

Crosstalk

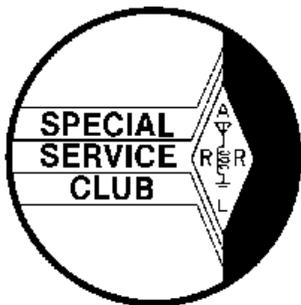
Issue #12

December, 2000

President's Message



affiliated club



Just a reminder that we will be holding our annual elections for 2001 at the December meeting and I would like to see as many members come out as possible and vote. It is your club and you do have a say in who your elected Officers will be. Fortunately it can't turn out like the trouble down in Florida. Our elections are pretty much cut and dried.

The nominations for club officers for 2001 are as follows:

President: Ray Schnapp - WB2NBJ
V. President: Bob Budd - KB2EAH
Treasurer: Bob Krchnavek - K2DAD
Recording Secretary: Harry Bryant - AA2WN
Corresponding Secretary: Chris West - WA2MVU

Director (2) - 3yr.: Lou Joseph - W2LYL
Bob Krukowski - KR2U
Gene Shoeberlien - AA2YO

Trustee (1): Gene Wallace - N2IMK
Tony Scandura - KG2MY

Last weekend a number of us went to Wayne's World down near Batsto and had quite a time with the contest. I thought I was taking my 706 down as a backup. Not so. It was "the" rig as Dave's (W2YC) plans changed as to how he was going to operate. Anyone want to see a "mobile" station needs to look inside Dave's car and trunk. What a setup! I can only imagine what the vehicle inspection person must think when they get in his car for inspection. We ate well as provided by Chef Boy-R-Wayne who did the cooking for us. It was a lot of fun and maybe we can do it again next year.

This is my last President's message as your duly elected Prez. and I'm looking forward to being able to sit in the back and heckle the new officials come January 3rd. After four years that involved various periods of time as Crosstalk Editor, Database Chairman, Membership Chairman, and President, with some overlaps, it's time to take a breather for awhile. A very positive aspect of being involved like this, especially as President, is that I got more involved with people that I didn't know very well and got to make more friends from mere acquaintances. The people part was the most important part.

In closing, good luck and best wishes to the incoming Officials and I hope you all have the enjoyment that I did.

73's and see you at the meeting. Art - KA2DOT

DX Dope

By Doug Gehring WA2NPD

This column made a statement a few months ago, that antenna polarization doesn't matter with respect to HF propagation. This is because, in HF long distance transmission, the signals undergo ionospheric layer reflection, which disturbs the polarization of the wave, such that, the reflected wave is now randomly polarized (i.e. contains both vertically and horizontally polarized elements). Hence, the polarization of the transmitting DX antenna makes not one bit of difference with respect to the receiving antenna polarization.

One can argue that this is not strictly true in regards to HF reception; because there is, after all, a receiving technique called "Polarization Diversity", although not especially popular. Here, one uses two receivers for reception, one with a vertical antenna, and the other with a horizontal antenna. The trick here is the incoming HF signal seldom has both polarization waves fade (or QSB) simultaneously; hence by combining the receiver AVCs [*Automatic Volume Control- Ed*], the set with the stronger signal will bias out the set with the weaker signal, and the result will be a steady, longer lasting receive signal from the DX station. Not a bad idea - if one has the antenna space and can afford a second receiver.

Well, let's see what's good for this month. John, K2JF, reports that the 11 year sunspot cycle peaked last July, but that the downturn will be quite gradual. We should have 2-3 years yet of peak conditions. Also note the A5 operation (below) supposedly will have an amplifier - which should be good news for those on 160, 80, and 40 meters.

Station	Dates	Freq/Mode	Rarity	Country
A52UD/AP	12/1 - 12/12	All; SSB, CW, RTTY	5	Bhutan
VK0MM	to 12/16	30, 20; SSB, CW	5	MacQuarie Is.
PY0ZFO	12/6 - 12/13	160-6; SSB, CW	3	Fern. De Noro.
ZD8Z	11/21 - 12/9	80-10; SSB, CW	3	Ascension Is.
SY2A (1)	till 12/31	20, 15, 10; SSB	5+	Mt. Athos
V47UY	12/10 - 12/18	80-10; SSB, CW	2	St. Kitts
UE9XAB/XAC	till 12/31	All; All	3	Siberia
J8/G0WHP	11/16 - 12/12	Not Given	3	St. Vincent
DU7/G3IZM	12/19 - 1/5	80-10; SSB, CW	3	Phillipines
FS/W2JJ	12/5 - 12/12	All; SSB, CW	2	St. Martin

(1) Special Call

* 5 is rarest

TNX to 59(9) report, 425 DX News, K2JF, AA2WN, and WA2LET

PART 4 IONOSPHERE CHARACTERISTICS

By John Fisher K2JF

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.

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PART 4 IONOSPHERE CHARACTERISTICS *continued*

CRITICAL ANGLE-- The determination of a critical frequency by vertical propagation is useful because 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 call 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-- If one should 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."

DELAWARE VALLEY 2 METER FM SIMPLEX CONTEST ANNOUNCED!

(Philadelphia, PA) The Holmesburg Amateur Radio Club of Philadelphia is pleased to announce the first Delaware Valley 2 Meter Simplex Contest to be held February 3, 2001.

The contest is open to all radio amateurs. Stations within a 60 mile radius of Philadelphia's City Hall will exchange their zip code and contact number. Stations outside of the 60 mile radius will exchange their state and contact number. Stations from New York to Maryland will be able to participate in this evening event.

According to HARC President Bob Josuweit, WA3PZO, the contest is designed for hams to have fun over a 4 hour period from 7-11 PM on a Saturday night. The contest allows hams to meet their neighbors on the air as well as give many the opportunity to experience something else besides repeater contacts. The 60 mile radius reaches just about all of the county boundaries surrounding Philadelphia. This also opens up an opportunity for approximately 60 clubs to participate in the event. When choosing City Hall as the center of the contest, Josuweit noted the statue of William Penn on top of City Hall. "What better center point for the contest and the sponsoring organization whose club call is WM3PEN."

The contest gives individuals as well as clubs to participate in the event. Bonus points are being allowed for contacting club stations/callsigns. "We realize that everyone will not be able to contact WM3PEN so we're giving clubs a chance to put their club callsign on the air." This could be from a club station or an individual's home. "We don't know what the weather will be in February, but this gives everyone the chance to operate from home." Clubs wishing to enter a club callsign as a bonus point contact station in the event are asked to send a note to WM3PEN@HARCNET.ORG. by December 16, 2000. A complete list of all bonus stations will be published by December 22, 2000.

Contacts can be made on any 2 meter FM voice frequency provided there is no interference to repeater, digital, satellite, or other activities taking place in the two meter band. Contacts on 146.52 will not be permitted.

HARC members are excited about the event. Here's a contest where they can spend a few hours on the radio, participate in a contest, and not be tied up for an entire day or weekend.

The idea of a 2 meter simplex contest originated in Western Pennsylvania with the Wireless Society of South Hills. They will be holding a 2 meter simplex contest in January.

Awards will be issued to individual top scores in a high and low power category. Club station awards will also be issued in the high and low power category. There is also an opportunity for Clubs to sponsor awards for their members in a high and low power categories. An award will also be issued for the highest mobile score.

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**DELAWARE VALLEY 2 METER FM SIMPLEX
CONTEST ANNOUNCED!**
continued

For further information contact WM3PEN@harcnet.org or
WA3PZO@harcnet.org.

SAMPLE CONTACT EXCHANGE

1. If you live in the 60 mile radius of William Penn (Philadelphia City Hall) KB3AKK de WA3PZO Pse copy Nr.1 zip 19136
2. If you live outside of the 60 mile radius
WA3PZO de N3EFN Pse copy Nr. 1 PA.
3. If you work HARC's club call WM3PEN exchange your information and make a note that it is the sponsoring club call and worth 3 points. Other club calls will be worth 2 points. All other contacts count as 1 point. Final score will be the number of contacts X the number of zip codes/states in high (10W or more) and low power (less than 10W) categories. Individual, club station, and mobile awards will be issued. Clubs can issue their own membership awards.

A list of zip codes up to 60 miles from Philadelphia's City Hall is available.

GCARC Officers

President - *Art Strong KA2DOT*
Vice President - *Gene Wallace N2IMK*
Treasurer - *Bob Krchnavek K2DAD*
Recording Secretary - *Open*
Corresponding Secretary - *Chris West WA2MVU*

Board of Directors

Chuck Colabrese WA2TML
Wayne Wilson WA2LET

Al Arrison KB2AYU
Bob Krukowski KR2U
Bill Blakeley WA2ADB

Happy Birthday

Congratulations to the following club members:

Art Goldman K3WIN 12/19
Tom Gorman KE2ES 12/5
Jim McDonald WB2AOL 12/29



Crosstalk Submissions

All submissions, queries, comments, editorials, or requests for interviews may be directed to:

John Zaruba AA2BN
491 Pennsylvania Ave
Franklinville, NJ 08322

jzaruba@snip.net
aa2bn@amsat.org

Submission deadline: 12/22/00

Committees

Advertising - Open

ARES/RACES -Chick WA2USI

Awards - Jack K2ZA

Banquet - Bob KR2U

Budget - Bob K2DAD

Clubhouse Site - Al KB2AYU

Constitution - Open

Crosstalk - John AA2BN

Database - John AA2BN

DX - Doug WA2NPD

Field Day - Tony KG2MY

Hamfest - Bob KB2EAH

Hospitality - Ray WB2NBJ

Membership - John AA2BN

Nominations - Bob KR2U

Publicity - John N2AWD

Repeaters - Chuck WA2TML

Scholarships - Greg WN2T

Special Services - Open

Sunshine - Open

Technical - Open

TVI - John AA2BN

VEC Testing - Chick WA2USI

4-H Parking - Bob KR2U

The W2MMD Repeaters

147.78/18 Mhz - Pitman

223.06/224.66 Mhz - Sewell

447.1/442.1 Mhz - Pitman
(CTCSS 131.8 Hz)

GCARC Meetings

General Membership

8p.m. 1st Wednesday every month, Pfeiffer Community Center, Williamstown, NJ

Board of Directors

8 p.m. 3rd Wednesday every month, GCARC Club site, Harrison Twp. 4-H Grounds
~1 mile south of Mullica Hill on RT77

Nets

**ARES/RACES -
Sundays 20:00 Hrs
(147.78/18 and
223.06/224.66
repeaters)**

**10 Meter - Sundays
following the
ARES/Races Net
(28.350 Mhz)**

December Meeting Program

Election Night!

stamp



P.O. Box 370
Pitman, NJ 08071

Mailing Label