



## *President's Message*

April is upon us and with it comes nice weather to start planning those antenna projects. As for me, I'll be erecting a new Force 12 C3S tri-band yagi on top of bracketed crank-up tower. It has been over 30 years since I've operated with a beam so I'm very much looking forward to getting it up and working that DX.

The Dayton hamfest is scheduled for May 17-19. For more info please visit <http://www.hamvention.org>.

The Warminster Amateur Radio Club will hold its hamfest on Sunday, May 5, 2013 (rain or shine). It opens at 7 am (vendors at 6 am). For more information go to <http://www.k3dn.org/hamfest.htm>. The hamfest and vendor contact is Rich Luce. His phone number is 215-703-8264.

World Amateur Radio Day 2013-Each year on April 18, radio amateurs around the world celebrate World Amateur Radio Day, commemorating the day that the International Amateur Radio Union was founded in 1925. In 1913, the first recorded instance of amateur radio being used to provide communications in a natural disaster was noted, during severe flooding in the Midwest United States. Accordingly, the theme of the event for 2013 is *Amateur Radio: Entering Its Second Century of Disaster Communications*. Activities on World Amateur Radio Day 2013 can be a great opportunity to spread the word about what the hams are doing in the field of disaster communications in the 21st century.

ARRL Rookie Roundup – Phone-The weather's getting warmer, and that means the SSB Rookie Roundup is just around the corner! This year's SSB 'RR will be on Sunday, April 21 from 1800 - 2359 UTC. Any operator newly licensed any time during 2013, 2012 or 2011 qualifies as a Rookie. Work as many stations as you can in as many different states, Canadian provinces, Mexican districts as possible. DX stations can get in on the fun, too! If you were licensed prior to 2011, get on the air and work the Rookies, help a Rookie get on the air, or help your Club members put together a team. Elmering the Rookies and working them are important, too! Clubs can promote either a Multi-operator effort (several Rookies operating from the same station) or a team effort (up to 5 Single-Operator Rookies operating from their own stations and combining their score). Let's see how many team rivalries we can drum up! Check with Kenny, W2KRD, on the complete rules, along with score summary submission instructions. Don't forget, all entrants must fill out the score summary form by 2359 UTC Wednesday, April 24. No late entries will be accepted! Hope to work you on the 21st! CQ RR!

The NWSFO Mount Holly is offering another free webinar for SKYWARN for all those that weren't able to take the last one. Follow the link below for more information and registration information. <http://www.erh.noaa.gov/phi/webinar.html>.

73, Tom, KE2ES

# Down Jersey DXing

By Bill Grim, W0MHK

Spring is bringing some enhanced propagation to the high bands (20M +), but we are still contending with solar outbursts that are nullifying some long distance paths over the North Pole. The North and South Pole are notorious for absorbing RF as our relatively tiny signals cope with the long paths to distant locales, especially in Asia and the Western Pacific. Solar Coronal Mass Ejections (CME's) have been numerous and make these paths often unusable despite increases in Solar Flux from our present solar cycle peaking. Even spring and fall seasons which usually help enhance propagation to many areas of the world seem to be of limited help so far this year.

So we take what Old Sol will give us and make the most of it. Spring may still provide us with some nice seasonal openings, especially on the higher bands. If you have WARC Band capability, they can increase your chances of DX success right now. 17 Meters was by far the best band for my station to consistently hear 9M4SLL coming in from the Spratly Islands/South China Sea in the past two weeks!

Over 100,000 QSO's by TX5K on Clipperton Island on the Pacific side of Central America surely helped GCARC members pick up a new one. They tried to accommodate the Ham Community with activity on many different bands and modes. Their geographic proximity to Down Jersey helped to alleviate some of the solar difficulties previously mentioned. Getting through to a popular DXpedition can be much easier after they have "worked out" some of the major bands and modes. Just don't wait too long to call or you might not be hearing that rare spot again for a few more years!

If you have been following some of the recent QST VHF articles on 6 Meters, other parts of the USA and the world have been successful in making some dandy qsos. Openings to the Pacific have been exceptional from the Southern and Western USA last year even into 2013. I counted last year's 6 Meter season as a "bust" as did a good friend in Iowa who I compare seasons with every year. With the solar cycle peaking and these good openings happening for others, I would make sure that my 6 Meter yagi and rotor are ready to go with April being here. It might be geographically our turn to have a super 6 Meter season!

Here are some good DX bets for post-Easter DXing. If conditions aren't particularly great, concentrate on NA, SA, EU, and AF openings for some new DXCC credits:

CALL	DATES	HIGHLIGHTS	5=MOST RARE	ENTITY
VK9CZ	3/30-4/13	HF/CW, SB, RY	4	COCOS/KEEL
V63XG	4/3-4/11	160-6M/FOCUS ON WARC	3	MICRONESIA
5W0M	4/4-4/8	80-6M/CW,SB,RY	2	SAMOA
TK/G4BKI	4/-4/18	HF/USA QSL MGR.	1	CORSICA
PJ4/SP	4/8-4/20	160-6M/CW,SB,TY	1	BONAIRE
5H1DX	4/20-4/28	HF/ALSO IOTA AF-063	2	TANZANIA
8Q7KP	4/23-4/30	HF/2 EL STEPPIR	3	MALDIVES
ZK3N	4/25-5/8	80-10M/CW,SB,TY	3	TOKELAU
JD1	4/28-5/5	JA TEAM/160-6M/ALL MODES	3	OGASAWARA
TS8IT	4/25-5/4	ITALIAN TEAM/HF-6M/ALL MODES	2	TUNISIA

CREDITS: NG3K ADXO

# Meet your Fellow Club-member, Tom Gorman, KE2ES

By Tom Gorman, KE2ES

I was first introduced to radio communications back in the mid-sixties by a friend in my Queens, NY neighborhood. I was inspired to study electronics and attended a technical and vocational high school. There I had four years of studying electric machines, circuit analysis, electronics which comprised all electron tube theory as transistors were not yet part of the curriculum. During one of our labs, we each built, aligned and tested a five tube superheterodyne receiver. During this time I received my novice call which was WN2YQL. I worked and saved to purchase a new Hammarlund HQ-110A receiver and a used Eico 720 CW crystal controlled transmitter which was connected to a 40 meter dipole.

Upon graduation I thought I wanted to become a NYC police officer but instead chose to attend a two year college again studying electronics. However, we studied transistor theory as tubes were now being phased out. I received my AAS degree in Electrical Technology and then went on to receive my BSEE with a focus on RF communications. Joined GE, got married, raised two sons and lived several different places. I was KA4SAE in East Tennessee and KE7EH in Northern Nevada then moved to South Jersey in 1987 and received my present callsign. My career has spanned 40 years in telecommunications working for companies like Alcatel, International Telephone & Telegraph (ITT) and Hughes Network Systems. Projects included overseeing the installation of large wireless local loop radiotelephone systems in Eastern Europe, Russia and Ukraine back in the early 90's when President Reagan convinced Mr. Gorbachev to "tear down this wall."

I enjoyed operating CW as a Novice and General but focused more on SSB when I got my Advanced Class license. When running projects overseas, many times I was able to operate amateur radio equipment after receiving radio licenses and permission to bring equipment in and out through customs. My most interesting operating experiences were in the former Soviet Union.

Over the years, I've acquired FCC commercial licenses like my GROL and GMDSS Radio Operator/Maintainer. My current goal is to receive my FCC Radiotelegraph certificate but need to pass two FCC CW exams of 20 and 25 wpm which I'm currently studying for.

My station equipment comprises mainly Kenwood HF equipment. I have the 130S, 430S, 830S and a new 590S. I've been using both a vertical antenna for 20-10 meters and an inverted V for 80 and 40. However, over the next few weeks I plan to erect a new Force 12 C3S tri-band yagi on a bracketed crank-up tower. I'm also active on both VHF and UHF communications to support EMCOMM in both Camden and Gloucester counties.

In closing, like others in the Club, I've enjoyed amateur radio as a hobby and the friends that I've come to know over the years. It never ceases to amaze me all the different facets of the hobby and the technology that supports it. I hope that my story might inspire younger folks just starting out or maybe scouts that become interested in radio and maybe decide to study and pursue a career in engineering, science, mathematics to name a few. Thanks for listening...

## Upgrades

Congratulations to Mark Townsend, W2OCY, for upgrading to an Extra Class license and to Kyle Townsend, W2KBT, for upgrading to a General Class license. Great work by both of you. Mark and Kyle also have agreed to Co-chair Field Day for the Club this year. Thanks to you both for taking on this important job.

## Club Meeting Program April 3, 2013-"A DX Primer: WAZ with Your Antennas, and other DX Wallpaper"

By Jim Wright, N2GXJ

What do calls like JD1BMH, 6W7SK, XV4LU, TX5K, A31WH, 3B9DX, 9M4SLL, ZL7LC, and VK9C all have in common? (clue: check page 2 from the January, February, and March issues of this year's GCARC Crosstalk magazine). What's DX, what's WAZ, and what does wallpaper have to do with Amateur Radio?

For those of you who already think you know the answers to these questions, and even more, take out a copy of your log sheets and see how many countries you've been able to contact, and on how many bands before this GCARC club meeting. Want to score more?

It is with great privilege that we will have the honor of introducing our very own accomplished DX-Expert, Bill Grim (W0MHK), as guest speaker for this evening's program. You may recognize Bill's name as author of our Crosstalk magazine's "Down Jersey DXing" column, and from various club meetings and events, but did you know that he has also been recognized by the ARRL as a 10-band DXCC radio operator? (Yes, that is 10 band). How did he accomplish that? (How can I accomplish that?)

Come on out and support your Club's own Bill Grim as our host for what promises to be a most informative evening. Hope to see you there!

## Club Event: Sunday April 21 1pm-4pm GCARC as Guest Radio Operators on Board the Battleship New Jersey

By Jim Wright, N2GXJ

America's most decorated Battleship is docked right here in Southern New Jersey. Have you been out to the Battleship New Jersey lately? Did you know that there is an amateur radio station on board, restored along with the rest of the ship's communications through countless volunteer hours. Want to see the radio room from the inside, where all those contacts are made during the museum ships weekend, which is the weekend of June 1st this year? Want to try out the radios and make a few contacts yourself from the amateur radio station which is deep within the former crypto room of this ship? Then why not join our very own Harry Bryant (AA2WN) as he serves as our official escort and authorized control operator for an afternoon of radio fun as guest operators from within the radio room of the Battleship New Jersey!

If you are considering participating in this club event, please sign up on the list with Jim (N2GXJ) and Harry (AA2WN) at the April 3 Club meeting. Space is limited in the radio room, and guest badges need to be secured by Harry in advance, so having an accurate list of names ahead of time will help us ensure that nobody is left standing on the dock. Cell phones don't work well from within the confines of this metal ship, so even if you have our cell phone numbers, we will not be able to be contacted to come and get you if you are late. We will meet promptly at 1pm outside the admissions gate on the pier leading to the ship, to be escorted in from there. We expect to be escorted off of the ship sometime around 4pm.

If you are interested in touring the ship, you should purchase admission to do so in advance in the ticket office that is also near the gate where we are meeting. You will not need one of Harry's guest badges if you purchase your own admission. With a paid admission, you can then tour the ship at your leisure,

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“Event” from Page 4.

joining us in the radio room when you pass that point on the tour or whenever it is convenient for you. If you are only going to operate in the radio room, you will not need an admission, but will be confined to stay with our escort in the radio room and will not be able to tour the ship.

There are some rules we have to follow while there, which include using only the call sign of NJ2BB when operating, and the requirement to log all contacts. Harry will brief us on all the rules when we are there. For more information ahead of time on BBJARS, the Battleship New Jersey Amateur Radio Station, and guest operator rules, you can visit the station’s web site here: <http://www.nj2bb.org/> Hope to see you at the sign-up at the meeting on April 3<sup>rd</sup>.

## Auxiliary Emergency Communications Workshop (AUXCOMM)

This workshop is designed for auxiliary emergency communicators and groups who volunteer to provide backup emergency radio communications support to public safety and emergency response professionals and their agencies. Typically this would include amateur radio but may include other volunteer emergency communicators. The request for and conduct of this offering will be under the auspices of the Statewide Interoperability Coordinator (SWIC).

Volunteer emergency communications operators/groups in the amateur radio service have been providing backup communications to public safety for nearly 100 years. They are used by event planners, public safety officials, and emergency managers at all levels of government. Often, amateur radio services have been used reliably when other forms of communications have failed or have been disrupted. Today nearly all the States/territories have incorporated some level of participation by amateur radio auxiliary communication operators into their Statewide Communications Interoperability Plan (SCIP).

The course focuses on auxiliary communications interoperability, emergency operation center etiquette, on-the-air etiquette, FCC rules and regulations, auxiliary communications training and planning, certification and accreditation, and emergency communications deployment. It is intended to supplement and standardize an operator's basic knowledge of emergency amateur radio communications in a public safety context. Prerequisites for attendance include:

- Completion of IS-100, IS-200, IS-700, and IS-800 prior to the workshop (copies of certificates will be requested at the start of the class)

- General class FCC license or above (copy of the license will be requested at the start of the class)

- Past experience in auxiliary emergency communications

- A desire to learn how to work with Communications Unit Leader (COML) in a NIMS/ICS environment

This is an intensive two day, 20 hour weekend course with facilitated lecture and student exercises. It can be scheduled over a weekend to accommodate attendees regular work schedules. This course builds in time for interactive discussions and exercises. Each workshop is limited to 30 attendees. Because the content is NIMS-compliant, this offering is not modified for local circumstances.

If you are interested in this course locally, please contact our President, Tom Gorman, KE2ES.

The Department of Homeland Security/Office of Emergency Communications will be conducting the above course at the Dayton Hamvention this year. For details on how to register for this course, go to [www.hamvention.org](http://www.hamvention.org).

# Digital Scanning: A New Revolution in P-25, and why your scanner won't hear that new 700mhz system.

By: Michael P. Mollet, N2SRO

As many readers are aware, numerous public safety systems in the area will be migrating to the 700mhz system within the next few years. As they do, many scanners will no longer be able to decode the signal. Some systems such as the city of Philadelphia, and Burlington County are using P-25 phase 1 systems, which for the fortunate can be decoded by use of a "Digital Scanner" such as the Radio Shack Pro-96 or GRE PSR-500 to name but a few. These scanners however will not be able to decode the new 700mhz systems when they go online as a new codec will be used.

A codec simply put is the combination of hardware and software which is responsible for taking audio and translating it to a digital signal, and then being able to take a received digital signal and reconstruct it back into intelligible audio. The codec employed in the Phase I systems which are currently in use and are nearing end of life expectancy are using an algorithm known as Improved Multi Band Excitation, or IMBE for short (which has a sub-component known as C4FM.) Some of the readers from the Trenton area may even be familiar with the precursor to IMBE which was known as VSELP (pronounced Vee Selp.) This was not too popular of a format and therefore was quickly abandoned by all but a few agencies in favor of the much clearer and more intelligible IMBE.

In the Phase I system, FDMA or Frequency Division Multiple Access is employed, which means that there are "slots" which are frequency dependent, usually reserving one voice path or "slot" per frequency. The audio is digitized using a method known as IMBE or C4FM which stands for Continuous 4 level FM. (A lengthy explanation on the C4FM architecture can be found online, but due to space constraints here, will not be discussed further.)

An aside: A large portion of "P-25" trunked systems in our Philadelphia area are not actually fully P-25 compliant! The APCO Project-25 standards specify parameters as to how a trunked radio system is to operate, to include signaling, and even baud rates for the control channel. What most systems in the area (to include the Burlington County p-25 public safety system) are doing is taking an existing Motorola Type-2 smartnet system and simply digitally encoding the audio using C4FM or IMBE. In this scenario, they are NOT fully P-25 compliant as they are disregarding some standards set fourth for the execution of the trunking.

The new APCO P-25 Phase II system will be utilizing the AMBE 2 (Advanced Multi Band Excitation) for the digital audio encoding, and then layering it upon TDMA or Time Division Multiple Access (for multiplexing.) AMBE 2 is similar to AMBE which is used in DSTAR, however a few tweaks and improvements were made to the codec which yielded AMBE 2. As a side note, the changes in code from AMBE and AMBE 2 are significantly different which precludes the monitoring of a Phase II signal from a DSTAR portable. Besides not being able to decode the audio, the slots which were frequency dependent in the Phase I system (single slot per frequency) will now be multiplexed allowing for two talk channels per frequency. This is due to the fact that in the TDMA method, *Time*, rather than *Frequency* is the slot determining factor. Thus, in TDMA we can have multiple talk paths or slots per frequency.

As we can now start to see, the Phase II migration then, is accomplishing two major upgrades:

- 1: (taking a new digital codec (AMBE-2,) and
- 2: marrying it with a new multiplexing system to allow for more talk paths per channel.

Please see "Digital" on Page 6.

“Digital” from Page 5.

To add to the confusion, the new P-25 Phase II standard applies only to trunked radio systems. There is no provision currently for simplex based P-25 Phase II. There is controversy within the ranks of radio techs as to if tactical communications (simplex or talk-around) will use narrow-banded analog FM mode, or if they will revert to P-25 Phase I digital audio. Literature on the Motorola APX portables seems to indicate that they are programmed with both Phase I and Phase II codecs which would allow for digital simplex communications, or even digital non-trunked communications such as a conventional P-25 repeater.

Though the above many be confusing, the general take-away from this article should be this:

1. Public Safety didn't necessarily start encrypting their traffic, rather, it is an entirely new language being spoken.
2. If you have a digital scanner, keep it for now, see what happens. If you do NOT have a digital scanner, save your money and hold off on purchasing a new scanner. As the systems are rolled out, and Phase II becomes more pervasive, the new Phase II codecs may be installed in the new scanners sold.
3. At this point in time, sit and wait appears to be the name of the game. At over \$525 a pop for the new scanners, this author will wait until the bugs are worked out of the scanners before he purchases one.

## Royalty-Free HF Digital Voice?

By Jim Wright, N2GXJ

Like you, I read Cory's article in February's Crosstalk on "The Cult of D-Star" with interest. As he said, we've all seen advances in digital electronics. Clearly our ham radio hobby has helped advance the state of the art in communications throughout the years. And based on an article on page 89 of this month's QST magazine on HF digital voice with FreeDV, it is clear to me that enthusiastic members of our radio community are continuing to push the limits of radio innovation.

Like Cory, I have questioned the proprietary CODEC chip required for a D-Star radio to operate (it is the 'secret sauce' that turns your voice into digits, and then back again at the other end of the transmission). I've been on the lookout for free alternatives that I might be able to experiment with and try at home with little or no investment. To me, digital voice should be free, should be able to run from my PC, and be as easy as it is to get on the air digitally as it is to get on the air digitally using FLDIGI or Ham Radio Deluxe using a Signalink (which I already own for PSK31, or similar external USB sound card) to connect the PC to my HF radio.

And then I read the article and wondered, is this the Free HF digital voice mode that I've been looking for? Well, there was only one way to find out. Following the instructions and links for a Windows install from <http://freedv.org/tiki-index.php> (Linux install is also available), I tuned up the radio to 14.236 Mhz to see what I could see and hear on the waterfall. Sure enough, in short order, a station came up in normal SSB mode and asked if the frequency was in use before he shifted into the digital Codec2 voice mode used by the FreeDV software I'd installed. Just like with the sound on some digital television sets, I noticed a measurable delay lag between when I heard his voice on SSB through the radio's speaker (which I had not turned down yet) and when I heard the same thing from the speaker on my laptop (which was being fed digitally from the radio through my Signalink USB sound card adapter, and then run through the FreeDV software stack before being converted back to analog to come out the laptop. Please see "Digital Voice" on Page 8.

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speakers). When he switched from analog sideband to digital voice, there was a moment while I was hearing the digital signals on both my radio speaker and laptop speaker before the sound from my laptop speaker suddenly switched into clear intelligible speech.

My first reaction to hearing the clear digital voice was surprise at how different it sounded than anything else I've heard on HF. Granted I don't have much to compare it to, never having heard D-STAR on HF, but compared to normal SSB signals the voice was clear and static-free, if not a bit “tinny” (missing some low frequency content).

But that was only for a strong signal (S9). As I continued to listen, a weaker station came on, I found this new mode actually quite terrible for this signal. When the signal level hits a fade and drops to where it loses digital lock, you get a blast of what I may now refer to as a burst of “screeching space aliens” noise before the software gives up on the digital signal and automatically switches back to analog SSB voice mode. Once back in analog mode all you hear is the analog version of the digital signal while it tries to re-lock again. Then the digital voice comes back for a moment, lock is lost in another burst of screeching space alien noise, and then the process repeats. At least with FM on HF (yes, as you will recall from previous articles, I do occasionally get lucky with an FM simplex contact to Europe on 10 Meters < 29.600 Mhz>), when there is a fade and you lose full quieting, you just get a normal sounding static burst and then the signal quickly recovers. And with SSB voice, you can still get to hear something during the fade so you don't lose much, if anything of the conversation. But with this, and the time it takes to toggle back and retry digital lock again, it was hopeless at lower receive signal strength to understand any part of the guy's conversation.

On the plus side, I bet if you had a good antenna (instead of a dipole in the attic like me), you would have better luck receiving a solid signal and keeping the digital mode locked during a conversation. And I noticed that the bandwidth that the digital signal was using on the spectrum took up less than half of the bandwidth consumed by a normal SSB signal. That's very interesting. This seems like a positive step towards alleviating spectral crowding by allowing two conversations to take place in the spectrum normally occupied by a single SSB signal (which is already suppressed compared to a full AM signal).

For now, my verdict is that this current implementation is still in the experimental stage, and needs more development and testing before it could be adopted for general use. But it is based on an open source license, meaning anybody can see how it is currently implemented and suggest changes for improvement. Also, I can see the software developers have an active blog, and are actively working together through the issues they discover as they go. As I was writing this, a new upgrade was just released (0.96, March 23). The version I tested with did not include the new 1600 BPS mode now available in this release that is supposed to work down to 2 dB S/N. Better performance at lower S/N levels is exactly where I was having the biggest problems with the technology. I'll have to update to that version and give it another try.

Maybe a good and free HF digital voice mode for all will soon be able to be realized. With the accelerated pace that digital techniques and technologies are being experimented with in support of our hobby, this is a very exciting time to be part of ham radio!

## 2013 DUES ARE DUE

If you haven't paid your dues for 2013 please send your check payable to GCARC to: GCARC, PO Box 370, Pitman, NJ 08071



## Club Trailer

By William C Szkromiuk, N2VIL

The new Club trailer needs help to make it a viable, functional and safe place to conduct Club business and pleasure. I am presently working on permitting, schedules, priorities and assets available to perform the work. We need volunteers to assist in the various stages of this process. Below are some of the things that need to be done:

### Clean Out

Removing refuse and building materials.

Replacing a small amount of siding.

Inspecting the roof and installing roof vents for plumbing and HVAC.

Extensive HVAC work, yet to be determined.

Moving furniture and supplies from the old trailer into temporary storage and finally into the new trailer.

Painting.

Carpentry work. Interior and exterior.

Electrical work.

Plumbing.

Foundation work. Cinder Blocks and Tie-Downs. Site preparation.

As it stands, we will also need a licensed electrician and plumber to do some of the work as required for permitting.

The Club would of course like to accomplish as much as possible with Club member volunteers. But, we will employ the proper trades as necessary to complete the project to the benefit of the entire membership. As, you can imagine, probably a few other things may crop up. If anyone is willing to help in some way, please email or call me at [billszk2004@yahoo.com](mailto:billszk2004@yahoo.com) or 856-803-0580.

Also, if anyone knows Mr. Jeffrey Kier, Construction Official of Harrison Township, that would be beneficial. Mr. Kier was at one time the Fire Chief in Mullica Hill.

Please do not hesitate to send me any suggestions or questions. Thanks in advance.

## April Birthdays

Congratulations to these members celebrating birthdays in April:

Merrill Brown, WK2G  
John Bunting, KC2SGN  
Irma Colabrese, N2FNF  
Milton Frantz, K2MXF  
Norman Glenn, W2GAR  
Joseph Hogg, N2ADP  
Thomas Litle, AB2YG  
Ray Metzger, AI2B  
Mike Mollet, N2SRO  
Whitney Myers, KB2ZTL  
Keith Waltman, W2ERP

## Crosstalk Submissions

This is your Club newsletter. Make use of it. Feel free to contribute general interest articles and ideas for articles.

All submissions, queries, comments and editorials should be addressed to Gene Schoeberlein at [aa2yo@arrl.net](mailto:aa2yo@arrl.net).

Submission deadline for the May issue:  
4/24/13

## Club Website

<http://www.w2mmd.org>

President-Tom Gorman, KE2ES  
Vice President-Jim Wright, N2GXJ  
Treasurer-Al Arrison, KB2AYU

Art Strong, K2AWS  
Chuck Colabrese, WA2TML  
Mark Townsend, W2OCY

Ray Schnapp, WB2NBJ  
Bill Szkromiuk, N2VIL

### GCARC Officers

Recording Secretary-Sheldon Parker, K2MEN  
Corresponding Secretary-Cory Sickles, WA3UVV

### Board of Directors

Gary Mirkin, WA3SVW  
Dave MacDonald, WB3JOY  
Jeffery Garth, KC2WCS

### Trustees

Steve Blasko, W2TDS  
Martin Wilt, W2ILT

### Committees

ARES/RACES-Joe, KC2PHM  
Awards-Kenny, W2KRD  
Budget-Al, KB2AYU  
Clubhouse Site-Al, KB2AYU  
Club License Trustee-Darrell, AB2E  
Constitution-Adan, KC2YJX  
Contests-Ken, W2KRD  
Crosstalk-Gene, AA2YO  
Database-Ken, N2CQ  
DX-Bill, W0MHK  
Field Day-Mark/Kyle, W2OCY/W2KBT  
Hamfest-Open  
Historian-Art, K2AWS

Hospitality-Dave, WB3JOY  
Membership-Cory/Ray, WA3UVV/WB2NBJ  
Nominations-Tom, KE2ES  
Programs-Jim, N2GXJ  
Publicity-Cory, WA3UVV  
Repeaters-Tom, KE2ES  
4H Liaison-Cory, WA3UVV  
Special Services, Darrell, AB2E  
Sunshine-Ray, W2RM  
Technical/TVI-Cory, WA3UVV  
VEC Testing-Gary, N2QEE  
Website-Jeff, KC2WCS

**The W2MMD Repeaters**

147.78/18 Mhz-Pitman  
(CTCSS 131.8Hz)

223.06/224.66 Mhz-Sewell

447.1/442.1 Mhz-Pitman  
(CTCSS 167.9Hz)

1272.4/1284.4 MHz-Pitman

**GCARC Meetings**

**General Membership**

7:30 pm 1st Wednesday every month  
Pfeiffer Community Center  
Williamstown, NJ

**Board of Directors**

7 pm 3rd Wednesday every month  
GCARC Club site  
Harrison Twp. 4H Grounds  
1 mile south of Mullica Hill on RT77

**Nets**

GCARC 2 Meter Net  
Third Thursday of the Month  
8:00PM  
147.78/18Mhz (PL131.8Hz)

ARES/RACES  
Sunday 20:00 Hrs  
(147.78/18 and  
223.06/224.66  
repeaters)

Gloucester County Amateur Radio Club  
P. O. Box 370  
Pitman, NJ 08071