

CROSSTALK -- Official Publication of the
 GLOUCESTER COUNTY AMATEUR RADIO CLUB, W2MMD
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		Len Kravitz, KD2CR	Circulation

 AREA NETS

GCARD RTTY NET:	Tuesday, 8:00 PM 147.78/18 Rptr
ARES NET:	Sunday, 8:00 PM 147.78/18 Rptr

Club Repeaters: 147.78/18, 223.06/224.66, 447.10/442.10

General Meeting: First Wednesday of each month at the V.F.W. Hall in Woodbury, NJ. Meetings begin at 8:00 pm sharp.

Contributions: CROSSTALK, Tony Starr,
 Deadline: Ten (10) days before each general meeting.

PRESIDENT'S MESSAGE--- NOVEMBER 1987

Just a few reminders this month; first, the club banquet will be on Nov. 7, and there is still time to purchase a ticket. The price is \$14.95 per person. The banquet will be held at Degenhardt's on the Black Horse Pike in Mt. Ephraim. There will be music for dancing, a guest speaker, awards and door prizes.

The club station committee has been accomplishing a great deal, and they could really use some extra help on Sundays. Remember, this is for the benefit of all, not just for a few. The electricity is soon to be hooked up, hopefully by Sunday, Oct. 31. The next board meeting could be held at the site. Keep up the great work, guys!

Congratulations to Tony and Marianne Starr, the proud parents of another son. Due to added responsibilities, Tony will no longer be able to serve as editor of Crosstalk. He has done an outstanding job and hopefully he will resume this position another time. We are in need of someone to take over this job.

Nominations will be held again this month. Absentee ballots will be handed out by request only. These ballots can be sent to the club in a sealed envelope or brought to the December meeting. The current slate stands exactly as published in last month's Crosstalk. Good luck to all.

73--- Virginia Martin, N2FJM, Pres.

HELP WANTED--- EDITOR

It is with deep remorse that I must now officially resign as Editor of Crosstalk, due to family medical problems. New responsibilities at home have reduced greatly the amount of time available for me to work on Crosstalk. It is important to me that we find a capable, enthusiastic volunteer to maintain the quality of our publication, while imparting a new flavor and viewpoint. For those of you who might want to take a crack at the job, I will outline some of the duties and qualifications in a subsequent paragraph, but first I would like to thank all of you who have helped me crank out over forty issues of the newsletter, many of them containing ten or more pages of text. You are, of course, the staff and contributors.

I would also like to thank all of you, the readers, who reminded me regularly how much you enjoyed reading Crosstalk each month. I have always tried to keep up the quality of the newsletter because I enjoyed hearing good words from the membership. I hope that you will give my successor the same encouragement, as it really does make it worthwhile to do a good job. If you are interested in the job, read on. If not, skip to the next article.

JOB REQUIREMENTS: A good knowledge of English, with emphasis on

spelling and punctuation; proofreading skills; must be comfortable with word processor programs (we have three different ones), and the computer (we have a TRS-80 model 4); must be willing to make a commitment, as this job requires personal discipline and may take a while to get used to.

If you think you would like to take on this challenging and informative job, please contact me as soon as possible. I will answer any questions you may have. I look forward to hearing from any interested parties. 73 and God Bless.

Tony Starr, WA2FZB.

LEGISLATION

Well, Hello again! I am sure you noticed there was not any legislation news for a couple of months. The reasons for this absence were numerous, which I won't go into except to say that I am looking for a person who may be interested in taking over legislation. If anyone is interested, please contact me.

Some time ago I lent, in good faith, a code practice program to a member who, at that time, promised to tape the program and return it to me so other interested members could take advantage of it. Because of the rush I was in that night I am having trouble remembering who I lent it to. So whoever you are please get in touch with me. Thank you in advance for your cooperation.

MORE ON 220:

Western Mobile Communications, Inc., a Santa Maria, Cal. Business Band firm, has filed interesting comments opposing Docket 87-14. Their president, Jim Hendershot, WA6VQP, feels that the animosity generated in amateur circles by the re-allocation of the 220-MHz spectrum to the land mobile industry will do more harm than good. He says that present ACSSB known as ENB (Enhanced Narrow Band) enables spectrum past 900 MHz to be used. He says that present ACSSB systems do not work well beyond 220 MHz and there is no room for future VHF expansion.

JAMMER:

Another satellite television programmer has been jammed. An uplinked pirate signal overpowered "The PLAYBOY Channel" on Sunday night, September 6, and replaced the movie, "THREE DAUGHTERS" with the message, "Repent your sins. Keep the Sabbath Holy". The FCC Field Operations bureau is investigating. Maximum penalty for this type of offense is a one year sentence and a ten thousand dollar fine.

Tnx W5YI for above. 73 de KB2AZU, Chuck.

DX INFO

Well, the Solar Flux has done well for all the DXers this past month. We reached a high of 119 on the 16th of October and the fellows took advantage of the good conditions. As was stated in last month's report we had some real rare DX come up and the guys really got humming. VU4GDG (Gopal) and his gang showed up on Andaman Island and gave both SSB and CW QSOs to most of the guys. We had a treat by Marti (OH2BH) and his gang; they showed up as SO RASD (see article above) and gave the guys a run for their money, both SSB and CW. On top of that there was Ron, ZLIAMO as VK9AB on Cocos-Keeling. Boy, what a month for the gang. "930" was busy most days and nights calling out DX.

Now, for you fellows who would like to figure the next Solar Flux high, count 27 days past the 16th of October and that should be the next high.

Some upcoming DX for November:

A4 Oman by GHB4YDR....VKOHI Heard Island-- there now until March 1988....N4EXR/TA2 in November....J6DX now....P40GD now (remember, this may count as a new one WFWL)....VK9YV by G3AAG Nov. 25-Dec. 7....YJOAA by K5BDX Nov. 25-Dec. 7....Lloyd and Iris (W6KB and W6QL from Mexico to Nov. 30, all bands CW and SSB.

One of the possible changes to the DXCC is a temporary delete clause. Countries who do not permit Amateur Radio and have not been on the air for a certain amount of time will be deleted from the DXCC total until such time as they become active, at which time they will be counted once again. Countries like Burma, Albania, PDR Yemen, etc. would be deleted until a legal operation takes place from them. (Tx ARRL and N2AU)

QSL route for VU4GDG.....VU2GDG

P. O. Box 3755
Coimbatore 641 018
India

SOPASD.....EA2JG

Arseli Echequere Bardeci
Las Vegas #69
Luyando, Alava
Spain

VK9AB.....Ron Wright, ZLIAMO

28 Chorley Avenue
Auckland 8
New Zealand

Some DX worked this month:

T77C-- 21026.....VU4GDG-- 14193.7.....ZK1XD-- 28.467.....YB3CN--
 14165.....CH1ASJ-- 14.018.....VU4GDG/TS-- 14005.....SORASD-- 7005.....
 FH4EC-- 14183.....VK5QW-- 14220.....VK1ZL-- 14220.....VK2AKP-- 14220..
 ..VK9NS-- 14220.....SORASD-- 21292.....EA2AA-- 3792.....C80BBE-- 3789..
BP9HU-- 3800.....VU4GDG/CVP-- 14200.....C U in the pile-ups-- K2JF

W2MMD-- The Site

Hey, great things are happening at the site! The site was used for the JOTA on Oct. 17th and 18th under the guidance of Walt, WB2OYC, and it worked out real well. We have the power wiring conduit all ready to go, telephone poles to go up, forms for the concrete, concrete to be poured for the slabs for the generator, shed, oil tank, and the propane gas. We should, by the time you read this, have the roof all new "black-topped" and possibly work done on the ceiling inside the trailer.

We need tables, chairs, cots, rolls of masking tape, tools (pliers, long-noses, etc), screw drivers of all sizes, drills and bits, wood and metal cutting saws, shovels, and you name it. Hey people, this is your site so how about lending a hand at the work parties out there every Sunday. We sure can use a hand or two. de K2JF

CONTEST CORNER

Please get returns from the CQ WW DX Contests and from the ARRL Sweepstakes to me as soon as possible. If there are three entries from the club we will be able to make a club entry. Please assume that there will be and fill out the club name (if not done on your sheet). The rules for the ARRL 10 Meter Contest in December have been changed in regard to scoring. Novice/Technician contacts count double, CW more than phone QSOs. Check QST for full details. With improved band DX conditions and new privileges, there should be great interest in this popular contest.

Forms for this contest, along with those for the 160 Meter Contest, Sweepstakes, and CQ WW DX Contest will be available at the club meeting and from your Contest Chairman.

A schedule of contests follows:

<u>MONTH</u>	<u>DATES</u>	<u>CONTEST</u>
November	7-9	ARRL Sweepstakes, CW
	14-15	European RTTY Contest
	14-15	Czechoslovakian Contest
	21-23	ARRL Sweepstakes, Phone
	28-29	CQ WW DX Contest, CW

December	4-6 12-13	ARRL 160 Meter Contest ARRL 10 Meter Contest
January	2-2 9-10 16-17 23-24 23-25 29-31 30-31	73 10 Meter SSB Championship 73 15/20 Meter SSB Champ. 73 160 Meter SSB Champ. 73 40/75 Meter SSB Champ. ARRL VHF Sweepstakes CO WW 160 Meter Contest, CW YL ISSB CW QSO Party
February	13-15 20-21 26-28	YLRL YL-DM Contest, Phone ARRL Internat'l DX Contest, CW CO WW 160 Meter Contest, Phone
March	5-6 19-20 26-27	ARRL Internat'l DX Contest, Ph. YL-ISSB Phone QSO Party CO WW WPX SSB Contest

Hope to hear you taking part in one or more of these contests!

(Tnx ARRL, CO, QST, 73, Worldradio).....de KB2GW

SWAP & SHOP

FOR SALE: Kenwood TS-700 10 watt multi-mode 2 meter xcvr.
Contact Tom, WA200S.

DID YOU KNOW THAT...

The Amateur Radio Service is allocated a whopping seventy megahertz plus of prime radio spectrum under one gigahertz, making it the nation's largest spectrum holder per authorized user. In this digital age of startling technical breakthroughs, it is little wonder that the Amateur Radio Service is constantly under attack. And like the native American Indian who was herded onto reservations, had the Amateur Radio pioneer not laid claim to the radio spectrum first, we would not have the spectrum we now enjoy. It is a constant battle to retain it. Tnx W5YI/E2JF

CURRENT CALL SIGNS--- SECOND DISTRICT

EXTRA	ADVANCED	TECH/GEN	NOVICE
NZ2C	KE2CR	W2HPF	KB2LEP

SONY has introduced a clock radio that allows consumers to wake themselves up to their own recorded message stored on a chip! Sony and Mitsubishi have developed low cost (\$350-400) still-video phone systems that transmit and receive still images over existing phone lines. Now you can see who you are talking to!

DXers are wondering if a section of the Western Sahara will be approved as the next DXCC country. An application has been sent to the ARRL DX Advisory Committee (Tony Gargano, N2SS, of our club is a member) for separate DXCC country status for the Democratic Saharawi Arab Republic, RASD, which came into existence in 1976. The RASD has a government different from Morocco, which rules the balance of Western Sahara. While not officially recognized by the United Nations, according to the DX Bulletin, the RASD does have formal diplomatic relations with many different countries. Tnx W5YI/K2JF.

MFJ Enterprises has introduced a novel new \$29.95 cordless telephone device that lets you use your cordless phone to remotely operate your radio transceiver! Now you can operate your ham rig while mowing the grass... or whatever! You simply plug the base unit of your cordless phone and the microphone input and speaker output of your ham rig into the MFJ-630 interface and you are ready to go! MFJ toll free number is 1-800-647-1800. Tnx W5YI/K2JF.

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 denser 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 to earth.

Waves of frequencies higher than the critical frequency pass on through the ionized layer and are not reflected back to earth. 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. The surrendered energy is reradiated by the layer, directly downward to the area of transmission.

CRITICAL ANGLE-- The determination of a critical frequency by use 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 verticle, 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 both the terms REFRACTION and REFLECTION tend to be used interchangeably. Since the central parts of the ionosphere have a great effect on the upper part of the wave front, 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 the Ionosphere", such topics as Diurnal, Seasonal, Eleven Year, and Twenty-seven Day cycles. de K2JF.

SWAP SHOP

FOR SALE

DRAKE TR4 W/PS... \$225 - W/O PS...\$200.

DRAKE TR4C W/PS...\$275 - W/O PS...\$250.

DRAKE ML-2 (2 MTRS) AC/DC...\$75.

MIDLAND 13-510 (2 MTRS)...\$150.

CLEGG FM-88 (2 MTRS)...\$150.

R-390A RCVR (.500-30 MHz)...\$100.

CENTRAL ELECTRONICS CE-100V (PWR) (W/PS) (HBB)...\$150.

HP AUDIO GEN. MOD. 2000... (SWAP).

SIG. GEN. SG-15A/PCM... (SWAP).

SP-600 RCVR (GOOD FOR PARTS)...FREE.

MODEL 14 TYPING PERF/REFERR... (SWAP)

BEARCAT SCANNER BC-3...\$25.

ATWATER-KENT (MODEL 55)...MAKE OFFER.

ALL EQUIPMENT SWAP-ABLE AND NEGOTIABLE.

WILL DELIVER TO GLOU CTY AREA (SEE CLUB TO CAROL) PLEASE INquire

CONTACT...DON SMITH/WB2EJF
WOODSTOWN, NJ