



# Crosstalk

Issue #8

August, 2000



*affiliated club*



## President's Message

By the time you read this the 4-H parking will be over. Bob, KR2U, and Gene, AA2YO, were the main organizers behind it again this year and, hopefully, they had enough help to fulfill the requirements they faced. With the club getting smaller each year getting enough people to come out for the parking is getting tougher.

Hamfest is next on our agenda and that is not without its problems. It seems that the state changed some of the rules for raffles and didn't notify anyone of record, therefore our request for a new raffle license has been held up due to the new rules. Hopefully that has been squared away, we'll get our new license soon, and we can get our tickets printed up. In the mean time, Bob, KB2EAH, is getting all the other details taken care of or delegated out. He has arranged for the grand prize to be a \$400 buying spree at Amateur and Advanced in Delaware, or the equivalent at a Shop Rite for food. So they should appeal to anyone who may be interested in acquiring some tickets. As usual, Bob does need some confirmed help for setup on Saturday and operations on Sunday so make sure you come out and lend a hand.

Hopefully Tony, KG2MY, will have the results of our Field day, at the next meeting, along with any pictures that were taken. I have some shots that I took but I will be away on vacation on meeting night, so mine will have to wait until September's meeting.

Lastly, a subject that has been going on for some time now: trailer power. Chuck, WA2TML, and Wayne, WA2LET are out getting estimates for having an entire new run put in to provide power to the club trailer. Not knowing what the condition of the other two of the three lines, the Board decided to replace the entire run. Our insurance company has provided us with an Adjuster who has agreed that the problem is covered by our insurance and therefore the bulk of the cost is not going to be on us. Hopefully Wayne and Chuck will have estimates by meeting night and the members can vote on the work.

Normally I close with "see you at the meeting" but as I said before, I'll be on vacation and won't see you all until September.

Have a good meeting Art - KA2DOT

**The Hamfest is coming! The Hamfest is coming!  
Sunday August 20th, 2000  
C. U. There!**

# DX Dope

*By Doug Gehring WA2NPD*

Well, there is a slight lull at the moment in between time for the Tromelin DXpedition and later on Kingman Reef, Agalega, and Tristan Da Cunha. With the favorable WX, this is usually antenna repair time.

With help from Wayne WA2LET, your scribe just dumped about 2 shot glasses of water from his vertical antenna feedline, replaced about 70 feet with new RG-213; used "Scotch Kote" to seal the connectors, and now she loads up like gang-busters! Hence, we should now be ready for the anticipated DX openings on 40/80 come this winter.

A recent discussion with Charlie N2SRQ prompted the following remarks; and by no means is this meant to be a complete discourse on antennas. I (et al ) have often been asked "Which is the better antenna for DXing, a vertical, or a horizontal beam (yagi)?"

Aside from local geographical (and other) considerations (size of property, mean neighbors, trees, etc.), there are really just two primary considerations or differences between the two. The 1/2 wavelength vertical has an inherently lower angle of radiation, which means fewer skips to get there - which means less db loss of signal at the receiving end.

Hence, with say, a 5° take off angle, there will be about 6 skips between here and VK land, whereas with a 3 element yagi - say 20m at 60 ft. and at 1/2 wavelength, the takeoff angle will be about 30°. This means there will be about 24 skips between here and VK land with a considerably greater loss in db. However, the yagi is directional and has inherent db gain (front to back ratio), and is less susceptible to interference (especially in receiving), and, unless the vertical has some nearby friends (i.e. part of a vertical array), the yagi will overcome the omnidirectional vertical and still get there with a comparable or larger signal. Remember, that in HF DX work (skip signals, ionospheric perturbation, etc.) there is really no db difference in horizontal and vertical polarization reception at the receiving antenna (as is the case in VHF/UHF); so go ahead and put up either one antenna or the other and have fun.

So, what's hot for August?

Station	Dates	Freq/Mode	Rarity	Country
FR/F6KDP/T	8/1-8/16	All;HF & RTTY	5+	Tromelin Is.
5R8/AD6KA	8/30-9/27	20,15,10; Mostly SSB	3	Madagascar
SV5/PA1KW	8/15-9/22	Not Given	3	Dodecanese Is
VK9XY	8/13-8/25	All;CW & SSB	4	Christmas Is
VP5/I4ALU	8/14-8/28	All; CW only	2	Turks & Caicos
K1HP/KH0	8/8-8/12	40-6; SSB, CW	3	Mariana Is
CT3/DJ8FW	till 8/20	Not Given	3	Madiera Is
J28EW	Now till ??	15, 10; CW	3	Djibouti
FH/TU5AX	8/16-8/29	20,15,10,6; CW SSB	3	Mayotte Is
JD1BKQ, et al	8/13-8/16	All; All	3	Ogasawara Is
FY/F5AEG	8/8-8/22	20,15,10; SSB	2	French Guyana

5 is rarest

- *TNX to K2JF, AA2WN, and the 59(9) Report*

# Propagation Notes

*by John Fisher K2JF*

I have prepared a collection of articles on propagation starting with the ionosphere.

If you want the articles to continue please let me know; other wise I will assume there is not sufficient interest to continue.

In the early days of radio, mathematical physicists reasoned that it would be impossible to receive radio signals at very great distances because of the attenuation resulting from the absorption of the energy by the Earth.

When it was found experiential that signals could be received across the Atlantic Ocean, the work of the physicists was questioned. Their result was correct, of course, for problem to which it applied namely, the propagation of ground waves around a curved Earth surrounded by free space. Obviously, some other means of propagation had to exist. The experimental evidence of trans-atlantic communication proved only that the assumption of an earth surrounded by nothing but free space was unjustified- in this connection.

It was then suggested by both Heaviside and Kennelly, the one an English scientist and the other an American, that the Earth actually is surrounded by an electrified layer which acts as a reflector and prevents the escape of the wave into free space by bending it back toward the Earth. Such a layer also could form the source of the electric currents in the upper atmosphere which had been suggested as the cause of changes in the magnetic field of the earth during magnetic storms.

Later, when it was shown that not only one, but several such layers actually did exist, and that these layers consisted of ionized gases of the atmosphere, the name ionospheres was suggested for the region in which the layers were found.

## Ionization

It has been found that energy in the form of electromagnetic radiation is capable of dislodging some of the loosely bound electrons from their atoms, provided that the radiation is of the proper wavelength and energy. When a number of such events happens in any gas, the gas is said to be ionized, since it has atoms lacking their normal quota of electrons, and free electrons not associated with any atom.

## Source of Ionization, The Sun

Although the Sun is composed of the same elements that are to be found on the Earth, these elements exist in such a violent state of solar activity as to remain constantly in a molten or gaseous state (plasma).

*- continued next page*

## Propagation Notes - *continued*

Probably because of intense internal stress and the play of atomic forces on a gigantic scale, the Sun constantly emits huge accounts of energy in the form of heat, particles, and electromagnetic waves. Eruptions at the surface of the sun have been noted to shoot immense clouds of hot gases to distances of half a million miles above the surface. Another disturbance of the Sun's surface is the appearance of sunspots, which have particular effects on the am amount of ultraviolet radiation, and hence on the extent of ionization caused by this radiation.

### Effects of Sunspots

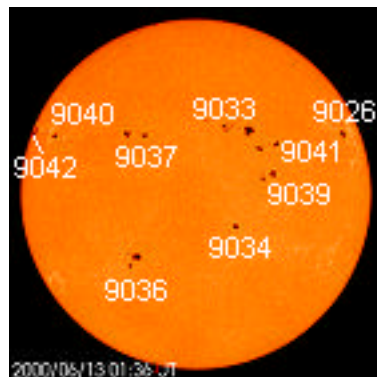
During periods of high sunspot activity, (we are just getting into cycle 22) the extent of ionization of the various layers is greater than the average. The sun sunspots are dark areas which appear on the disk of the sun, and although their relative darkness would seem to indicate lower temperatures and lower ultraviolet radiation, they have bright gaseous clouds about them, and the processes involved in the formation of the sunspots probably produce vast amounts of ultraviolet energy.

The sunspots usually appear in groups, and follow a more or less definite cycle of activity with an average time interval of 11.1 years between the maxima of two consecutive cycles. Magnetic storms on the Earth also are related to the presence of large sunspots.

### Dellinger Fade

Bright visible flares on the Sun's disk instantaneously produce great effects on the ion density of the various ionospheric layers. This effect is known as the Dellinger Fades, or Sudden Atmospheric Disturbance (sad's). Great increases are noted in the ionization produced at low levels of the ionosphere as the result of these flares.

*The next article , Part 2 will be on: Formation of an Ionized Layer*



*Photo 1. Sunspots*

## **GCARC Scholarship Committee Awards Prize**

*by Greg Potter WN2T*

The Scholarship Committee is pleased to announce this year's winner of the \$500.00 award is John W. Smith, III from Clayton, New Jersey, John graduated with honors from Clayton High School and will be attending Penn State University this fall to study communications.

To the Committee's surprise, John was the only ... albeit very well-qualified ... applicant this year. Normally, the Committee receives an average of five applications. Announcements of our scholarship offer are sent to all Gloucester County public and private high schools in early March. Applicants are required to submit an application form and a brief essay on why they want to study communications, engineering, or computer science at the college, university, or technical-school level.

I would like once again to thank the members of the Scholarship Committee (K2JF, N2FNF, K2OWE, N2WUP, N2WSI, and WN2T) for their long-standing support in this important Club activity. And by the way, if anyone would be interested in serving on this committee, please let me know!

## **Crosstalk Hits Milestone!**

For the first time since I acquired the editorial reigns, this issue of Crosstalk contains all home grown content.

All the articles were written by club members, for club members. No internet filler this month. Let's keep it up. When you see any of Crosstalk's contributors, let them know how much you appreciate their efforts.

Submit your articles and ideas to the editorial address listed in this issue. Help make this the best Ham Radio newsletter in South Jersey!

*- John Zaruba AA2BN, Editor*

### Frequency Standards

STATION	QTH	FREQUENCY	MODULATION
CHU	OTTAWA CANADA	3.300 MHz 7.335 MHz 14.670 MHz	1000 Hz
HBN	SWITZERLAND	5.000 MHz	1000 Hz
JJY	TOKYO	2.500 MHz 5.000 MHz 10.000 MHz	1000 Hz
UNG	LYNDHURST	5.425 MHz 7.515 MHz 12.005 MHz	1000 Hz
WWV	COLORADO	2.500 MHz 5.000 MHz 10.000 MHz 15.000 MHz 20.000 MHz* 25.000 MHz*	440 Hz 600 Hz 1000 Hz

WWV ON 18 AFTER THE HOUR GIVE THE SOLAR CONDITIONS SUCH AS THE SOLAR FLUX, INTERNATIONAL A INDEX AND THE NORTH AMERICAN K INDEX. WWWVH IS THE SAME EXCEPT THEY GIVE IT AT 45 MINS BEFORE THE HOUR. (WWWVH HONOLULU ).

WWV IS NOW CONSIDERED TO BE THE STANDARD FOR UNIVERSAL COORDINATED TIME (UTC). ACCURATE TO ONE PART OF 10 TO THE 18TH.

- TNX to K2JF

#### 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:

Sam Greenfield	N2URO	8/30
Harry Jackson	WB2GSF	8/26
Jack Koch	K2CR	8/13
John Lachenmayer	KB2RGX	8/15
Jim Mollica	K2OWE	8/23
Charles Rambo	KC2AOG	8/16
Willie Ustazeski	WA2DUV	8/2



## 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](mailto:jzaruba@snip.net)**  
**[aa2bn@amsat.org](mailto:aa2bn@amsat.org)**

**Submission deadline: 8/25/00**

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## 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**

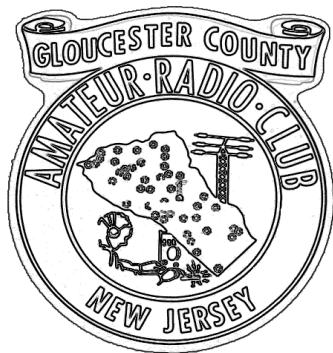
**ARES/RACES -  
Sundays 20:00 Hrs  
(147.78/18 and  
223.06/224.66  
repeaters)**

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

**August Meeting Program**

*Socializing*

stamp



P.O. Box 370  
Pitman, NJ 08071

Mailing Label