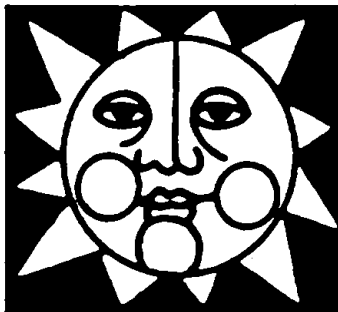
Therefore, the upper layers, which are the most highly ionized, reflect the higher frequencies, whereas the D layer which is the least ionized, does not reflect frequencies above approximately 500 KHz. Thus, at any given time, FOR EACH LAYER there is a value of highest frequency, called the **CRITICAL FREQUENCY**, which waves sent vertically upward are reflected back directly back to earth. Waves of frequencies higher than the critical frequency pass on through the ionized layer and are not reflected back to earth, unless they are reflected from an upper layer.

This phenomenon may be understood in terms of the combined refractive and reflective effects of ionization on an electromagnetic wave. When a ray, or train of waves, enters an ionospheric layer, it is slowed down as soon as it starts to penetrate the layer. This process of refraction is similar to that of refraction of light passing from air to water. When the signal enters the ionosphere at a 90 degree angle, there is no bending of the wave - the whole wave front is slowed down uniformly. The higher the frequency of the signal, the deeper it must penetrate the layer before it surrenders all of its energy.

It should be remembered, however, that an ionization layer is most dense near its center and that the wave will pass on through if this center density is insufficient to absorb all of the energy. This surrendered energy is reradiated by the layer, directly downward to the area of transmission.

**CRITICAL ANGLE**— The determination of a critical frequency by vertical propagation is useful be-

cause it marks a boundary condition. Electromagnetic waves used in radio communications, however, are generally incident at some oblique angle to the ionosphere. These waves are refracted by the ionosphere and may or may not be returned to the earth, but frequencies above the critical frequency ALSO will be returned if propagated at certain angles of incidence. At angles of incidence near the vertical, a given frequency passes on through the ionosphere. But as the angle lessens a point is reached at which the wave is reflected back to earth. This angle is called the **CRITICAL ANGLE**. The point at which the wave returns is a **MINIMUM** distance, called the **SKIP DISTANCE**. At smaller



angles of incidence, the wave returns at greater and greater distances. (This is why you try to have a low angle of radiation from your antenna.) The wave is both bent and reflected, and therefore in propagation work the terms **REFRACTION** and **REFLECTION** tend to be used interchangeably.

Since the central parts of the ionosphere have a greater ion density, the bending effect on the upper part of the wave front is greatest, so that wheeling process continues and the waves are directed back toward the earth.

**VIRTUAL HEIGHT** — Draw a curve from the transmitting position to the receiving position bending it at some depth of the ionosphere. Then take two lines straight up from the transmitting position and the receiving position. Where they intercept, call it "h." Then draw a line perpendicular from the earth to the intersection of the two projected straight lines "h" of the path. This point is called the virtual height of the layer.

Note that this virtual height is considerably greater than the actual layer height. However, it is convenient and an important quantity in measurements and applications involving ionospheric reflections.

The next section will be on: "*Regular Variations of Ionosphere.*" Such topics as Diurnal, Seasonal, Eleven-Year, Twenty-Seven Day Cycle.

Good luck 73 John K2JF

# Ham Radio Online - Threats to Amateur Radio 2

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## Would You Believe the FCC Might Support Ham Radio?

As reported in our June opinion piece, as you've read in the July 1996 issue of QST, and as you have certainly seen in various online newsgroups and forums, there are definite concerns with frequency allocations to the Amateur Radio Service. In particular, as an economic value has been assigned to spectrum, many politicians believe all spectrum should be auctioned and treated like real estate: You buy what you can afford and put to use.

Times have changed and Amateur Radio needs to roll with the punches. Sticking our heads in the ground and pretending that everything is as it always has been is not a good strategy. We are in a new era. Amateurs are necessarily concerned as to how they fit in to an allocation process that measures value solely in terms of how much someone is willing to pay for the spectrum.

Of interest, and apparently lost in recent online discussions, is that the FCC itself may understand that auctioning away the ham radio spectrum is the wrong action. You can read this for yourself in this transcript from the March 1996 En Banc Hearing on Spectrum Management. We will continue to write on this topic throughout the summer months. We will do our best to write in a factual way and to highlight that all is not gloom and doom. Amateur Radio will prosper and become the hobby of the 21st Century!

We encourage you to write a letter to the FCC as described in the QST July Editorial, or reprinted in Ham Radio Online Urgent Message from ARRL HQ. In just 4 weeks, over 2,000 of you read this article at Ham Radio Online! And now, here is the transcript of the FCC hearing on future spectrum policy issues that specifically concerns Amateur Radio:

MR. HATFIELD: Yes. To keep my answer short, generally I think the presumption should be in favor of auctions. There are — in shorthand, the two times that it would apply is when there is exclusive rights for the exclusive use, which we've already talked about, it should apply there; and, secondly, if there is no overriding social issues or, in particular, there is no marketplace failure.

And the example that I would give of that if one group we have not heard here is amateur radio operators, for example, and it seems to me — and I'm a ham, I confess — and it would seem to be very hard to aggregate funds from enough hams to be able to buy spectrum, and yet I would argue that there is a large social benefit from having kids being able to experiment with radio as I did when I was 13 or 14 years old.

COMMISSIONER NESS: So you would not auction the ham spectrum.

MR. HATFIELD: Exactly, exactly, exactly, exactly.

COMMISSIONER NESS: I'd have a hard time with Dave Sidell on my staff, who is also a ham radio —

MR. HATFIELD: Yeah. Right, right. No, I didn't talk with him advance. But that's sort of an extreme example, but that's very clearly where there is a marketplace failure. You wouldn't capture, because of the transaction costs, you wouldn't be able to capture the full value to society of that spectrum.

COMMISSIONER NESS: Wayne, would you agree that we ought not to auction the ham radio spectrum? You were smiling at that point.

MR. PERRY: Yeah. There are things that obviously — you have a public policy obligation, and you need to set the parameters of what these services are going to be used for, and then I think the auctions are the most efficient way of providing the service.

MR. PERRY: Yes.

COMMISSIONER NESS: — and the allocation ought to be based on more than just simply a marketplace determination based on auction.

MR. PERRY: I believe that's appropriate.

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November 1 - 30, 1996

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					Nov. 1 HA-QRP Test	Nov. 2 ARRL Nov. Sweepstakes, CW; No. Amer. Collegiate ARC Champ. CW
Nov. 3 20:00 ARES/RACES 20:30 10 mtr Net - 28.350 Mhz	Nov. 4	Nov. 5	Nov. 6 GCARC General Membership Meeting 20:00	Nov. 7	Nov. 8	Nov. 9 OK/OM DX Test
Nov. 10 20:00 ARES/RACES 20:30 10 mtr Net - 28.350 Mhz; Fest- Washington, PA	Nov. 11	Nov. 12	Nov. 13	Nov. 14	Nov. 15	Nov. 16 ARRL November Sweepstakes, Phone; No. Amer. Collegiate ARC Champ. Phone
Nov. 17 20:00 ARES/RACES 20:30 10 mtr Net - 28.350 Mhz	Nov. 18	Nov. 19	Nov. 20 20:00 GCARC Board of Directors Mtg	Nov. 21 VE Exams Bellmawr @ 7 p.m (Doors open 6:15 p.m.)	Nov. 22 Fest- Fair Lawn, NJ	Nov. 23 ARRL Inter. EME Test; CQ WW DX TEST,CW
Nov. 24 20:00 ARES/RACES 20:30 10 mtr Net - 28.350 Mhz		Nov. 26	Nov. 27	Nov. 28	Nov. 29	Nov. 30
Deadline December Crosstalk!					